



# Our Heritage, Our Future

## The BLM and America's Public Lands



Suggested citation:

U.S. Department of the Interior, Bureau of Land Management. 2017. Our heritage, our future: The BLM and America's public lands. Bureau of Land Management, Office of Communications, Washington, DC.

Copies available from:

Bureau of Land Management  
National Operations Center  
Printed Materials Distribution Services  
Denver Federal Center, Building 50  
P.O. Box 25047  
Denver, CO 80225  
P-267

[www.blm.gov/history](http://www.blm.gov/history)

The mention of company names, trade names, or commercial products does not constitute endorsement or recommendation for use by the federal government.

BLM/WO/GI-18/002+1701

## Dedication

The Bureau of Land Management (BLM) dedicates this book to all of its employees—past and present. BLM employees serve the American public with enthusiasm, perseverance, creativity, conviction, and commitment, and it is through their vision that future generations will be able to experience, value, and enjoy our treasured public land heritage.



## Acronyms and Abbreviations

AIM	Assessment, inventory, and monitoring
BLM	Bureau of Land Management
EIS	Environmental impact statement
FLPMA	Federal Land Policy and Management Act
GIS	Geographic information system
GLO	General Land Office
NEPA	National Environmental Policy Act
NLCS	National Landscape Conservation System
O&C	Oregon and California
REA	Rapid ecoregional assessment
RMP	Resource management plan

## Contents

Foreword	ix	<b>Chapter 2:</b>	
Acknowledgments	xi	<b>The Bureau Embraces Ecosystem Management, 1990–2000</b>	<b>41</b>
Prologue: Management of the Public Domain Evolves, 1776–1976	1	An Interdisciplinary Approach Guides the Planning Process	41
<b>Chapter 1:</b>		Ecosystem Management Creates Challenges	43
<b>The Federal Land Policy and Management Act Guides the Way, 1976–1990</b>	<b>3</b>	A Threatened Species Influences Northwest Forest Management	43
Land Use Planning Enters A New Era	3	A Forest Summit Leads to the Development of the Northwest Forest Plan	44
Forest Management Generates Debate	7	Science and Politics Merge in the Interior Columbia Basin	47
Range Policy Changes Focus	9	Rangeland Conditions Improve	49
Riparian Resource Management Finds Common Ground	10	Fish and Wildlife Habitat Improvements Help Restore Populations	51
Fish and Wildlife Inventories Lead to Habitat Protection	12	“Riparian–Wetland Initiative for the 1990s” Establishes Restoration Goals	51
Cultural and Heritage Resources Face Growing Threats	15	The War on Weeds Gets Underway	54
Designated Recreational Areas Increase	17	Abandoned Mine Cleanups Recover Lost Landscapes	54
The Wilderness Inventory Process Begins	20	“Recreation 2000” Ushers In New Programs and Sites	54
Energy and Minerals Management Focuses on Independence	23	Cultural and Paleontological Resources Comprise the	
Public Land Disposal Authority Expands	27	“Great Outdoor Museum”	57
Congress Provides Law Enforcement Authority	30	The President, Congress, and the Bureau Recognize Special Places	61
Changes Influence Fire and Aviation Management	34	The Wild Horse and Burro Program Addresses Controversy	63
Wild Horse and Burro Inventories Identify Issues	38	Energy and Minerals Management Considers Environmental Changes	65
Notes	40	Wildland Fire Management Reaches a Turning Point	68
		Congress Passes Realty Management Reforms	71
		The Bureau Develops a Professional Law Enforcement Program	71
		Notes	74



Adobe Town Wilderness Study Area in Wyoming.

<b>Chapter 3:</b>	<b>Chapter 4:</b>
<b>Collaborative Management Helps Address 21st Century Challenges, 2000–2009</b> _____ <b>75</b>	<b>National Concerns Lead the Bureau in a New Direction, 2009–2012</b> _____ <b>137</b>
The Secretary Establishes the National Landscape Conservation System _____ <b>75</b>	America Invests in Jobs _____ <b>137</b>
Public Lands Experience Record Fire Seasons _____ <b>82</b>	Energy and Minerals Programs Undergo Changes _____ <b>138</b>
A National Energy Policy Emerges _____ <b>87</b>	Initiatives Address Climate Change on Public Lands _____ <b>141</b>
The President Launches the Healthy Forests Initiative _____ <b>95</b>	The National Landscape Conservation System Becomes Permanent _____ <b>144</b>
The Bureau Revises Its Western Oregon Plans _____ <b>96</b>	Recreation Demands Continue to Grow _____ <b>150</b>
The Secretary Announces the Healthy Lands Initiative _____ <b>97</b>	Partners, Youth, and Volunteers Pitch In _____ <b>151</b>
Habitat Assessments Take a Landscape Approach _____ <b>99</b>	Large-Scale Efforts Require a Strategic Planning Approach _____ <b>153</b>
The Bureau Focuses on Healthy, Sustainable Rangelands _____ <b>105</b>	Wildlife Habitat Conservation Stretches Across Landscapes _____ <b>153</b>
The Wild Horse and Burro Program Reaches a Critical Crossroads _____ <b>107</b>	Fire Policy Allows Management for Multiple Objectives _____ <b>155</b>
Cultural and Paleontological Resources Take the Spotlight _____ <b>109</b>	A Task Force Revisits Northwestern Forest Issues _____ <b>157</b>
Recreation Management Focuses on Outcomes _____ <b>112</b>	The Rangeland Program Addresses Drought Conditions _____ <b>158</b>
The Lands and Realty Program Tackles Challenges _____ <b>114</b>	The Secretary Develops a New Wild Horse and Burro Strategy _____ <b>158</b>
Law Enforcement Collaborates with Local Partners _____ <b>118</b>	Lands, Realty, and Cadastral Survey Programs Support Bureau Priorities _____ <b>160</b>
A New West Leads to a Renewed Planning Emphasis _____ <b>123</b>	Law Enforcement Officers Protect Against Resource Damage and Threats to Public Safety _____ <b>165</b>
The Bureau Develops a 21st Century Workforce _____ <b>127</b>	Public Lands Provide Economic and Intrinsic Value _____ <b>166</b>
The Secretary Designates the National System of Public Lands _____ <b>131</b>	Notes _____ <b>169</b>
Notes _____ <b>133</b>	
	<b>Epilogue: The Bureau Looks to the Future, 2013 and Beyond</b> _____ <b>173</b>
	<b>Appendix: Directors of the Bureau of Land Management</b> _____ <b>174</b>
	<b>Index</b> _____ <b>177</b>

## Featured Stories

<b>Chapter 1</b> _____ <b>3</b>	<b>Chapter 2</b> _____ <b>41</b>
The Transforming Effect of the Natural Resources Defense Council Consent Decree <i>By D. Dean Bibles</i> _____ <b>9</b>	Ecosystem Thinking Comes to the Public Lands <i>By Mike Dombeck</i> _____ <b>42</b>
Grazing Fees: The Next Generation <i>By Judy Nelson</i> _____ <b>11</b>	Creating Options in Western Oregon <i>By Mike Benefield</i> _____ <b>44</b>
Evolution of a Biologist <i>By Tim Carrigan</i> _____ <b>14</b>	The Road Less Traveled <i>By Gloria Brown</i> _____ <b>46</b>
Working Underground for the Bureau of Land Management <i>By James Goodbar</i> _____ <b>16</b>	The Interior Columbia Basin Ecosystem Management Project <i>By Cathy Humphrey</i> _____ <b>48</b>
Rio Grande Wild and Scenic River <i>By Theresa Herrera</i> _____ <b>18</b>	The First Resource Advisory Council Meeting—The First Broadcast <i>By Chip Calamaio</i> _____ <b>50</b>
The Battle to Conserve the “Crown Jewels” <i>By Cecil D. Andrus</i> _____ <b>22</b>	The Evolution of Aquatic Resource Management in the BLM <i>By Mike Crouse</i> _____ <b>53</b>
The Year of Three Agencies <i>By Larry Bauer</i> _____ <b>25</b>	The Fortymile National Wild and Scenic River <i>By Gene Ervine</i> _____ <b>55</b>
Northern Futures <i>By Bob Faithful</i> _____ <b>28</b>	Leading by Example: Volunteers and Friends Groups <i>By Dave Hunsaker</i> _____ <b>56</b>
A Long Tradition of Federal Resource Protection <i>By Steven Martin</i> _____ <b>30</b>	Who Owns Big AI? <i>By John P. Lee</i> _____ <b>57</b>
The Sagebrush Ceiling <i>By Lynell Schalk</i> _____ <b>33</b>	The Bisti Beast: The First Paleontological Excavation in BLM Wilderness <i>By Pat Hester</i> _____ <b>58</b>
Firefighting: Then and Now <i>By The BLM’s National Interagency Fire Center External Affairs Staff</i> _____ <b>36</b>	Environmental Education on the Ground: Native Plant Restoration at Grand Staircase-Escalante National Monument <i>By Beth Kampschror</i> _____ <b>60</b>
Adoptions Place Mustangs in Good Homes <i>By Sarah Beckwith</i> _____ <b>39</b>	Reminiscences of Wilderness and Training <i>Compiled by Jim Foote</i> _____ <b>62</b>
	Managing the BLM’s Helium Program <i>By Leslie A. Theiss</i> _____ <b>67</b>
	From Chains to Lasers and Global Satellites <i>By Robert Casias</i> _____ <b>70</b>



Continental Divide National Scenic Trail in Colorado.

<b>Chapter 3</b>	<b>75</b>
Establishment of the National Landscape Conservation System	
<i>By Tom Fry</i>	<b>77</b>
The National Landscape Conservation System Extends to the Subtropics	
<i>By Bruce Dawson</i>	<b>79</b>
Pulling Together to Preserve History	
<i>By Mike Abel</i>	<b>81</b>
Great Basin Restoration Initiative	
<i>By Mike Pellant</i>	<b>82</b>
Invasive Species Alter Fire Regimes and Fire Operations	
<i>By Ken Frederick</i>	<b>84</b>
Life on a BLM Engine	
<i>By Kari Boyd-Peak</i>	<b>85</b>
Milford Flat: Utah's Largest Fire Rehabilitation Project	
<i>By Lola Bird</i>	<b>86</b>
Powder River Basin Resurveys: 20 years—16,000 Monuments	
<i>By Joel T. Ebner</i>	<b>89</b>
The Legendary Roan Plateau	
<i>By Jamie Connell, with David Boyd</i>	<b>91</b>
Just How Big Is That Right-Of-Way Grant?	
<i>By Tom Hurshman</i>	<b>93</b>
The BLM's Innovative Approaches to Renewable Energy Development in Arizona	
<i>By Kathy Pedrick</i>	<b>94</b>
Restore New Mexico: A Model for the Nation	
<i>By Jesse Juen</i>	<b>98</b>
Looking Beyond the Strutting Grounds: Changing the Way the BLM Manages Wildlife Habitat	
<i>By Dale Tribby</i>	<b>100</b>
Lake Havasu Fisheries Improvement Program 1992–2011	
<i>By Lori Cook</i>	<b>102</b>
The Native Plant Materials Development Program and Seeds of Success	
<i>By Peggy Olwell</i>	<b>104</b>
Terror Comes to the High Desert: BLM Wild Horse and Burro Corrals Are Firebombed	
<i>By Joseph Fontana</i>	<b>108</b>

Paleontological Resources Preservation Act of 2009	
<i>By Lucia Kuizon</i>	<b>110</b>
Managing a Modern Day Fossil Bone Rush	
<i>By Alan L. Titus</i>	<b>111</b>
Travel Management Is Everyone's Business	
<i>By Mark Goldbach</i>	<b>112</b>
Shelf Road Climbing Area: The BLM and the Climbing Community Scale the Heights of Partnership	
<i>By Mark Hesse</i>	<b>113</b>
New Century Brings New Funding for Land Acquisitions	
<i>By David Beaver</i>	<b>115</b>
Alaska Land Transfer	
<i>By Ramona Chinn and Christy Favorite</i>	<b>116</b>
Stones and "Bones" Set by William (Billy) Octavius Owen in Wyoming	
<i>By J.D. "Sam" Drucker</i>	<b>117</b>
Special Agents Work with Resource Specialists to Uncover Fraud and Theft	
<i>By Joe Nardinger</i>	<b>119</b>
BLM Investigative Work Leads to Arson Convictions	
<i>By Kyle Gandiaga</i>	<b>120</b>
The BLM Meets the Counterculture at the Burning Man Festival	
<i>By Doran Sanchez</i>	<b>122</b>
Tribal Consultation	
<i>By James G. Kenna</i>	<b>126</b>
The Changing Face of the BLM	
<i>By Melissa Dukes</i>	<b>127</b>
The Maturing of the BLM's Tribal Relationships	
<i>By Cheryle Cobell Zwang</i>	<b>129</b>
Back to the Future: Changes in the BLM's Organization in the 21st Century	
<i>By Rebecca Mack and Alexandra Ritchie</i>	<b>130</b>
A Director's Perspective: 2007-2009	
<i>By James L. Caswell</i>	<b>132</b>

<b>Chapter 4</b>	<b>137</b>
From Alaskan Sourdough to Little Miss Sunshine	
<i>By Linda Resseguie</i>	<b>140</b>
The BLM Takes a Landscape Approach	
<i>By Kit Muller and Barry Rose</i>	<b>143</b>
Owyhee Canyonlands: A Lesson in Perseverance	
<i>By Robin Fehlau</i>	<b>145</b>
Celebrating Science in the National Landscape Conservation System	
<i>By Marietta Eaton</i>	<b>147</b>
Celebrating the Legacy and Centennial of the Iditarod National Historic Trail	
<i>By Kevin Keeler</i>	<b>149</b>
America's Backyard: The Growth of Outdoor Recreation on BLM Lands	
<i>By Bob Ratcliffe and David O. Howell</i>	<b>151</b>
Technological Changes Enhance Safety, Operations in Wildland Firefighting	
<i>By Sheri Ascherfeld</i>	<b>156</b>
Land and Water Conservation Fund Acquisitions	
<i>By David Beaver</i>	<b>162</b>
The Road to Resolution: Revised Statute 2477	
<i>By Jeff Holdren</i>	<b>164</b>
The Value of the BLM's Wild Side: Western Communities Benefit from Open Landscapes	
<i>By Luther Propst</i>	<b>167</b>
Is Democracy Compatible with Conservation?	
<i>By Patricia Nelson Limerick</i>	<b>168</b>



White Mountains National Recreation Area in Alaska (L and R photos).



Old homestead in Idaho.



Rogue River Ranch National Historic Site in Oregon.

## Foreword

This book highlights the recent history of the BLM and serves as a sequel to “Opportunity and Challenge: The Story of BLM,” released in 1988. It reviews significant changes that occurred within the agency through 2012 and explains how those changes affect public lands today. Together, the two books present a brief history of public land management, from the creation of the General Land Office (GLO) in 1812 to the 200th anniversary of the GLO in 2012.

While the book recognizes the Bureau’s evolution from the GLO, we also consider this work a reflection of how well suited the BLM is to address the Trump administration’s priorities. This means supporting energy independence through environmentally responsible development; promoting conservation through shared stewardship; making America safe through effective border management; promoting jobs on working landscapes; and serving the American family by

being good neighbors and recognizing traditional uses of public lands.

We do this through the Federal Land Policy and Management Act, passed by Congress in 1976. This law enables us to promote multiple uses of public lands so that they may best meet the present and future needs of the American people.

Applying multiple use management requires broad knowledge and skill. This is because of the breadth and diversity of today’s public land resources and what they mean to the public. But the BLM has considerable experience to rely on.

You see, the BLM’s roots go back to the early years after America’s independence, when the young nation began acquiring additional lands. At first, Congress used these lands to encourage homesteading and westward migration. To support this national goal, Congress created the GLO. Over time, values and attitudes regarding public lands

shifted, and Congress merged the GLO and another agency, the U.S. Grazing Service, creating our agency in 1946.

This book is unique in that it draws largely from the firsthand experiences of current and former BLM employees. They are not historians, but they have lived a specialized history, implementing evolving public land management direction and meeting the late 20th and early 21st century challenges of multiple use management in the face of increasing demands for public land uses. In short, they are real Americans working to turn public policy into reality on the ground.

In reading “Our Heritage, Our Future: The BLM and America’s Public Lands,” I am confident you will see that as history has shaped public lands and how they are used, our agency has been there to meet the opportunities and challenges that accompany change.

Michael D. Nedd  
Acting Deputy Director, Operations  
Bureau of Land Management



Basin and Range National Monument in Nevada.



Gooseberry Mesa National Recreation Trail in Utah.

## Acknowledgments

The BLM produced “Our Heritage, Our Future: The BLM and America’s Public Lands” as part of a commemoration of two important anniversaries: the creation of the General Land Office in 1812 and passage of the Homestead Act of 1862. The BLM and numerous partners launched a variety of additional efforts in 2012, including holding local and national celebrations and symposia, establishing a history website, and developing an illustrated timeline of major events in the BLM’s history. One such partner, the Public Lands Foundation, which is largely comprised of BLM retirees, provided assistance in developing some of the material included in this book, and many of its members participated in the events described here.

A BLM history team produced the book, the website, and other educational products. The team consisted of Celia Boddington, Peter Doran,

Derrick Henry, Linda Hill, Dave Hunsaker, Jennifer Kapus, Jeff Kitchens, Jeff Krauss, Elizabeth Rieben, Mitch Snow, Hans Stuart, Kyle Sullivan, Twinkle Thompson, and Bev Winston. The team is indebted to the book’s authors: Derrick Baldwin, Bibi Booth, Elaine Brong, Don Buhler, Brianna Candelaria, Bob Casias, Elena Daly, Randy Eardley, Shelly Fischman, Tony Garrett, Kim Harb, Margaret (Megg) Heath, Jeff Holdren, Jeff Kitchens, Steve Martin, Geoff Middaugh, Jeanne Moe, Elizabeth Rieben, Don Smurthwaite, Mitch Snow, Matt Spangler, Hans Stuart, Twinkle Thompson, and Elizabeth (Betsy) Wooster. Tremendous gratitude goes to these authors as well as the authors of more than 200 sidebars for sharing stories that so enrich the BLM’s literary landscape and celebrate our public land heritage.

The book could not have been written without the assistance and contributions of Brian Amme, Joe Ashor, Shayne Banks, Chip Calamaio, Don Charpio, Glen Collins, Elena Fink, Sam Guagush, Rich Hanson, Dave Harmon, Deborah Harnke, Robin Hawks, Antonia Hedrick, Rob Hellie, Sherry Hendren, Doug Herrema, Michael Hildner, Jeff Jarvis, Marilyn Johnson, Barbara Klassen, Jerry Magee, Dick Mayberry, Dennis McLane, Kim Menning, Ted Milesnick, Cynthia Moses-Nedd, Kit Muller, Lauren Pidot, Bob Ratcliffe, Deb Rawhouser, Linda Rundell, Deb Salt, Laurie Sedlmayr, Ed Shepard, Tim Spisak, Bob Stahl, Joe Stout, Andrew Strasfogel, Mary Tisdale, Jeanne Van Lancker, Bob Wick, Davina Wilkins, and Elaine Zielinski.



A Montana ranch (1872).



Immigrants traveling west.

## Prologue | Management of the Public Domain Evolves, 1776–1976

The Bureau of Land Management’s (BLM’s) story began with the 1783 Treaty of Paris, marking the end of the Revolutionary War. Great Britain relinquished its claim to the 13 colonies and ceded another 237 million acres of land reaching west to the Mississippi River, forming the nation’s original “public domain.” In 1785, the United States created a Land Ordinance that became the basis for the surveying, securing, and selling of all public lands into the future.

From 1803 to 1867, the United States acquired over a billion acres of land, including Florida, Texas, the Southwest, the Northwest, and Alaska. To oversee the disposition of these lands, Congress established the General Land Office (GLO) in the Treasury Department in 1812. In 1849, the GLO moved to the newly formed Department of the Interior.

Between 1850 and the early 1900s, the United States focused on three key areas related to public land management: transportation, resource use and extraction, and homesteading. During this period, the United States established its first reserves for timber and lead. Through land grants for wagon roads and canals in the 1820s, the nation set a clear precedent for determining where and how to establish infrastructure. In 1862, Congress passed the Homestead Act, which opened the floodgate of settlement in the West by giving 160 acres of land to qualified persons who had lived on the land and improved it for 5 years. Other acts encouraging

further settlement followed, including the Timber Culture Act, Desert Land Act, and Stock Raising Homestead Act.

At the beginning of the 20th century, President Theodore Roosevelt promoted the idea that land and its resources had an inherent worth beyond extraction and development. Roosevelt, one of history’s great conservationists, focused on using public lands to promote the best and highest use of resources while also considering future generations and their needs. During his tenure, President Roosevelt oversaw the creation of 150 national forests, more than 20 national parks and monuments, and 55 bird and wildlife reserves, leaving a permanent mark on the nation’s public domain.

With fewer than 200 million acres of vacant public domain remaining by the 1920s, free and open land had become a rare commodity for those looking to develop large farming or ranching operations. Furthermore, the land that remained was often overgrazed. In 1928, Congress authorized the Mizpah-Pumpkin Creek Grazing District in Montana, the first grazing district on public lands. An association of ranchers leased these lands and instituted conservative grazing practices. Ranchers from across the West soon petitioned for similar grazing reserves in their areas, which led to passage of the Taylor Grazing Act in 1934. After signing the act, President Franklin Roosevelt withdrew

all vacant, unreserved, and unappropriated public lands in the West from entry for other than mineral use so that grazing districts could be set aside and the remaining public lands classified for their best use. The Department of the Interior created the Division of Grazing, which would later become the Grazing Service, to administer these grazing districts.

In 1946, seeking to relieve tensions over grazing fee increases between the Grazing Service and Congress, Secretary of the Interior Harold Ickes recommended merging the Grazing Service with the GLO. President Harry Truman forwarded the proposal to Congress as part of his Reorganization Plan No. 3, and on July 16, 1946, the Grazing Service and the GLO became the BLM. The BLM not only inherited the duties of the GLO and Grazing Service, it also incorporated the Alaska Fire Service, various revested lands (including the Oregon and California Railroad lands and the Coos Bay Wagon Road



President Theodore Roosevelt.



President Franklin Roosevelt.



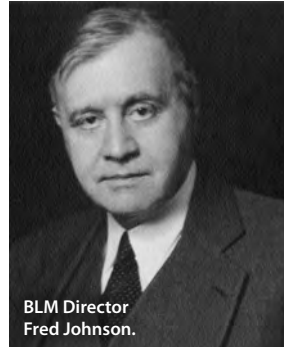
President Harry Truman.



lands), and multiple mineral reserves.

The reorganization plan did not provide a clear mandate or any additional formalized direction. Fred Johnson, the first director of the BLM, headed an agency of almost 700 employees, most of them having worked for the GLO in the Washington Office. Just 86 employees oversaw 150 million acres of grazing land. By 1948, continued controversy led to major budget cuts for the agency, reducing staff by more than half and barely funding most programs.

In 1948, Secretary of the Interior J.A. Krug named Marion Clawson as the BLM's second director. Clawson reorganized the BLM and laid the



foundation for the agency's multiple use mission. During the 1950s, the BLM formalized its forestry, recreation, minerals management, wild horse and burro, and wildlife programs.

The 1960s brought rapid growth and fundamental change to the BLM, permanently altering the Bureau's course. President John Kennedy asked the BLM to accelerate its inventory of the public lands and develop a program of balanced use to reconcile resource conflicts. The agency also began taking on its first conservation-focused lands in the form of wild and scenic rivers and national scenic and historic trails.

In 1964, Congress established the Public Land Law Review Commission to study the nation's 3,000 land laws and federal management of the public domain to identify problems and recommend

new policies, programs, and legislation. In its 1970 report, "One Third of the Nation's Land," the Commission recommended that the United States consider retaining most of the public domain. From the late 1960s through the mid-1970s, Congress passed a host of new laws, including the National Environmental Policy Act (NEPA), Air Quality Act, Wild and Free Roaming Horses and Burros Act, Federal Water Pollution Control Act, Endangered Species Act, and Energy Policy and Conservation Act, that would change how the BLM did business. However, none of these would match the Federal Land Policy and Management Act (FLPMA) of 1976, the BLM's Organic Act, for the change it would bring to the agency. FLPMA (pronounced flip-ma) formally recognized what the BLM had been doing for many years: managing the public lands under the principles of multiple use and sustained yield.



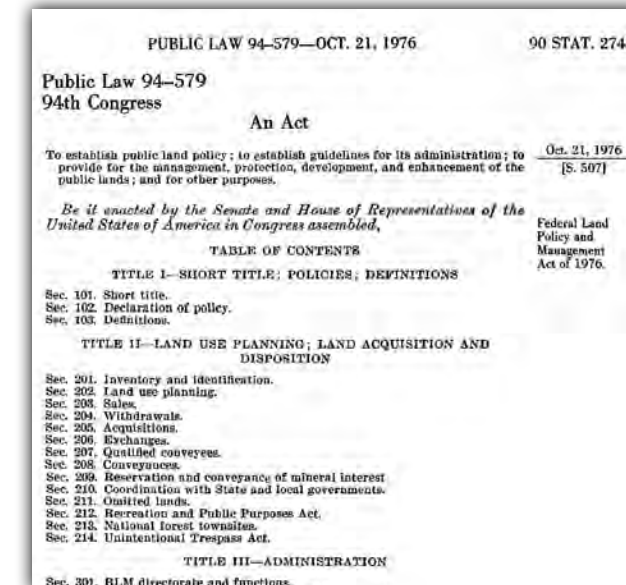
Timber sale on public lands in Wyoming (1965).



## Chapter 1 | The Federal Land Policy and Management Act Guides the Way, 1976–1990

The Federal Land Policy and Management Act of 1976 was landmark legislation that established the mission of the Bureau of Land Management along with the initial statutory authorities necessary to advance that mission. FLPMA merged the many disparate public interests and values of the public lands into one unified mission of "multiple use and sustained yield."

The policy embodied in FLPMA reflected an evolution that had already begun within the BLM and one that continues today—a holistic perspective of the land that recognizes the interdependence of resources and the necessity of using scientific and interdisciplinary methods to manage them.



### Land Use Planning Enters a New Era

FLPMA represented a fundamental change in public attitudes about the management of the nation's public lands. For the first time, Congress stated that America's public lands comprised nationally significant resources and recommended retaining them in public ownership.

This new policy sparked an era of comprehensive land use planning in the BLM that guided future management of the public domain for the benefit of the American people. FLPMA mandated that the Secretary of the Interior, through the BLM, conduct land use planning using a "systematic interdisciplinary approach, to achieve integrated consideration of physical, biological, economic, and other sciences" in support of multiple use, which it defined in part as "harmonious and coordinated management of the various resources," and sustained yield principles. An important requirement was that the BLM coordinate with other federal agencies and state, local, and tribal governments and involve the public in developing the new land use plans.

The BLM began developing this new land use planning system in the late 1970s, incorporating FLPMA's core mandates of multiple use and sustained yield of resources. This new system built upon the BLM's management framework plans of the 1960s, eventually replacing them with resource management plans (RMPs).<sup>1</sup> Over the next several decades, the BLM continually refined and improved its land use planning process and adapted it to a changing West and a changing world.



BLM range conservationists working in the Poncha Pass Resource Conservation Area south of Salida, Colorado (1962).

## Planning Ties to Other Federal Land Policy and Management Act Requirements

To enhance the BLM's management and decisionmaking capability, FLPMA directed that the Bureau "prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values" and that "this inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values." The BLM expanded its existing inventory efforts to comply with FLPMA's more demanding requirement to catalog and quantify rangelands, fish and wildlife habitat, mineral and archaeological resources, recreational opportunities, lands with wilderness characteristics, and other values on the public lands.

FLPMA also required the BLM to recognize and manage areas of critical environmental concern and to give priority to designation through the planning process. FLPMA defined these areas as public lands where special management attention is required to protect historic, cultural, or scenic values; fish and wildlife resources; and other natural systems. Furthermore, FLPMA allowed the BLM to designate areas of critical environmental concern to protect life and safety from natural hazards that require management action.

In testimony given to the House of Representatives in 1971, Secretary of the Interior Rogers C.B. Morton stated:

"The identification of the most critical environmental areas will be given a high priority by this Department so that those areas may be given the protection they so urgently need. . . . The national resource

lands are in a real sense our last frontier. We cannot afford to squander their riches."<sup>2</sup>

Over the next 40 years, the BLM designated nearly 1,000 areas of critical environmental concern, protecting important characteristics and values of more than 20 million acres of public lands.

Additionally, FLPMA directed the BLM to "take any action necessary to prevent unnecessary or undue degradation of the lands." The BLM applied this standard of "undue degradation" on authorizations in all of its program areas. The broad discretion provided by this standard allowed the BLM to restrict certain uses, such as the development of mining claims or mineral leases, to protect land and other resources. The authority was strengthened a year later by the Surface Mining Control and Reclamation Act, which authorized the Secretary of the Interior to designate certain federal lands as unsuitable for coal mining operations.

In FLPMA, Congress also stated its policy that "the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber from the public lands." Fulfilling its multiple use and sustained yield mission required the BLM to balance the need for these commodities with other land

uses and environmental values. This challenge was noted as early as 1970 by the Public Land Law Review Commission, which recommended that Congress "establish firm preferences among uses" or "establish statutory standards reflecting value judgments as to the prevailing importance of various broad objectives served by the public lands." However, neither Commission members nor Congress could agree on how to accomplish this ordering of user preferences or prioritizing of public lands values. In the end, the BLM used its own discretion in making such determinations.

The BLM made critical decisions for allocating the land's resources at the land use planning stage. "Land use planning is the backbone of the BLM, the blueprint for everything we do," said Elaine Zielinski, a former BLM state director for Oregon and Arizona. "It's the arena where the public and organizations have the most impact on how public lands are managed." Planning decisions identified the activities and foreseeable development allowed, restricted, or excluded for all or a part of the planning area over the life of the plan. More extensive resource inventories and monitoring data helped the BLM make more informed decisions but did not necessarily make the decisions any easier. Nor did they enable managers to avoid controversy when making hard choices.



## The California Desert Becomes a Planning Showcase

Among the specific land use directives included in FLPMA was a provision calling for the creation of the California Desert Conservation Area. Managing nearly 11 million acres of public lands in the southern California desert area had become a singular challenge for the BLM. Public use of these desert lands had rapidly increased over the years, along with competition among user groups and degradation of the desert ecosystem.

FLPMA's directive for a "comprehensive long-range plan" for the area launched one of the most extensive planning efforts ever undertaken by the BLM. The Bureau hired more than 60 planners and resource specialists and dedicated millions of dollars to extensive resource inventories, monitoring, and regular revisions. The BLM designed the California Desert Conservation Area plan to be dynamic and adaptable. The result became a showcase for the BLM's resource management planning efforts. The BLM had succeeded in meeting all of Congress' requirements with a plan that balanced the diverse public demands and needs.

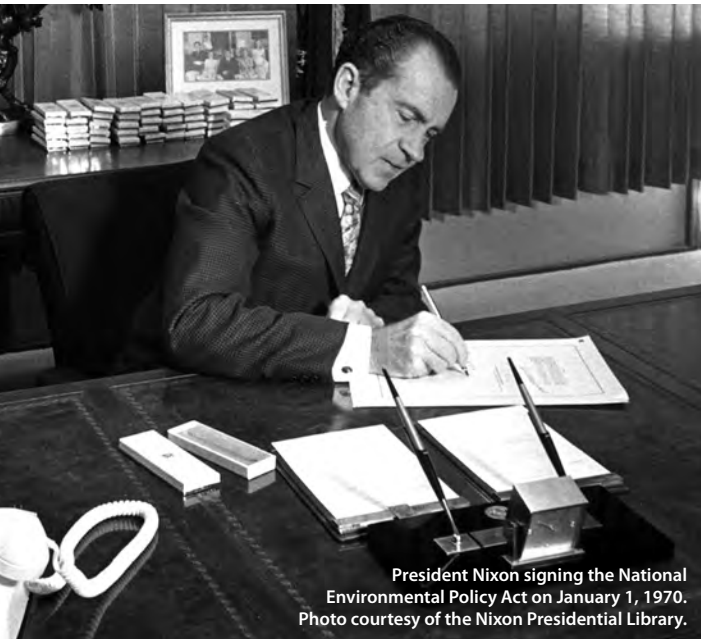
It soon became clear, however, that the Bureau could not replicate the level and intensity of effort devoted to the California Desert Conservation Area plan for other plans. Nevertheless, the BLM carried many components forward in its planning system, such as inventory and monitoring, the use of early geographic information system (GIS) technology, and the creation of an automated system to collect information. The BLM piloted new programs, such as wilderness and visual resource management, in the California desert planning process that became models for adoption Bureauwide.



## Planning Addresses Environmental Concerns

Before FLPMA's passage, Congress had enacted major environmental legislation during the 1960s and 1970s—the Wilderness Act of 1964, the Wild and Scenic Rivers Act of 1968, the National Trails System Act of 1968, the Clean Air Act of 1970, the Clean Water Act of 1972, and the Endangered Species Act of 1973. For the BLM and its planning program, the National Environmental Policy Act of 1969 had the greatest impact.

Reflecting the strength of the nation's environmental movement, the Senate unanimously passed NEPA and President Richard Nixon signed it into law on January 1, 1970. "By my participation in these efforts," Nixon said, "I have become further convinced that the 1970's absolutely must be the years when America pays its debt to the past by reclaiming the purity of its air, its waters, and our living environment. It is literally now or never."<sup>3</sup>



President Nixon signing the National Environmental Policy Act on January 1, 1970. Photo courtesy of the Nixon Presidential Library.



A forester drawing a map of a recreation site in Oregon (1970).

NEPA's statement of purpose echoed the nation's new concern for the environment—and its idealism in addressing conservation issues:

"To declare national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation . . ."

Congress intended that NEPA would ensure more informed decisionmaking on federal actions that may affect the environment. NEPA required federal agencies to analyze significant impacts from major proposed federal or federally funded actions—and to disclose them to the public—before making decisions. It required agencies to present their actions, discuss them with the public, and develop final management actions after extensive on-the-ground evaluation and public notification of a range of possible alternatives.

NEPA requirements dramatically changed the way the BLM authorized activities on the public lands. The BLM could still make decisions that would have adverse impacts on the environment

but was required to incorporate detailed analyses of proposed actions and alternatives, both at the local level and cumulatively across regions and over longer timeframes.

The following years severely and relentlessly tested NEPA's vision for "productive and enjoyable harmony between man and his environment" and FLPMA's vision for "harmonious and coordinated management" of public land resources. As former BLM Director Frank Gregg said, "With the passage of FLPMA in 1976, BLM had reason to hope for a period of stability, a window of opportunity to concentrate on refinement of multiple use management systems for the public lands. It didn't work out that way. On the contrary, the years immediately after FLPMA were arguably among the most politically volatile in public land history."<sup>4</sup>



BLM Director Frank Gregg.

## A Sagebrush Rebellion Arises

FLPMA's planning provisions gave state and local governments greater influence in public land management than ever before. Federal land policy was changing direction toward more balanced management for multiple use, sustained yield, and a greater emphasis on conservation of natural resources, and these changes raised some opposition.

This opposition coalesced in a "Sagebrush Rebellion" that found its voice in the Nevada Legislature in 1979 with passage of a bill to give the state control of certain BLM lands within Nevada's borders. Similar measures soon followed in the Arizona, New Mexico, Utah, and Wyoming legislatures.

Though the Sagebrush Rebellion failed in its stated goal of giving western states control over public lands within their borders, it succeeded in promoting the causes of traditional public land users, including ranching, mining, timber, and other interests.

In 1980, John D. Leshy,<sup>5</sup> assistant solicitor for the Department of the Interior, predicted that the Sagebrush Rebellion would ultimately be viewed as representing "not the beginnings of a second American Revolution, but instead a last gasp of



FLPMA called for balanced management of public land uses.

a passing era, a poignant effort to turn back the clock to the days when competition among uses of federal lands was rare, when resources seemed inexhaustible, and when a consensus existed for exploitation."<sup>6</sup>

"Yet there are reasons to welcome it," Leshy wrote. "For one thing, it will focus attention on positive as well as negative attributes of federal land ownership, out of which may ultimately emerge an even stronger consensus for sound land management."

## Forest Management Generates Debate

No BLM program became more controversial than forest management within the lands covered by the Oregon and California Revested Lands Sustained Yield Management Act of 1937, known as the "O&C lands," and within the BLM's remaining public domain forests.

The war effort and the postwar housing boom of the 1940s required the timber industry to accelerate the harvest of industrial forest lands with the understanding that the federal forests would help fill the nation's growing need for timber while the next rotation grew in private forests.

The Public Land Law Review Commission, in its 1970 report, expressed its belief that federal policy for timber management and investment should be market-driven:

"On dominant timber production areas, this will mean that the primary directive to the public land management agencies should be to maximize the net dollar return to the Federal Treasury in the long

run. This does not mean, of course, that other considerations on these lands are not important. We do not believe that the use of economic guidelines will lead to a deterioration of the land and its capacity to produce other values."<sup>7</sup>

Likewise, the 1973 President's Advisory Panel on Timber and the Environment called for substantial increases in federal timber production and noted the possibilities for increasing production from old-growth forests by 50 to 100 percent.<sup>8</sup>



Timber sale in the Coos Bay District in Oregon.

In 1975, in compliance with NEPA, the BLM completed a programwide, or "programmatic," environmental impact statement (EIS) for its forest management activities. Within a year, however, the National Resources Defense Council challenged the adequacy of the EIS. The subsequent lawsuit settlement required the BLM to prepare EISs for 13 sustained yield units in western Oregon, 1 unit in northern California, and 1 unit in northern Idaho. During this process, the BLM also updated its timber management plans, completing them in 1983.

Congress and succeeding administrations continued to fund the BLM and U.S. Forest Service timber production programs at or near the historic harvest levels of the mid-1960s. In June 1979, President Jimmy Carter, seeking to reduce the inflationary effects of timber prices on housing, ordered the BLM and the U.S. Forest Service to put aside the policy of “non-declining even flow,” which would limit timber sales to “a quantity equal to or less than a quantity which can be removed from such forest annually in perpetuity.” President Carter’s order called for accelerated production—even from old-growth forests, wherever it was economically and environmentally feasible.

The BLM continued to comply with environmental statutes and policy directives that governed federal forest management. In 1979, the Bureau began updating land use plans, timber plans, and EISs for its 16 forest planning areas in Oregon and California.

The increased rate of timber harvests, including old growth, along with the practice of clearcutting and the use of herbicides to aid reforestation, sparked a protest movement by environmental activists that spread across the Pacific Northwest and lasted for decades. Many environmental organizations held nonviolent demonstrations. Protest groups such as Earth First! used more aggressive tactics. “The Spokesman-Review” captured the wrath that this organization provoked among forest industry supporters years later in a 1996 editorial:

“In Earth First! speak ‘fun’ means a group of screwballs chaining themselves to gates, trucks, equipment and even a buffet table; pouring sand in gas tanks; draining oil from police cars, burying themselves in a logging road; trespassing; sitting in trees—

anything that will hamper legal logging on public land.”<sup>9</sup>

The rising tide of environmental opposition to federal timber practices and the political and economic counterpressures for increased production grew more intense in the 1980s, heading toward what Presidential candidate Bill Clinton later described as a “train wreck.”<sup>10</sup>

Even as the environmental movement was gaining momentum in its fight to protect old-growth forests and change clearcutting and herbicide practices, federal timber policy continued to call for aggressive timber production.

In the early 1980s, with growing interest in the potential of alternative sources of energy, the BLM began to consider the energy and economic potential of the 21 million acres of woodlands (as opposed to the commercial timber forest lands) it managed. In 1983, the Bureau reported that woodlands contained an estimated 200 million cords of firewood or the energy equivalent of 761 million barrels of fuel oil. Residues from timber harvests also represented significant energy potential. Subsequent inventories and economic, environmental, social, and technological studies led the BLM to develop a robust program for support of biomass energy, along with a variety of nontimber forest products.

Annual timber sale volumes from Oregon and Washington public domain lands during the 1980s ranged from 0 to 5 million board feet. Timber sales from these lands were often valuable to local mills that could harvest on these lower elevation forests when snow kept them out of the higher U.S. Forest Service lands. Those lands did not have the same mandate to produce timber as the O&C lands, so

production often fluctuated. The BLM’s first policy for its forestry program gave direction to manage for forest health, with forest products being a byproduct of treatments rather than the objective of management.

Rapid economic growth in the mid- to late 1980s created additional demand for and acceleration of timber harvests. In 1988, the BLM reported that timber harvests from all BLM forests in western Oregon had reached a 10-year high, totaling 1.64 billion board feet. Federal receipts from the harvests came to \$200 million, with the 18 O&C counties receiving 50 percent. Yet the numbers contained a footnote that signaled a shift in future policies. The BLM had not been able to offer the full allowable harvest level of 1.176 billion board feet for sale in 1988 due to a preliminary court injunction halting the harvest of timber in areas assumed to be habitat for the northern spotted owl.

The courts vacated the injunction after Congress approved the Northwest Timber Compromise of 1989 to legislate a solution to a conflict that would allow harvest of old growth timber while enhancing protections for the northern spotted owl. However, the legislation was effective for only 1 year. When the “compromise” expired, a new era of legal and social conflict over forest management in the Pacific Northwest began, persisting throughout the following decade and beyond.



Northern spotted owl.

## Range Policy Changes Focus

Before the enactment of NEPA, managing rangelands—which represent about three-fourths of all BLM public lands—had been a relatively straightforward process under the Taylor Grazing Act of 1934. The act allowed rangelands deemed “chiefly valuable for grazing and raising forage crops” to be divided into grazing districts. A “district grazer” generally had no reason to look



Early Utah grazing district.

beyond the boundaries of a given grazing district to perform his duties, which were typically limited to deciding how to allocate forage among livestock operators.

The laws passed during the 1970s, sometimes referred to as the “decade of the environment,” had a profound influence on the direction of the BLM’s range management program. To the BLM’s credit, however, the transformation of range policy from the narrowly defined discipline of bygone days to a more comprehensive and interdisciplinary function originated from the Bureau’s own leaders, not from the environmental movement and the legislation it spawned.

The transformation began under the BLM’s first director, Marion Clawson (1948-1953). It continued under succeeding directors, who recognized that

the predominant use of livestock grazing was “hitched”—as naturalist John Muir would say—to the health of the soil, vegetation, riparian areas, fish and wildlife, public recreation, and other public land uses and values.

In 1974, a landmark court ruling in the *Natural Resources Defense Council v. Morton* case dramatically influenced the pace of change. The BLM developed, as it had with its forest program, a national programmatic EIS on its grazing program to comply with NEPA. The BLM did not examine impacts of grazing at the local level, planning to address them later, if and when appropriate. The Natural Resources Defense Council filed suit. The court sided with the plaintiffs, agreeing that, for locally specific decisions, NEPA required a “finely tuned and systematic balancing analysis” at the local level as well as programmatically.<sup>11</sup>

## The Transforming Effect of the Natural Resources Defense Council Consent Decree | By D. Dean Bibles

One of the major transformations in the BLM’s history occurred when the agency lost a court case concerning environmental impact statements (EISs) and livestock grazing (*Natural Resources Defense Council v. Morton*). The BLM had prepared a single programmatic EIS on grazing nationwide to comply with the National Environmental Policy Act. The agency was sued by the Natural Resources Defense Council in 1974, and the court subsequently ordered that 212 separate EISs be prepared at the field level; this was later reduced to 144 EISs in *Natural Resources Defense Council v. Andrus*.

Due to the court-ordered documentation of the resources necessary to complete adequate EISs, employees in many new specialties were hired into the BLM workforce. At that time, I was the district manager in Boise, Idaho, where we hired about 45 new employees in fields for which we had not hired employees in any real numbers in the past. We hired fishery and avian biologists, archaeologists, sociologists, information technology

specialists, geologists (other than those connected to leasing), and numerous others.

Many of these employees were hired into “When Actually Employed” positions (temporary or intermittent appointments) but were converted to permanent positions as soon as possible. As these individuals gained experience, they moved into higher level positions and changed the demographics of the BLM forever. A few years later, when I was the state director for Oregon/Washington, we had 198 different specialties on our staff!

There was little way to anticipate the massive positive change that came about because of this court case and its settlement—it occurred through a breathtakingly rapid process. But once the consent decree was implemented, people were in place to help the BLM fully manage public lands under the Federal Land Policy and Management Act of 1976.

*Dean Bibles* retired from the BLM after serving as the state director in Oregon/Washington and Arizona, the assistant director for land resources in Washington, DC, and the district manager in Montana, northern California/Nevada, and Idaho. He received Presidential Distinguished Executive Awards from Presidents Reagan and Clinton and the Presidential Meritorious Service Award from President George H.W. Bush. Dean was also active in international conservation efforts.



BLM fishery biologist monitoring rainbow trout habitat in Alaska.



BLM avian biologist working near the Snake River in Idaho.

Noting the degraded condition of many of the BLM’s rangelands, the court also sought to reconcile the Taylor Grazing Act (with its emphasis on livestock use) and NEPA (with its emphasis on environmental protection). The court stated that “while Congress has determined that public lands should be put to the best use possible, it has also demonstrated a strong interest in protecting the environment.”<sup>12</sup>

As the BLM worked toward improving the health and productivity of rangelands while dedicating the resources necessary to comply with the EIS requirements of NEPA, Congress recognized the magnitude of the challenge facing the program. In 1978, Congress passed the Public Rangelands Improvement Act, based on the findings that the rangelands were still producing below their potential and that they would remain in unsatisfactory condition, or deteriorate even further, absent additional resources. Congress warned that the unsatisfactory condition of the public rangelands presented a high risk of soil loss, siltation, desertification, loss of forage for livestock and other grazing animals, degradation of water quality, flood danger, and threats to local economies.<sup>13</sup>

To address these concerns, the Public Rangelands Improvement Act authorized “an intensive public rangelands maintenance, management, and improvement program.” It also authorized a 20-year investment in the program totaling \$365 million. The funding, however, was subject to annual appropriations.

The following year, the BLM published “Managing the Public Rangelands,” which outlined its plan for restoring the health and productivity of the rangelands. The central policy of the plan was

“to manage efficiently the basic resources of the public rangelands to improve and maintain their productive capability to serve the full range of natural, social, economic, and environmental needs.” Under the policy, the inventory of rangelands and land use planning, which focused mainly on livestock grazing capacities in the past, must now consider the broader spectrum of public land values, including soil and water quality, vegetation, wildlife habitat, wild horses and burros, and recreation and scenic values.

By 1985, the BLM was reporting significant progress in range management. From 1975 to 1984, the proportion of rangelands in excellent or good condition had more than doubled, increasing from 17 percent to 36 percent. Rangelands in poor or bad condition declined from 33 percent to 18 percent. The BLM attributed the progress to a continuing long-term decline in livestock numbers, rangeland improvements, better livestock management practices, and cooperative management efforts by the BLM, livestock operators, and other interests.

By 1988, the BLM’s assessments indicated that the overall conditions of the rangelands were continuing to improve, and the consensus among range professionals was that the rangelands were in better condition than at any time in the past century. Stocking rates on 80 percent of the BLM’s grazing allotments were at or below capacity. The BLM scheduled adjustments on another 5 percent of the allotments and gathered information to make decisions on the remaining allotments. Even so, the BLM’s range program (and that of the U.S. Forest Service) came under criticism in a 1988 report by the General Accounting Office (later renamed the Government Accountability Office), which focused on those allotments that were overstocked or otherwise showing declining range conditions.<sup>14</sup>

## Riparian Resource Management Finds Common Ground

Riparian areas, those areas along the banks of rivers or other bodies of water, are important in every type of landscape, but in the arid West, they are critical to properly functioning and sustainable ecosystems, terrestrial and aquatic wildlife habitat, migratory bird flyways, erosion reduction, water quantity and quality, and public recreation.

The BLM’s early riparian restoration efforts in the mid-1970s, which were mainly the responsibility of wildlife and fisheries biologists, were concentrated simply on the exclusion of livestock for habitat improvement. These efforts often met strong resistance from livestock permittees, who viewed the Bureau’s riparian program as a “one-size-fits-all” approach focused exclusively on fish and wildlife and ignoring the interests of the ranching community.

In 1976, the same year that FLPMA passed, Wayne Elmore, a young wildlife and fisheries biologist working for the BLM in Oregon, set out to bring livestock interests and conservationists together on common ground. The common ground he chose was a place called Bear Creek in central Oregon. Domestic livestock had grazed the area since the late 1800s, and the licensed use in 1976 was 75 animal unit months from April until September (an animal unit month or AUM is the amount of forage needed to feed one animal unit, such as a cow and her calf, for a month). At that time, the riparian area totaled 3.8 acres per mile of stream and produced approximately 200 pounds of forage per acre. Streambanks were actively eroding and degrading stream quality with high volumes of sediment.

## Grazing Fees: The Next Generation | *By Judy Nelson*

The grazing fee issue has long been intertwined with the history of the BLM and has even influenced major Department of the Interior decisions over the last century, including the decision to merge the GLO and the Grazing Service into the BLM in 1946. Although grazing fees contribute little in terms of revenue, they have drawn the attention of both a President and John Wayne!

Worry over increasing grazing fees delayed the passage of the Federal Land Policy and Management Act in 1976 until a compromise was reached to do another grazing fee study. The study was legislated in 1978 via the Public Rangelands Improvement Act (PRIA). PRIA required a 7-year trial of a new fee formula and a recommendation of a permanent fee schedule to begin in 1986. I volunteered to head the PRIA-mandated study shortly after I arrived in Washington, DC, in 1980 and became the BLM’s principal representative from 1981 until 1985.

Although President Reagan had campaigned on being a “sagebrush rebel,” his administration fully supported the grazing fee study. In fact, raising the grazing fee was one of the top ten priorities of the Office of Management and Budget’s director, David Stockman. Secretary of the Interior James Watt often stated that he never met a subsidy he liked.

I sought advice from others who had worked on past studies. Marion Clawson, one of the first people I visited with, was an economist before he was BLM’s director, and in the 1980s, he was still an active economist at Resources for the Future. Clawson cautioned that grazing fees were one of the most politically contentious issues he dealt with as the BLM director. He did his first grazing fee study in 1944 and told me that my study would not be the last. Hal Ramsbacher, BLM’s lead on a 1966 grazing fee study, recommended that we consider an appraisal rather than the questionnaire used in 1966.

The PRIA study was a joint BLM-Forest Service effort. Ed Frandsen of the Forest Service was my counterpart, and we produced a series of independent studies, including an appraisal of the public rangelands, evaluation of the PRIA and other grazing fee formulas, evaluation of state grazing fees, and analysis of the economic impact of grazing fees. These were published before the grazing fee report was due to Congress.

The centerpiece of our study was an appraisal conducted by 22 BLM and Forest Service field appraisers who interviewed an estimated 100,000 people during a 17-month period and obtained detailed

information on 80-90 percent of the grazing lease transactions within the study area. The appraisal came up with values ranging from \$4 to more than \$8, with a Westwide value of about \$6.50.

Both Watt and Stockman left the administration before the end of the study (in 1983 and 1985, respectively), and political coverage left with them. During that time, the first major crack in the study occurred—BLM Director Robert Burford decided he wanted it to be accessible to the public and asked me to reduce the document from 450 to 50 pages. The Assistant Secretary’s Office had edits. The Forest Service was unwilling to agree with Interior, and the agencies proposed to publish separate studies. The White House directed the agencies to work together on one study. A painful page-by-page reconciliation with the Forest Service ensued.

I left Washington in 1985, between the draft and final study. Before I left, however, I participated in a series of public meetings in the West. The politics had changed. Those who opposed raising the fee attacked the study, many citing the appraisal as an inappropriate methodology because it had not been done before and it was done in-house.

More than 7,000 public comments were received, mostly from permittees. They favored the PRIA formula, criticized the appraisal methodology, and said that any price increase would be disastrous. (John Wayne also commented in favor of keeping fees low.)

Interior Secretary William Clark (who had replaced Watt) encouraged President Reagan to sign the Executive order on grazing fees in 1986, which extended the use of the formula established in PRIA to calculate the annual grazing fee. Our final 1986 study, delivered after the Executive order was signed, did not recommend a fee.

Congress, however, was not through with the fee issue. The House held a series of hearings and twice passed bills to increase grazing fees, but they were not supported in the Senate. The 1992 Interior appropriations act required an update of the 1986 study, providing 6 months to complete it. The Senate requested a study on an “incentive-based” grazing fee. Interior Secretary Bruce Babbitt also recommended an incentive-based system. A report was completed, but grazing fee reform was ultimately dropped.

The PRIA fee, as modified by the Executive order, has lasted for more than 25 years. It does not allow the fee to fall below \$1.35, and it has been at or close to that level ever since.



President Ronald Reagan.



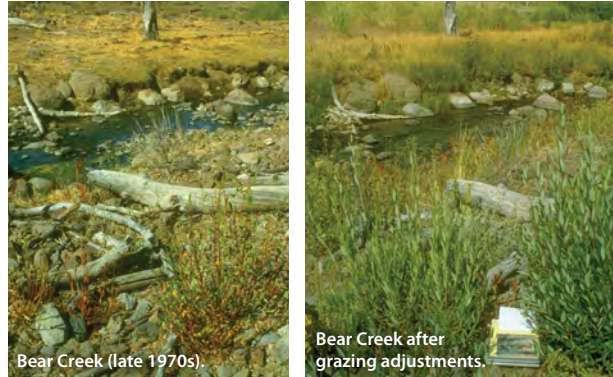
Herd of cows on public lands.



John Wayne commented on grazing fees.

*Judy Nelson* retired from the BLM in 2004 as the chief of biological sciences in the Oregon State Office. She started her BLM career as a rangeland economist in the Washington Office and later became the assistant district manager in Vale and the district manager in Eugene and Lakeview, Oregon.

From 1976 to 1978, the BLM partially rested the area from grazing in an attempt to restore the productivity of the riparian area. In the following 2 years, livestock grazed the area for 1 week in September, and from 1981 through 1984, no livestock grazed, resting the area entirely. In 1985, the BLM divided the pasture into three units and converted it from a season-long schedule to a three-pasture rotation from mid-February to mid-April.



Wayne Elmore later summarized the results of the project in an essay written for “Range” magazine:

“By 1989 the licensed use had increased to . . . five times the amount previously grazed from the area. The livestock permittee reportedly reduced his annual cost of hay by \$10,000 because of less winter feeding. In 1996 the riparian area had grown to 12 acres per mile of stream and was now producing approximately 2,000 pounds of forage per acre. The production had increased 30-fold. The filtering of sediments by the vegetation had raised the stream bed by two-and-a-half feet and we were now storing nearly four million gallons of water per mile. Stream length (sinuosity) had increased by one-third of a mile in the three mile stretch, also helping keep the water on

the land longer. Rainbow trout had finally returned.”<sup>15</sup>

### Fish and Wildlife Inventories Lead to Habitat Protection

The Taylor Grazing Act in 1934 recognized that wildlife habitat was among the most important values of the public lands and required the BLM to ensure adequate forage for wildlife. For the next 30 years, however, forage allocation was still arbitrary. Not until the mid-1960s did the BLM begin taking a professional, scientific approach to wildlife habitat management by creating a Wildlife Division and recruiting wildlife biologists to state and district offices.

In the early 1970s, the Endangered Species Act added new responsibilities for fish, wildlife, and plant habitat by directing federal agencies to manage public lands and resources for the continued existence of threatened and endangered species of plants and animals. In 1974, the Sikes Act directed federal agencies to coordinate with the states in developing comprehensive management plans for conserving fish and wildlife species and habitat.

FLPMA further enhanced recognition of fish and wildlife habitat as one of the principal values



of the public lands and increased the BLM’s authority and responsibility to manage, protect, and enhance wildlife and fishery resources. The Bureau increased its efforts to inventory and plan for habitat management. Wildlife specialists worked closely with other program staffs to incorporate habitat protection and improvement within plans developed for livestock grazing, mineral development, timber management, and other program areas.

By 1979, the BLM’s public lands inventories documented the presence of some 60 plant and animal species on the federal endangered species list. The BLM fish and wildlife program staff worked more closely than ever with other federal agencies. Section 7 of the Endangered Species Act required that federal agencies consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on any proposed actions that might affect listed species or their habitat. In 1979, the Bureau completed 1,200 such consultations.

By 1980, the number of work years devoted to wildlife management had increased from 227 to more than 380 (1 work year is approximately 2,080 hours). Funding for the program had increased more than 300 percent.



### Key Initiatives Emerge

The BLM’s fish and wildlife program, as well as its commitment to protecting and enhancing habitat, grew in the years immediately following passage of FLPMA. The BLM focused on several key initiatives in wildlife and fisheries:

- Restoring populations of bighorn sheep in Arizona, California, Colorado, Nevada, New Mexico, and Utah and undertaking habitat improvement projects in Idaho and Wyoming.
- Developing a draft management plan and EIS for 25 million acres of the California desert to ensure adequate management and protection of desert wildlife, including the desert tortoise.
- Developing and implementing statewide and site-specific measures to restore tule elk populations and prevent their listing under the Endangered Species Act in partnership with the California Department of Fish and Game, Rocky Mountain Elk Foundation, and others.
- Identifying habitat locations of the California condor and possible measures to help reestablish the species in partnership with the State of California, U.S. Forest Service, U.S. Fish and Wildlife Service, and Audubon Society.
- Reestablishing populations of endangered species such as the peregrine falcon, the Colorado squawfish of the lower Colorado River, and the woundfin minnow of the Gila River in Arizona.

### The “Fish and Wildlife 2000” Strategy Guides Future Management

In 1987, the BLM launched a new strategy, called “Fish and Wildlife 2000: A Plan for the Future,” which provided a comprehensive blueprint for managing fish and wildlife resources on public lands into the 21st century. Under the plan, the BLM began developing state-level management strategies tailored to the resources and conditions within each BLM state. An interdisciplinary team of fish and wildlife biologists, managers, and human resources experts developed recommendations for improved skills and career development among the Bureau’s biologists.

The BLM also intensified its efforts to nurture partnerships and encourage investments from



A resident rainbow trout in Oregon.

nongovernment organizations such as sportsmen’s groups. In 1988, the Bureau signed memoranda of understanding to facilitate cooperative work with the Rocky Mountain Elk Foundation, Quail Unlimited, National Wild Turkey Federation, Foundation for North American Wild Sheep (now Wild Sheep Foundation), and Trout Unlimited.

These partnerships enabled the BLM to increase funding to support on-the-ground work in habitat management, recreation, and conservation through the Challenge Cost Share program, which authorized the BLM to match nongovernment contributions. In 1985, the BLM’s Challenge Cost Share funding of \$294,000 was leveraging \$305,000 in partnership contributions.

## Evolution of a Biologist | By Tim Carrigan

A photograph of a young boy staring eye-to-eye with a frog adorns the cover of Richard Louv's 2005 bestseller "Last Child in the Woods." That boy could very well have been me 50 years ago in Minnesota where frogs were the most abundant and the easiest to catch wildlife. My love of nature began there and continued as I moved to Contra Costa County in the San Francisco Bay area, an area unparalleled in America for richness and diversity of wildlife, especially herptiles, a group of animals made up of reptiles and amphibians. It was these early encounters with animals and the outdoors that inspired me to study wildlife management in college and go on to become a wildlife biologist for the BLM.

I was hired by the BLM after the Endangered Species Act was passed in 1973. At that time, BLM biologists were given little direction, as regulations for the new law were still being written. The wildlife program was not as well established as other BLM programs such as range or forestry. Some biologists were given the task of managing small tracts of land close to urban or agricultural areas to provide hunting opportunities, while large expanses of public lands in their districts were often ignored. BLM biologists eventually found a role managing the rangelands for big game. Our approach was that if we managed the land well for megafauna, all wildlife species would thrive. And that is how we carried on for a decade or more, sometimes getting involved in raptor management or monitoring of sage-grouse leks, but always concentrating on big game ranges.

A new vision for BLM wildlife management was cast with the release of the "Fish and Wildlife 2000" plan, and seemingly overnight, we were managing for species beyond mule deer, elk, pronghorn, and bighorn sheep. We looked in far more detail at the needs of sage-grouse, riparian-dependent species, prey animals, and special status species. I still remember my surprise when I was told I would be managing habitat for a hot springsnail, which is not much larger than the period at the end of this sentence. Then came the day when the Great Basin population of the Columbia spotted frog became a candidate for listing under the Endangered Species Act.

Our first task was to determine if the Columbia spotted frog still occurred in our area by surveying likely streams, springs, and ponds. On

the first day of the search, we could hear frogs calling from an open area not far from a stream. They were loud and numerous but would grow silent whenever we approached; we never saw a frog even jump. Only by the low, angled light of late afternoon, with a high-powered spotting scope, did we discover that the frogs we heard were Pacific tree frogs using rodent burrow openings as a megaphone to project their calls.

On day two, we learned to ignore the calls of abundant tree frogs and instead concentrate on surveying low-gradient, slow-moving streams. For hours, none of us located a single spotted frog; my frustration grew and I began to think that the area no longer harbored the species. I thought back to the frog-catching days of my youth. I could visualize the exact locations of my quarry—the microhabitat where the frogs would hide. Soon, I noticed a pool off the stream with overhanging vegetation and algae in the water, just like those I had seen in my childhood. I simply stared at the spot for more than 5 minutes until I finally saw two bulging eyes blink at me. We had located a Columbia spotted frog in an area with no recorded sightings in more than 50 years.

Over several years, the BLM and its partners, the Idaho Department of Fish and Game (IDFG), U.S. Fish and Wildlife Service, and Boise State University, located several spotted frog populations and defined the frog's habitat requirements in our area. A limiting factor for the frogs was the lack of beaver ponds, which we decided to address at one site after frog numbers plummeted. Boise State supplied the idea and workforce; the BLM provided the materials, biologists, and environmental paperwork; and the IDFG supplied the live-trapped beavers. We repaired a dam with lumber and irrigation cloth, reintroduced the beavers, and let nature do the rest. Within 2 years, a large complex of beaver dams was established and there were too many frogs to monitor in the required 2-day period. This simple project, which took just a few days to complete, was the most rewarding activity of my 30 years with the BLM.

As my career heads towards dusk, I am hopeful that initiatives such as Take It Outside! will inspire the next generation to pursue careers in natural resources. It would be a shame if one of my cohorts or I was the last child in the woods.

*Tim Carrigan* was a wildlife biologist on the Renewable Energy Team in the BLM Idaho State Office. He was also the assistant field manager of the Bruneau Field Office and a wildlife biologist in the Boise District. Prior to serving in the Army from 1985 to 1990, Tim was a range conservationist in Salmon, Idaho.

## Cultural and Heritage Resources Face Growing Threats

The BLM's efforts to preserve and protect cultural and heritage resources did not begin with passage of FLPMA, but the act did give these resources important standing as a priceless part of the public lands legacy entrusted to the Bureau.

The BLM public lands represent the nation's greatest repository of cultural resources, including archaeological and historic properties—the remnants of 20,000 years of human presence on the continent. The cultural treasures of the public

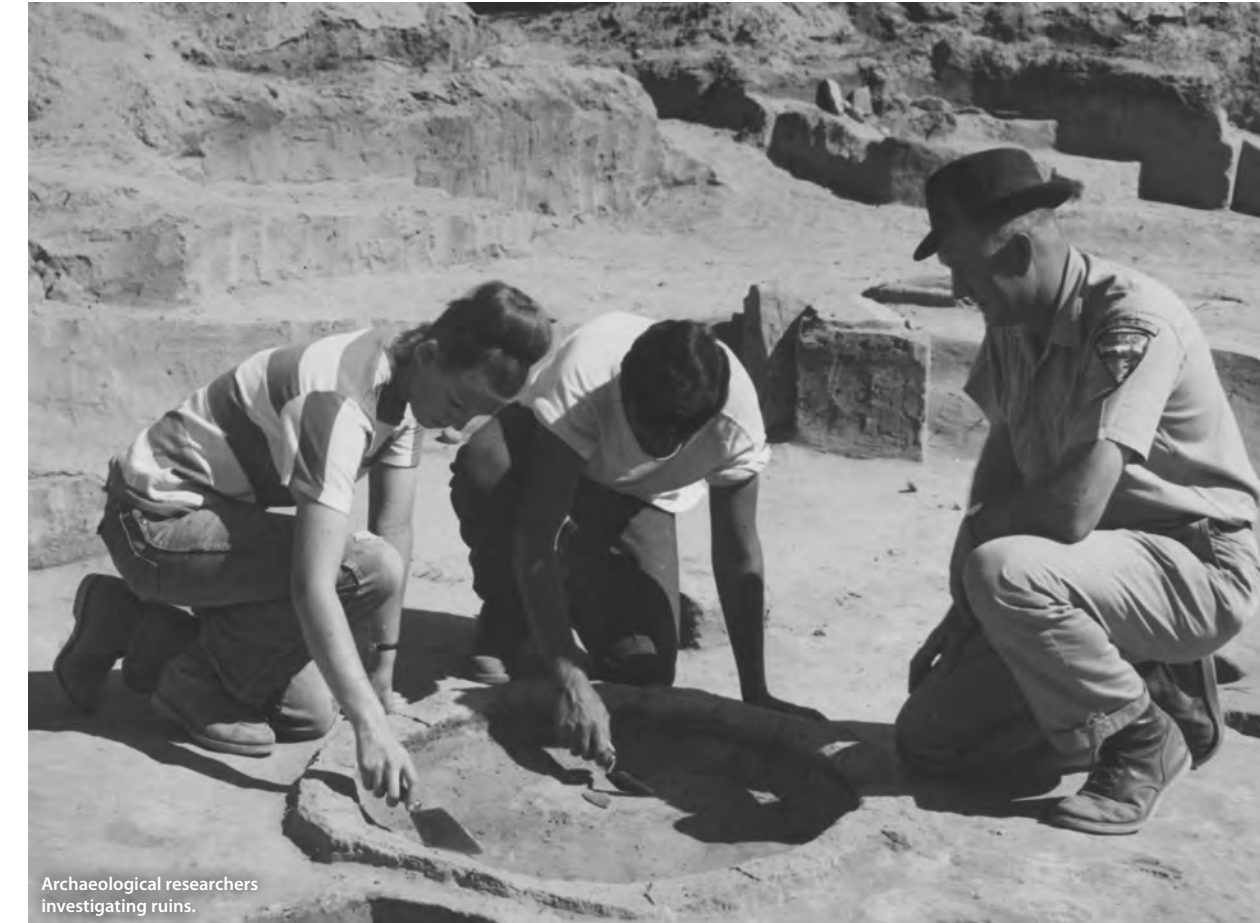
lands include prehistoric ruins of the Southwest, aboriginal rock art, ancient stone tools, historic ghost towns, wagon roads, and long-abandoned military posts of the frontier era.

FLPMA, as well as the National Historic Preservation Act of 1966, required the BLM to conduct inventories of cultural resources and develop plans for their management. The BLM was confronting growing threats to these resource properties. Valuable and irreplaceable properties were being lost to increasing incidents of theft, vandalism, and destruction.

As the loss of these treasures gained national attention, Congress responded by passing the Archaeological Resources Protection Act in 1979. Along with FLPMA and the National Historic Preservation Act, this act gave the BLM authority to enforce protection of cultural resources. Congress amended the Archaeological Resources Protection Act in 1988 to require that federal land managers establish a public outreach program explaining the value and importance of archaeological resources.



Columbia spotted frog in the Owyhee Uplands in Idaho. Photo by Bruce Haa.



Archaeological researchers investigating ruins.



Pottery shards at a site in Arizona.

## Working Underground for the BLM | By James Goodbar

For the BLM, “underground resources” don’t always mean oil and gas or other minable minerals. The BLM manages thousands of caves and the resources in them.

A handful of individuals within the BLM and a host of volunteer groups, such as the National Speleological Society (NSS) and Cave Research Foundation (CRF), really love caves and want to help others understand the fragile nature of the world beneath their feet. It’s the act of going caving and seeing things that most people could never imagine. It’s making the first discovery of huge new underground rooms filled with wondrous, delicate formations that sparkle and twinkle as your light illuminates them, often for the very first time. It’s crawling through that small space you thought no one else had ever been through and finding a collection of unbroken Anasazi pots and ceremonial artifacts. It’s making that 180-foot rope drop in the darkness and finding the complete articulated skeleton of a long-extinct cave bear. It’s hiking for miles through the hot, dry desert to the cave and going in to find a crystal-clear underground lake undisturbed by the harsh conditions above.

These experiences are what make caves and caving on our public lands so special—and such a challenge to manage. The BLM has recognized the need to protect our karst ground-water resources, and has established new areas of critical environmental concern (ACECs) and national conservation areas (NCAs) to manage them. Fort Stanton Cave was the BLM’s first cave designated as an NCA. Its newly discovered Snowy River passage contains the world’s longest cave formation, the 30-foot-diameter snowy white calcite floor of an underground river that stretches for more than 5 miles. This “calcite river” is still being explored, with no end in sight.

The BLM began proactive cave and karst management in 1962 when members of the NSS contacted Don Sawyer, the outdoor recreation planner in Roswell, New Mexico. They informed him that some of BLM’s unique and fragile resources were being badly damaged and needed protection. Don worked with them to develop cave management plans, design and install cave gates, and develop a permit system. Then in 1977, the Roswell District hired the BLM’s first “cave specialists,” Buzz Hummel and Steve Fleming, whose jobs were to document known caves within the district and find new ones. Since that time, the BLM has become a recognized leader in cave resources management.

Throughout the 1980s, the BLM recognized caves in its resource management plans. The Bureau played a vital role in crafting the language of the Federal Cave Resources Protection Act of 1988 and later teamed up with the National Park Service and Fish and Wildlife Service to draft the Department of the Interior’s regulations to implement the law. In 1991, the BLM created its first national cave/karst program lead position, which I filled, working half time for the Washington Office and half time for the Carlsbad Field Office in New Mexico.

Over the years, the BLM’s program accomplishments have served as a template for other federal agencies. The BLM entered into national, regional, and local assistance agreements with the National Speleological Society and Cave Research Foundation and played a pivotal role in the successful development of the National Cave and Karst Management Symposia. Much of BLM’s work benefits other federal land management agencies. For example, the BLM organized training on cave and karst resources, pioneered a set of cave safety standards, and developed the first interagency agreement for cave and karst resources management, signed by five federal agencies. The BLM also has developed a comprehensive set of mitigation measures for oil and gas drilling in sensitive karst areas, established cave/karst program leads in every BLM state, and shared cave management expertise with foreign countries, including China, Spain, Hungary, Switzerland, Greece, Brazil, Mexico, Guatemala, and Haiti.

Many of the caves we have known about for decades are being revisited and studied under a new set of lenses. In cooperation with our speleological partners, we have made new scientific discoveries of resources found nowhere else on or under the earth. Newly discovered microbes are giving us fresh options for developing cures of certain types of cancer, and new bioremediation products help break down oil spills and other organic solid wastes. New methods for dating mineral deposits in caves (speleothems) are giving us important new information on climate change.

The BLM’s multiple use mission is now fully 3-D! Our history bears out the importance of our recognition of these fragile and unique underground resources. Our future is only as bright as the knowledge and responsible management we carry with us into the darkness.

## Designated Recreation Areas Increase

Public land recreation earned its place among the BLM’s emerging priorities when the Classification and Multiple Use Act of 1964 explicitly recognized its value. This recognition reflected the reality of a changing America in the latter half of the 20th century, as lifestyles became more leisurely and people sought more places and opportunities to pursue recreational activities.

The changing value of recreation in American life, and the need for the federal government to address the long-term implications of this transformation, had been a growing concern in Congress for many years, prompting the creation of the Outdoor Recreation Review Commission in 1958. The Commission released a report in 1962 that stated:

“Decade by decade, the expanding population has achieved more leisure time, more money to spend, and better travel facilities; and it has sought more and better opportunities to enjoy the outdoors. But the public has also demanded more of other things. In the years following World War II, this process greatly accelerated as an eager Nation, released from wartime restrictions, needed millions of new acres for subdivisions, industrial sites, highways, schools, and airports. The resources for outdoor recreation—shoreline, green acres, open space, and unpolluted waters—diminished in the face of demands for more of everything else.”<sup>16</sup>

After 1964, recreational visits to public lands increased significantly. By 1972, the Bureau hired an additional 30 outdoor recreation planners on the

ground, staffing virtually all district offices with these positions. By the mid-1970s, the BLM was maintaining more than 400 developed recreation sites on the public lands, with an annual budget averaging \$5 million for recreation management, \$3 million for site maintenance, and \$1 million for recreation construction.

With passage of FLPMA and the adoption of multiple use planning, the BLM began to methodically evaluate planning areas for their recreational value and, in many cases, to provide information for possible inclusion of areas within the national system of wild and scenic rivers or national historic trails. For America’s Bicentennial in 1976, the BLM built interpretive facilities along the Oregon, Pony Express, and Dominguez-Escalante Trails.

By 1980, the BLM was managing a rapidly growing portfolio of designated recreational areas. These included:

- 30 special recreation areas totaling 3.1 million acres
- The California Desert Conservation Area spanning 12 million acres
- 216 miles of designated national recreation trails
- 250 recreational sites and 250 primitive campgrounds
- The King Range National Conservation Area covering 41 thousand acres and 30 miles of the Pacific coast
- 445 recreational and whitewater rivers totaling 2,500 miles and 4 rivers—the Rogue, Missouri, American, and Rio Grande—designated as national wild and scenic rivers



Bear bones found in a cave.



Jim Goodbar.

*Jim Goodbar* began caving with his family in central Texas when he was 9 years old. Much of his 35-year career with the BLM has been spent developing the cave and karst management program. Jim has explored caves in 16 foreign countries and is still an active caver.



Picnic facilities at Vincent Creek Recreation Site in Oregon (1962).



A hunting camp on Fish Lake in Oregon (1960).



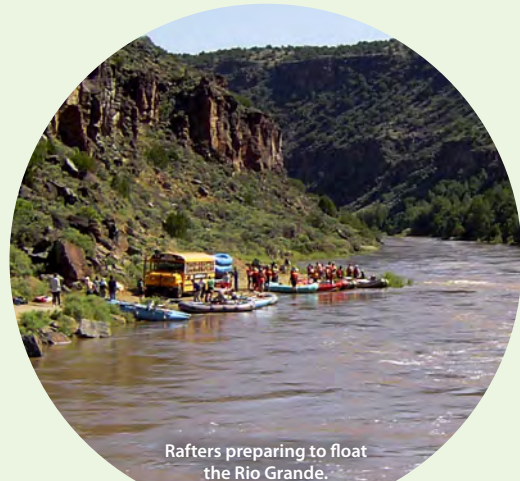
Pony Express National Historic Trail in Wyoming.



## Rio Grande Wild and Scenic River | By Theresa Herrera

Born to be wild! The Rio Grande is one of the first eight rivers Congress designated in 1968 as part of the National Wild and Scenic Rivers System. The BLM's Taos Field Office manages the Rio Grande from the New Mexico/Colorado border to Velarde, New Mexico.

The Rio Grande flows through one of the major late Cenozoic continental rifts, which shares most of its geophysical, geological, and geochemical characteristics with other rifts of the world, such as the East African Rift. What is a rift? A rift is a surface feature characterized by an elongated valley when the Earth's crust stretches and thins. The Rio Grande Rift began forming millions of years ago when the Earth's crust began to spread apart, triggering volcanic activity. Runoff from the newly elevated alpine regions was captured in the basins and the drainage combined to form the ancestral Rio Grande. As much as 15,000 feet of rift sediment has accumulated in basins of the Rio Grande Rift, forming important aquifers for some of the largest cities in New Mexico. Along with these precious supplies of water, the Rio Grande Rift provides fertile floodplain soils for growing corn, beans, and squash, helping to establish an important economic foundation for rural communities.



Rafters preparing to float the Rio Grande.



The Rio Grande near Ute Mountain in northern New Mexico.

The river passes through 800-foot chasms of the Rio Grande Gorge, a wild and remote area of northern New Mexico. Imagine rafting down the Rio Grande, with its towering colorful walls, and watching wildlife cross the river. The avid rafter might even catch a glimpse of a bald eagle floating through the sky, bighorn sheep, or even the recently introduced river otters. The canyon provides a wide variety of recreational opportunities, luring fishermen, hikers, artists, and whitewater boating enthusiasts. The High Bridge offers spectacular views of the Rio Grande.

The Rio Grande and its tributaries have attracted people for thousands of years. Spanish conquistadores discovered the Rio Grande's mouth in 1519, and during the next 100 years, they founded some of the earliest North American settlements along its banks. These explorers named the river El Rio Grande or "the Great River." However, it has been called many other names. The Pueblo people called it Posoge, or P'Osoge, meaning "big river." Shipwrecked British sailors crossed it in 1568 and called it "the River of May." Various Spaniards and Mexicans named it El Rio de Nuestra Senora ("the River of Our Lady") and El Rio Bravo ("the Fierce River").

The oldest measurement station in the United States, which has been active since 1890, is located on the main stem of the Rio Grande at the Embudo Station. Modern efforts to measure discharge from streams rely on a series of stream gauges or measurement stations installed and administered by the U.S. Geological Survey and the New Mexico Office of the State Engineer and Interstate Stream Commission.

Many people feel a special connection to the Rio Grande. Sam DesGeorges, field manager for the Taos Field Office, reminisces: "When is a place not a place? As we do the things we do on and along the Rio Grande, I am reminded that this place is not so much a spot on the map, but a part of who I am and who others are. In 1886, my great-great-grandfather, Etienne, owned and operated a freight company that moved goods and people from Taos to Embudo. He arrived in Taos from France in 1863 and never left. Often as I crest the Taos Overlook, and I see the split formed by the Rio Grande and in the distance I see the Taos Mountains, I wonder if he felt as I do—ahh, I'm home! I am sure this feeling is shared by others; the reason I know is because people felt it was worthy of enduring protection in the form of its wild and scenic designation."

*Theresa Herrera* was a public affairs specialist with the BLM's New Mexico Office of External Affairs. She held various positions within the state office and had more than 40 years of public service.

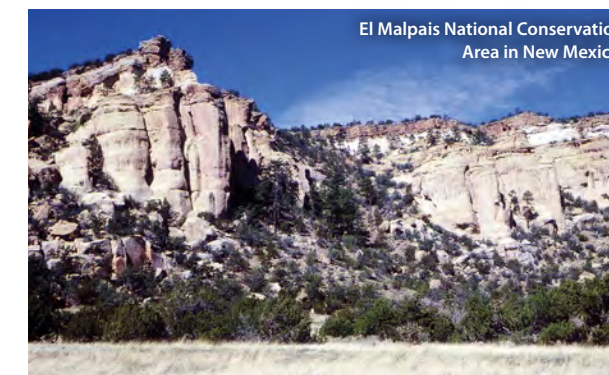
In the early 1980s, the BLM designated long-term visitor areas along the lower Colorado River in Arizona and California and completed management plans for six wild and scenic river segments in Alaska. The BLM added the Garnet Winter Trail in Montana and the Marble Creek Trail in Idaho to the National Trails System.

## Commission Reviews Outdoor Recreation

By 1985, a variety of recreational interest groups convinced President Ronald Reagan to launch a new review of outdoor recreation. The 15-member President's Commission on Americans Outdoors conducted the review from 1985 to 1987. The Commission's recommendations led to the establishment of the national scenic byways program, major volunteer and outdoor ethics efforts, and new funding derived from user fees and federal motor fuel excise taxes.

In the latter half of the decade, the BLM recreation program had several significant achievements, including the opening of a new recreation site in the San Pedro area of southern Arizona, completion of a land exchange for the Red Rock recreation lands near Las Vegas, and congressional designation of El Malpais National Conservation Area in New Mexico.

In 1989, the BLM prepared a report, "Recreation 2000," and an implementation plan to "improve service to the recreation-seeking public by placing



more emphasis on our recreation program." Priorities included improved visitor information and interpretation, resource protection and monitoring, and land ownership adjustments to increase access to key public lands. The strategy also called for increased partnerships and use of volunteers to accomplish the BLM's recreation goals. The following year, BLM Director Cy Jamison declared, "The BLM is the new frontier of recreation."<sup>17</sup>

## Motorized Recreation Raises Concerns

The 1960s and early 1970s saw phenomenal growth in the popularity of motorized recreation on the public lands. Along with this growth came increasing concern over the effects that this form of recreation could have on other forms of recreation, as well as on ecological, cultural, and historic values.

In 1972, President Nixon issued Executive Order 11644 calling for policies and procedures that would "ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands." The following year, to improve control of off-road vehicle use under existing Department of the Interior regulations for recreation management, the BLM designated 12 million acres of California public lands as open, limited, or closed to off-road vehicles.

In 1974, the National Wildlife Federation challenged the Department of the Interior's regulations, leading to a court order requiring the Department to set dates for classification of all public lands for off-road vehicle use (a requirement



Off-road vehicle race in the southern California desert.

of Nixon's Executive order) and to revise its EIS on off-road vehicle use across all public lands. In 1977, President Carter issued Executive Order 11989, which clarified the BLM's authority by directing the immediate closure of areas when off-road vehicle use would cause "considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources." The Department completed the new EIS in 1978, and the following year, issued new regulations for off-road vehicle use.

By 1988, the BLM had designated 75.5 million acres of public lands as open to off-road vehicle use, 50 million acres as available for limited use, and 2.5 million acres as closed to off-road vehicle use. The Bureau had 152 million acres of public lands yet to inventory and classify for appropriate travel management. By the early 1990s, the BLM was managing 19,000 miles of trails formally dedicated to off-road use and an additional 53,000 miles open to off-road use.

The BLM's management of off-road recreation emphasized user safety and land ethics. The BLM became a charter member of the "Tread Lightly" campaign and established partnerships with the off-road vehicle industry to reinforce these messages.

The BLM's recreation opportunities had expanded to include thousands of unique recreation areas, including 32 wild and scenic rivers and 22 national trails; more than 670 developed and semideveloped recreation sites; 5,500 family camping sites; and 4.2 million acres of lakes and reservoirs open to fishing, boating, and other public recreation activities.

## The Wilderness Inventory Process Begins

The Wilderness Act of 1964 established the National Wilderness Preservation System, which included certain lands managed by the U.S. Forest Service, National Park Service, and U.S. Fish and Wildlife Service. The act defined wilderness areas as federal lands designated by Congress “where the earth and its community of life are untrammeled by man” and “where man himself is a visitor and does not remain.” Absent from the act was any mention of the BLM, reflecting the belief of some people that the vast public domain managed by the BLM did not contain “wilderness” at all.<sup>18</sup> Others believed that protection of public lands as wilderness was long overdue. The passage of FLPMA, clarified the BLM’s wilderness responsibilities. Section 603 (aptly titled “Wilderness Review”) provided for a two-step process—first, to inventory, and second, to manage the public lands (except Alaska) for potential designation as wilderness.

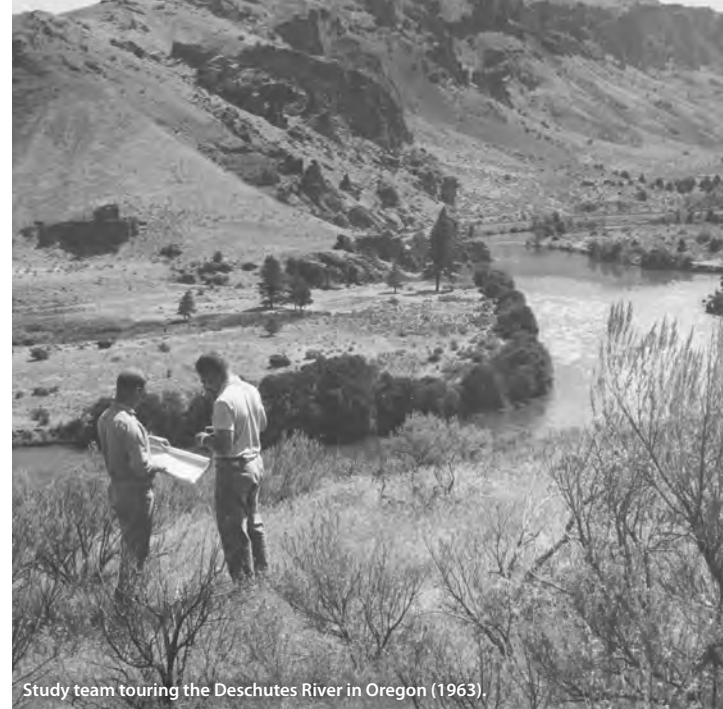


Little Jacks Creek Wilderness in Idaho.

The BLM soon developed policies for implementation through a handbook, popularly known as the “blue book,” instruction memorandums, and other directives. Part of the early controversy centered on how a “wilderness” review affected other public land uses. Some interpreted section 603 to mean that the BLM should hold all uses of the public lands in abeyance pending this review. The objective was to get 175 million acres inventoried for possible wilderness characteristics as soon as possible.<sup>19</sup> In 1977, the BLM hired a new cadre of “wilderness specialists” to do the job, and they often found themselves in hostile public settings.

The BLM’s Division of Recreation oversaw the new wilderness program and coordinated with the newly hired wilderness program leaders in its state offices to develop a systematic way to inventory public lands. The U.S. Forest Service’s policies and recent research served as a guide, but its procedures did not always fit the BLM’s public lands. For example, the U.S. Forest Service planned roads primarily for accessing timber or for recreation. For the BLM, roads on public lands generally resulted from public use (often to access mining claims), while the land pattern resulted from land disposal through homesteading and other means.

FLPMA required the completion of a California Desert Conservation Area Plan by September 30, 1980, and plan preparers demanded the development of national policies on wilderness inventory.<sup>20</sup> The “red book” provided preliminary guidance on a wilderness inventory process based on strict definitions within the Wilderness Act as adapted to the unique nature of BLM-managed public lands.



Study team touring the Deschutes River in Oregon (1963).

In writing new wilderness policy, the BLM deferred to political and legal definitions rather than focusing on describing ecological conditions. The wilderness policy used the political definition of a “road” from congressional language associated with FLPMA. The policy also borrowed language from the Wilderness Act, defining wilderness as that which:

“(1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical values.”

From this developing wilderness policy, a three-step wilderness identification process evolved:

- First, the BLM would conduct an initial inventory to identify obvious roadless areas (of 5,000 acres or more), and by default, release lands that did not qualify. A more intensive inventory would then identify areas with wilderness characteristics worthy of designation as wilderness study areas. The BLM would manage wilderness study areas for nonimpairment until Congress decided whether to add them to the National Wilderness Preservation System.
- In the second phase of the wilderness identification process, the BLM would study the values associated with wilderness study areas, including mineral resources and off-road recreation, and further assess their suitability for wilderness designation.
- The final phase of the process required the BLM to complete a report with recommendations on which wilderness study areas Congress should designate as national wilderness by 1991 and to submit it through the Secretary to the President.

In 1978, the BLM began the complex process of wilderness inventory, which included public meetings, staff reports, reviews, and decisions. By the end of the inventory phase of the wilderness program 3 years later, the BLM had identified approximately 23 million of the 175 million acres as wilderness study areas, placing them under a restrictive interim management plan until Congress could act. In 1983, Congress designated the BLM’s first wilderness area, Bear Trap Canyon in southwestern Montana (which later became part of Lee Metcalf Wilderness).



Bear Trap Canyon, Lee Metcalf Wilderness in Montana.



Steese National Conservation Area in Alaska.

### The Battle to Conserve the “Crown Jewels” | By Cecil D. Andrus

On the 10th anniversary of the Alaska National Interest Lands Conservation Act (Alaska Lands Act), the late historian T.H. Watkins wrote that the landmark legislation “was at once one of the noblest and most comprehensive legislative acts in American history, because, with the scratch of the presidential pen that signed it, the act set aside more wild country than had been preserved anywhere in the world up to that time—104.3 million acres. By itself, the Alaska Lands Act stood as a ringing validation of the best of what the conservation movement had stood for in the century since Henry David Thoreau had walked so thoughtfully in the woods of Walden Pond.”

The Alaska Lands Act, signed by President Jimmy Carter in 1980, more than doubled the national park, refuge, and wilderness acreage in Alaska and was a triumph for the broad public interest. It resolved decades of debate about what portion of America’s “crown jewels” should be forever maintained as places of unspoiled beauty and solitude, where fish, wildlife, and scenic values remain paramount.

But the victory in Alaska did not come easily or quickly, and many in Alaska saw it as nothing short of the heavy hand of the federal government dictating what would happen to Alaska’s land. Nearly 30 years later, T.H. Watkins’ view has become the prevailing view. A broad national consensus has emerged that the Alaska legislation does indeed represent the pinnacle of the national effort to preserve the very best of “the last frontier,” where we had the opportunity to do it right the first time.

Why did it take so long and require so much effort?

When Alaska was admitted to the Union in 1959, the Statehood Act acknowledged that claims of native Alaskans had never been settled. In 1971, Congress passed the Alaska Native Claims Settlement Act which, among other things, established a deadline for sorting out these important claims. A key section of the legislation—section 17(d)(2)—decreed that at least 80 million acres of the “national interest” lands be set aside for protection based on their natural features. The Secretary of the Interior was authorized to administer the funding and the process to settle claims and determine which lands in Alaska were worthy of protection as national parks, monuments, preserves, and wildlife refuges. But the political clock was ticking. The land was protected from development for only 7 years.

By the time President Carter took office in 1977 and I moved from Idaho to Washington as his Interior Secretary, much of the time to sort out the Alaska controversy had slipped away. A variety of political and economic considerations were conspiring to delay a resolution and pave the way for widespread development of the unspoiled land in the last frontier.

The issue had to be forced. The leverage necessary to gain and keep Alaska and Congressional attention was the use of the then 70-year-old Antiquities Act and Secretarial withdrawal provided in the BLM Organic Act (Federal Land Policy and Management Act) of 1976. The maps were rolled out in the Oval Office and President Carter was shown that with a stroke of the pen he could set aside 56 million acres to protect special places of national importance, from the Brooks Range in the north of Alaska to the Misty Fjords in the south, while the Secretary withdrew 50 million acres.

“Can I do that?” the President asked. When told that such Presidential action was the only apparent way to generate a crisis and cause the Congress and the special interests to move in the direction of a comprehensive Alaska agreement, Carter said simply, “Let’s do it.”

We were accused of dictatorial action and, especially by then-Senator Ted Stevens, of misuse of the Antiquities Act. Before long, the leverage applied by the President’s actions and the threat that Congress could be left out of the policymaking prompted action.

Senators Henry Jackson and Paul Tsongas and Representatives Mo Udall and John Seiberling did much of the heavy lifting on Capitol Hill to knit together a bill that finally passed. Ironically, the nation’s greatest legislative conservation accomplishment was signed into law by a defeated President who, contrary to the popular portrayal of his Presidency, willingly embraced an aggressive, gutsy strategy to protect the nation’s crown jewels.

You will still find some in Alaska and across the West who lament the ability of the national government, acting as trustee for the public’s land, to take action as far reaching as the Alaska legislation, but those voices will continue to diminish with time and the public interest will remain the focus of Western public policy.

President Carter has never gotten the credit he deserves for this remarkable piece of legislation, but perhaps there is adequate satisfaction in the knowledge that one can claim a legacy of protecting rivers, ancient forests, volcanic craters, and critical habitat for grizzly bears and caribou. Future generations will not remember much of the complex and controversial path and the many obstacles that stood in the way of legislation conserving much of the best of America’s last frontier. Likewise, few visitors who stand in awe at the rim of the Grand Canyon remember how that great wonder came to be preserved. We tend to forget the battles, but we all enjoy the benefits of the victories.

### Energy and Minerals Management Focuses on Independence

Beginning with the gas shortages of the 1970s, energy and mineral resources policy focused on one clear objective: increasing the production of the nation’s energy sources.

No single event exposed the United States’ reliance on foreign energy resources more than the Arab embargo of 1973 and the resulting worldwide oil shortage. The U.S. economy tipped into recession, and inflation and oil prices soared. The price of Saudi Arabian light crude rocketed from \$1.90 a barrel in 1972 to \$13.34 a barrel in 1980. Photos of lines of cars stretching blocks from filling stations filled the nation’s newspapers.

The nation quickly adopted a number of short-term policy measures. Through the Energy Policy and Conservation Act of 1975, it set fuel economy standards to cut petroleum consumption and established the Strategic Petroleum Reserve to mitigate the economic impacts of any future energy crises.

Identifying further measures to ensure long-term energy security proved more challenging, and oil imports gradually increased to 50 percent over the next 25 years.



Oil pump in North Dakota.

### Project Independence Spurs Development

President Nixon launched Project Independence in November 1973 with the goal of making the United States self-sufficient in energy by 1980. Although the project did not meet this goal within that timeframe, the program helped spur an upswing in energy and mineral development on federal lands.

The nation began looking to the substantial oil and natural gas deposits in its oceans. In 1976, the BLM took on the responsibility of leasing the Outer Continental Shelf lands off Alaska and the mid-Atlantic states. By 1980, the BLM administered 113 leases for 570,000 acres off the coast of Alaska and 232 leases covering 1.3 million acres off the Atlantic coast. A year later, most drilling off the east and west coasts was banned through a congressional moratorium that stayed in place for more than two decades.

NEPA had a major effect on the regulation of energy projects as the BLM began preparing individual EISs for large projects such as the development of an oil field. The agency also began to produce environmental assessments for individual proposals to drill within a field.

The Trans-Alaska Pipeline System was one of the first major energy projects reviewed under the aegis of NEPA. With the promise of delivering vast deposits of oil from the North Slope, construction of the 800-mile pipeline extending from the slope to Prince William Sound was a top priority in Nixon’s energy platform.

However, shortly after preliminary designs for the Trans-Alaska Pipeline System were released in 1969, environmental groups took issue with the plan and successfully sued to block the project



Offshore oil rig.



Trans-Alaska Pipeline.



Coal production in Wyoming.

under NEPA, which had gone into effect in January 1970. The Alaska Pipeline Office (consisting of the BLM and other agencies) produced a nine-volume EIS in April 1972 detailing the potential impacts of a major spill, effects on wildlife migration routes, and other issues. The courts also found that Congress had to authorize a pipeline of that magnitude. This legislation passed in the wake of the oil embargo. When the pipeline finally came online in 1977 after a 5-year delay, its cost had ballooned from an estimated \$2 billion to \$15 billion.<sup>21</sup>

The oil embargo, along with exporter countries' actions to nationalize their oil fields in the mid-1970s, also prompted a massive shift from petroleum to coal for electricity generation. The United States had billions of tons of coal reserves. To help ensure that the nation's taxpayers received a fair return for the development of the vast coal deposits found on public lands, particularly those in Wyoming's Powder River Basin, Congress passed the Federal Coal Leasing Amendments Act in 1976, which established a competitive system for coal leasing.

Concurrently, the BLM addressed reforms to hardrock mining on public lands, which was unregulated prior to passage of FLPMA. In FLPMA, Congress directed the Department of the Interior to "prevent unnecessary or undue degradation," which gave the BLM the authority to review exploration and mining plans for hardrock minerals. In November 1980, the BLM promulgated regulations governing hardrock mining on public lands.<sup>22</sup> The section 3809 rules gave the Department of the Interior authority to permit mines after considering any potential environmental impacts from the operations.

### The Linowes Commissions Investigate

In 1981, the White House Council on Integrity and Efficiency established a commission headed by economist David Linowes and charged it with investigating "serious allegations of massive irregularities in royalty payments due to the Federal government, Indian tribes, and States; and the allegations of theft of oil from Federal and Indian Lands." In January 1982, the Linowes Commission issued its report, "Fiscal Accountability of the Nation's Energy Resources." The Commission found that "the government's royalty recordkeeping for Federal and Indian oil and gas leases is in disarray" and confirmed the theft of both federal and tribal resources, leading to its recommendation of a "thorough overhaul" of the government's royalty management system.<sup>23</sup>

In response, Congress passed the Federal Oil and Gas Royalty Management Act in December 1982 to strengthen the BLM's inspection and enforcement programs for onshore oil and gas production. It required lease operators to document well production and assessed penalties to operators found to have engaged in royalty theft or meter tampering.

Concurrently, Interior Secretary James Watt transferred oversight of onshore oil and gas operations to the BLM from the Minerals Management Service, an agency created the previous January. Secretary Watt subsequently amended his order in February 1983 to add onshore Indian lands to the BLM's jurisdiction. Offshore leasing oversight remained with the Minerals Management Service.



Oil and gas inspection in California.

### The Year of Three Agencies | By Larry Bauer

It will be hard to forget 1982. That was the year that some 700 employees of the Conservation Division of the U.S. Geological Survey (USGS) cycled through three agencies without ever filling out a job application.

The Department of the Interior, then under Secretary James Watt, was under fire for failing to accurately account for royalties due on the production of minerals not only from the public lands but also from the Outer Continental Shelf. The Linowes Commission completed a report after a lengthy investigation. In January 1982, a Secretarial order established the Minerals Management Service (MMS) by taking the Conservation Division of the USGS and melding it with the Outer Continental Shelf Division of the BLM. Ten months later, another Secretarial order took the 700 people in the onshore section of the MMS and placed them in the BLM. At one time, some of the Conservation Division personnel were under consideration for transfer to the Bureau of Indian Affairs, but that idea was later rescinded. At each transition from one agency to another, employees were given a letter advising them that they could accept the transfer, retire, or resign.

When things settled down and each person was in their new agency, the question in BLM remained—where in the organization would the Conservation Division be located? A personnel management committee, made up of senior BLM personnel and new executives from the Conservation Division, met to decide where to place employees. Locations were identified and offers were made. Sometimes an individual had an opportunity to choose among offices.

I was offered and accepted a position as the assistant district manager (ADM) for minerals in the BLM's Craig, Colorado, office. The proposed organization was for my division to have a branch of solid minerals and a branch of fluid minerals. The two branch chiefs and an inspection and enforcement coordinator had also recently been transferred to Craig.

Arriving in Craig in June 1983, we began the work of completing our staffing efforts. Petroleum and mining engineers were hired. Geologists were recruited. The existing clerical staff was assigned new duties to support us. Lease and well files were transferred from the Grand Junction office to Craig.

It soon became apparent that the BLM and the Conservation Division had different ideas about how to do things. The district manager and associate district manager in Craig readily offered me opportunities to transition to the BLM way of doing things. The ADM for operations, who had been in the Craig office for over 30 years at that time, became a mentor to me.

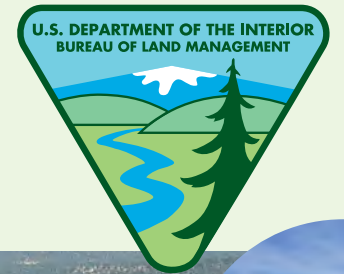
One challenge we faced was that our typing workload overloaded the few people in the typing pool. (Yes, this was in the days before every employee had a personal computer and the typists used Wang word processors.) Another challenge was that the Conservation Division engineers and geologists and the BLM resources staff viewed drilling oil wells and digging coal mines differently. There was a lot of conflict resolution that took place before we arrived at the final conditions under which oil and coal projects were to be undertaken. A lot of discussion occurred, and as each side came to understand the other's viewpoints, conflicts gave way to teamwork.

In my opinion, going to work for the BLM was the best thing that ever happened to me. The breadth of responsibility of Bureau work was exhilarating. I was able to learn about the public lands, meet new people, and travel to new locations.



Oil rig in Colorado.

Larry Bauer worked in the Craig District Office (now the Little Snake Field Office) before transferring to Phoenix, where he served at both the Arizona State Office and the National Training Center prior to his retirement.



The management of federal coal resources also came under scrutiny at this time. An April 1982 coal sale in the Powder River Basin became the focal point for wide-ranging public concerns. The \$67 million the BLM received for the Powder River Basin leases was roughly \$100 million less than the General Accounting Office's revised estimates of fair market value, and charges surfaced that some of the participating bidders had the minimum acceptable bids leaked to them.<sup>24</sup> Environmental groups also sued, alleging that the NEPA analysis for the sale was inadequate.

In 1983, Congress established a new commission, this one charged with studying the federal coal management program and resolving the controversies that were swirling around its leasing procedures. The Department of the Interior, once again, tapped Linowes to lead the commission. Interior Secretary William Clark, who had succeeded Watt in 1983, ordered a moratorium on coal leasing during the program evaluation.

The commission's 1984 report, "Fair Market Value Policy for Federal Coal Leasing," provided Congress with 36 recommendations for improving federal coal management. It did not address environmental issues. In response to the commission's report, the BLM determined it would no longer decide where leasing would occur within coal regions and strengthened the program's documentation requirements.

### Interest in Oil Shale Increases

As the BLM's energy mandate expanded, the Iranian revolution led to a peak in oil prices in 1980 (doubling to \$26 a barrel from 1979 prices). Responding to the surge in prices, companies



combed Alaska and other areas for oil. They also looked to the potentially large oil deposits in the shale formations of western Colorado. Attempts to spur development in the 1970s faded due to oil prices that were too low to make drilling for the resources economically feasible.

In 1980, Congress passed the Energy Security Act. The act created the government-sponsored Synthetic Fuels Corporation to stimulate production of 2 million barrels of oil a day by 1992 through commercializing technology to extract oil from oil shale and natural gas from coal. When oil prices began falling again in the early 1980s, Exxon backed out of its Colorado oil shale operation and released more than 2,000 workers in the area, an event that crippled local economies.

### Leasing Undergoes Reform

During the 1970s and 1980s, the BLM competitively leased only those lands located within a "known geologic structure" or a producing oil and gas field. The BLM leased lands outside of known geologic structures noncompetitively, and it could issue unleased tracts to the first qualified applicant through an over-the-counter system. The BLM also sold tracts within leases that had expired or been relinquished in a lottery. Consequently, speculators could pay a nominal filing fee for a lease and then resell it for thousands, or millions, of dollars.

Tom Lonnie, a former BLM assistant director for minerals, realty, and resource protection, recalled criminal investigations of "boiler room" operations where an unscrupulous broker solicited multiple applications from the public for a single lease.<sup>25</sup> The arrangement increased the broker's odds of handling the initial sale and guaranteed the broker most of the proceeds when the lease was resold in the secondary market.

Upset that the BLM had issued a lease noncompetitively on the Fort Chaffee Military Reservation in 1979 to a Texas firm instead of a firm based in his state of Arkansas, Senator Dale Bumpers began introducing legislation establishing a system for competitive leasing on federal lands in 1981.<sup>26</sup> In December 1987, the Federal Onshore Oil and Gas Leasing Reform Act finally became law.

The law established the competitive oil and gas leasing system the BLM uses today, with each BLM state (or the Eastern States office) holding auctions on at least a quarterly basis, with a minimum acceptable bid of \$2 an acre for each parcel. Tracts not sold competitively are eligible for

noncompetitive issuance for up to 2 years. Annual rentals are \$1.50 an acre for the first 5 years of a lease and \$2 an acre for each year thereafter, and producers pay royalties of at least 12.5 percent.

The courts weighed in on the proper degree of environmental review required for oil and gas development plans in the 1980s. In 1981, environmentalists sued the BLM—which handles oil and gas leasing on national forest lands—over a 1981 decision to lease 711 parcels in the Flathead and Gallatin National Forests in Montana. They maintained that the BLM should prepare an extensive EIS on any development plan for an area before issuing leases, rather than relying on the environmental assessments that it routinely issued.

In its 1988 ruling in *Conner v. Burford*, the U.S. Court of Appeals for the Ninth Circuit ruled that the BLM must conduct an EIS before making an "irretrievable commitment of resources" to disturb the environment through leasing or other activities. Lonnie said, "The effect of the ruling was that oil and gas leasing followed a different protocol in states governed by the Ninth Circuit than in the Tenth Circuit, where the appeals court had reached the opposite conclusion regarding EISs."<sup>27</sup> The Department of Justice declined to petition the Supreme Court to reconcile the differences. The divergence was resolved over the next decade as the BLM replaced its old management framework plans with updated RMPs, accompanied by EISs. These newer generations of RMPs/EISs analyzed various scenarios for opening lands to oil and gas leases in the context of NEPA.

### Public Land Disposal Authority Expands

Within the BLM, the lands, realty, and cadastral survey programs had unique responsibilities that had significant bearing on the ever-changing West. The BLM had to complete surveys and legal descriptions of federally owned lands before any other actions could take place on them. Such actions included disposing of public lands by sale, exchange, or other means and authorizing rights-of-way, permits, and licenses allowable under the public land laws.

FLPMA expanded the BLM's authority to dispose of public lands through exchanges, sales, and other conveyances. FLPMA required that disposal of lands "serve important public objectives, including but not limited to the expansion of communities and economic development, that cannot be achieved prudently or feasibly on land other than public land." In determining the public interest, the BLM was directed to consider such factors as improved federal land management, benefits to states and local communities, including community expansion and recreation, and the needs of fish and wildlife.

In the years immediately following passage of FLPMA, the BLM lands and realty program faced a number of significant challenges, including:

- Developing new regulations for land transactions
- Responding to dramatic increases in applications for energy-related transactions
- Completing an inventory of land previously withdrawn to identify those lands that should be returned to multiple use management

- Processing land selections under several laws that governed the disposition of federal lands in Alaska

In 1981, Secretary Watt invited western governors to identify public lands needed for community expansion or other uses. The governors responded with nearly 400 requests totaling 700,000 acres of public lands managed by the BLM and other agencies. The BLM began processing the requests that involved land under its jurisdiction, with most of the transactions involving land sales or conveyances under the Recreation and Public Purposes Act of 1926.





**Northern Futures | By Bob Faithful**

In the last 50 years, a special BLM realty story grew from promises made both to the State of Alaska and to Alaska Native Corporations and individuals. It continued the General Land Office tradition of building the nation.

In 1978, I joined a new team established in Anchorage to speed BLM land transfers under the 1971 Alaska Native Claims Settlement Act (ANCSA). Congress had promised 44 million acres of land to Alaska Native Corporations. Alaska Natives were shareholders of individual village and larger regional corporations. Of the acres promised in 1971, less than a million acres had been transferred after 7 years.

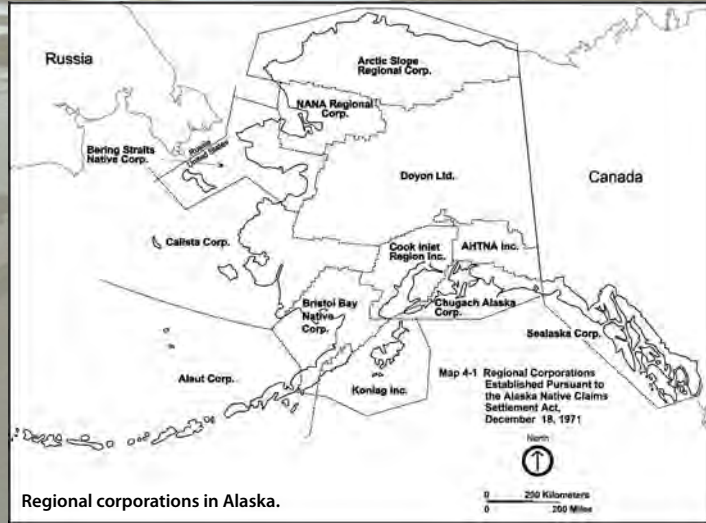
The BLM state director in Alaska, Curtis McVee established the ANCSA Conveyance Division in 1978. It was led by a special assistant, Robert Arnold, who was a respected Alaska expert, and BLM's first female deputy state director, Judy Kammins Albietz. The new team made a dramatic change in the historic patent process. We shared the draft of our final patent

document with the state and Native parties before issuing it, which allowed face-to-face discussions and changes without litigation. Small problem areas were held out of the document while hundreds of thousands of acres were approved. The men and women of the BLM ANCSA staff traveled by small planes and boats in all seasons and all across the state for meetings with the villagers, often sleeping in schools or private homes. These land title pioneers were mostly women breaking ground and establishing a high standard of public service.

Sue Wolf, Stan Bronczyk, and their teams transferred millions of acres in the early years of the program. In fact, BLM's success at expediting ANCSA transfers led the State of Alaska to file a lawsuit demanding that the transfer of 107 million acres under the Statehood Act (12 million acres a year) also be expedited. The lawsuit was settled in 1982, the same year I became the new deputy state director, working under Robert Arndorfer, the special assistant at that time.

Another land issue involved the resolution of 250,000 individual allotment parcels for Natives that were backlogged and now handed to the new ANCSA and state conveyance programs. Willa Mae Shore undertook a bold program with the state conveyances and, with her unit, transferred almost 13 million acres—an accomplishment never matched in recent history. Terry Hassett's team cleared the individual allotment goal. Ann Johnson, with a team of land law examiners, continued recordbreaking accomplishments, laying the economic and historic groundwork for Alaska Natives. Diversity, customer service, and accountability built another chapter to the nation's lands.

*Bob Faithful* was hired by the BLM in Alaska in 1978 and became the deputy state director for ANCSA and state conveyances in 1982. In 1984, he became BLM's Alaska programs manager in Washington, DC. Bob was the first African-American to serve as the associate state director (acting) for Eastern States, associate state director for Montana/Dakotas, and assistant director for support services for the BLM. He retired after 33 years with the Department of the Interior, serving in the Office of the Secretary, at the Bureau of Mines, and at the National Park Service.



Regional corporations in Alaska.



Small plane used to travel to villages in Alaska.

**Land Exchanges Increase**

Land exchanges were an important tool for consolidating land ownership to make public land management more efficient. Regulations requiring that parcels exchanged must have equal value had long hampered the exchange process, however. FLPMA provided an opportunity to streamline the process, and new regulations came out in 1981 that allowed for equalizing the differences in value through cash payments.

In the following years, the use of land exchanges rose dramatically. In 1981, the BLM conveyed roughly 50,000 acres through land exchanges. In 1988, the BLM conducted 67 land exchanges, conveying more than 230,000 acres of land to state and private interests in exchange for 378,000 acres that became part of the public domain.

**Congress Gets Involved in Land Exchanges**

The purpose of land exchanges in the late 1940s and 1950s was primarily to improve grazing administration. Because the public and private lands exchanged were generally in the same area and of equal value, these exchanges usually resulted in little criticism or controversy.

During the 1960s, with growing public support for conservation and environmental protection, Congress became more directly involved in the exchange of public lands for privately owned lands with high conservation values. Congress retained authority granted in the United States Constitution to dispose of federal lands, and while land management agencies could conduct *intrastate* exchanges, Congress had sole authority to authorize *interstate* exchanges.

Special acts passed by Congress authorized the acquisition of privately owned lands (“inholdings”) within units of the National Park System in exchange for “any property under the jurisdiction of the Secretary of the Interior.”

**Exchanged Lands Go to Other Agencies**

These three-way land exchanges typically called upon the BLM to contribute the public lands needed for an exchange. The BLM increasingly found itself in the unenviable position of contributing property under its stewardship in exchange for land that went to the National Park Service, the U.S. Fish and Wildlife Service, or the U.S. Forest Service. The BLM then served as the “lightning rod” for any public criticism, adverse publicity, or resulting investigations.

One of the earliest of these congressionally mandated exchanges occurred in 1962. It involved more than 6,000 acres of BLM lands near Phoenix and privately owned property north of San Francisco that became part of Point Reyes National Seashore. Conservation groups, members of Congress, and, of course, state and local officials

and the public in California strongly supported the exchange. Elsewhere, however, people roundly criticized the exchange, particularly after investors reaped enormous profits from the Phoenix area lands conveyed to private ownership.

Many years later, the Public Lands Foundation cited this exchange in a position paper that proposed changes to the BLM's lands and realty program.<sup>28</sup> The Public Lands Foundation paper said, “The National Park Service got the land they wanted. All that the BLM received from the exchange was controversy over land values, public criticism of the exchange, and two Congressional investigative committee hearings that accomplished little except to further embarrass the BLM.”

Yet, that exchange, and the dozens like it that followed, allowed the BLM and the lands and realty program staff to gain something else: the satisfaction that the agency was accomplishing great work—though generally without credit—to advance the public interest by helping to secure and preserve some of the priceless landscapes of the West.



Point Reyes National Seashore headlands from Chimney Rock in California.

## Congress Provides Law Enforcement Authority

Probably every BLM ranger at some point has answered the question: “When did rangers start carrying guns?” Though it seems an obvious outcome of urban crime spilling out onto the public lands, the BLM’s deployment of a highly visible, armed ranger force just a few decades ago was a delicate proposition. How then, and why, did the BLM come to need a contingent of armed law enforcement officers?

After its creation in 1946, the BLM continued administering the public lands as its predecessor agencies had, using the outmoded and often conflicting mandates of the multitude of laws passed during the previous 150 years. Powerless to stop unauthorized use, the BLM drafted a trespass manual in 1950. The Bureau gave resource specialists the cumbersome, time-consuming, collateral duty of initiating trespass actions for unauthorized use, occupancy, and development of the public lands, the outcome of which was dependent upon the cooperation of the trespasser or the federal civil courts. By the early 1950s, the BLM became aware of increased vandalism to cultural resource sites but lacked the authority and personnel to investigate and prosecute violations of the Antiquities Act of 1906.

By the early 1960s, President John Kennedy took notice of the public lands, saying they were vital to the nation’s economic well-being but suffered from uncontrolled use and a lack of proper management. Between 1963 and 1968 recreational visits to the public lands more than tripled. Former California State Director J. Russell Penny recognized as early as 1966 “that heavily populated California

presented a new dimension in public land management: ‘people management.’”

More than 16 million people lived within 3 hours of the unregulated California desert. Uncontrolled off-highway vehicle use was negatively affecting the public lands. The Land and Water Conservation Fund Act of 1964 had provided arrest authority to “persons authorized by the heads of such Federal agencies to enforce any such rules or regulations issued under this subsection,” but the BLM had no trained personnel to whom it could delegate this authority.

Working with the California congressional delegation, Penny convinced Congressman Bob Mathias of Tulare County to introduce California Desert Conservation Area legislation, which proposed, among other things, the establishment of a ranger force in the California desert. Penny commissioned a team in 1968 to answer the following questions:

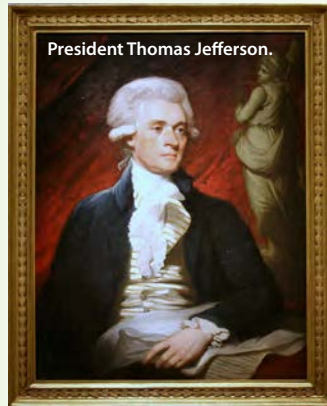
- How serious is our protection problem now?
- How bad can it get?
- What can we do immediately?
- What should we do in the future?



BLM ranger talking with off-road vehicle users at Dumont Dunes (1977).

## A Long Tradition of Federal Resource Protection | By Steven Martin

The need to protect federal resources goes back to the days when Thomas Jefferson was President. Though President Jefferson had a vision that the public domain would be surveyed prior to orderly settlement, settlers were moving onto the public domain before surveys were completed, creating conflict and competition for land. In 1807, Congress authorized the military to remove, fine, and/or imprison trespassers who moved onto unsurveyed public lands, which proved to be an unpopular policy. Congress relented and enacted numerous preemption laws that gave squatters first right to the public domain lands they occupied.



Unwilling to give up on the concept of orderly settlement, Congress used the power of the Property Clause of the U.S. Constitution to create the General Land Office (GLO) in 1812. The duties of the GLO were to “superintend, execute, and perform, all such acts and things, touching or respecting the public lands of the United States.”

By the late 1820s, protection of federal resources again became an issue when Congress realized that the vast stands of oak trees necessary for shipbuilding and the piney woods of the Old Northwest were vanishing as lumbermen clearcut the forests and moved on. In response, Congress enacted the Timber Trespass Act of 1832. The GLO hired “special timber agents” in 1832 to enforce this law. Unfortunately, so few agents were hired that timber theft and land fraud continued unabated. By 1883, the GLO created a law enforcement division staffed with 70 special agents charged with investigating timber depredations and fraudulent land entries.

By 1885, special agents were also investigating violations of the Unlawful Inclosures Act. In a landmark case, GLO investigators

discovered that cattle barons Daniel Camfield and William Drury had constructed a network of fences entirely on private lands that occurred in a checkerboard pattern with public lands. The fences effectively enclosed 20,000 acres of public lands and barred public access and settlement. In 1896, the government charged the cattlemen with violating the Unlawful Inclosures Act. The U.S. Supreme Court sustained the government’s case, affirming the government’s authority to manage and regulate the public domain. The Court said the government could not “permit any individual or private corporation to monopolize the public lands for private gain.” The Court also said, “The general Government doubtless has a power over its own property analogous to the police power of several States, and the extent to which it may go in exercise of such power is measured by the exigencies of the particular case.”

In 1897, Congress enacted the Forest Management Act, giving the GLO authority to regulate occupancy and use, develop mineral resources, sell timber, and provide for fire protection in the forest reserves. The first government employee to hold the title “Forest Ranger” was hired in 1898 in the Battlement Mesa Forest Reserve in Colorado. The Forest Reserve Manual of 1902 described the work of rangers as “protective duty, guarding against fire and trespass, fighting fires and stopping trespass, as well as assisting the State authorities in the protection of game.”

By the turn of the 20th century, a fledgling environmental movement was taking hold. President Theodore Roosevelt set large blocks of public lands aside to protect timber, watersheds, wildlife, and cultural resources. Congress enacted several laws in 1909 to protect these resources. Enforcement responsibilities were transferred from the GLO to the Department of the Interior’s (DOI’s) Division of Investigations in 1933. Due to a severely diminished workload and a wartime shift in management philosophy, these agents lost their law enforcement authority in 1942 when they were transferred back to the GLO. The former agents became “field investigators,” predecessors of today’s BLM resource specialists.

Even after the GLO and the Grazing Service were merged to form the BLM in 1946, resource protection continued to be a challenge. In 1971, Congress responded to the slaughter of wild horses by enacting the Wild Free-Roaming Horses and Burros (WH&B) Act, which provided “any employee designated by the Secretary of the Interior” with arrest authority for violations of any provisions of the act. The BLM was charged with the management and protection of wild horses and burros but lacked enforcement personnel, so in March 1974, BLM Director Curt Berkland contacted Federal Bureau of Investigation (FBI) Director Clarence Kelley to request assistance with enforcement. Kelley told Berkland the BLM must take responsibility for such investigations, not the FBI, and the BLM realized it needed its own enforcement personnel.

In 1974, the BLM hired its first law enforcement officer, Peter Silvain, a former U.S. Fish and Wildlife Service (USFWS) special agent, who was stationed in Washington, DC. The BLM then hired a second special agent and began developing a Bureau law enforcement program. Silvain adapted the USFWS badge for BLM law enforcement. In 1975, BLM Associate Director George Turcott authorized Silvain to hire special agents in Idaho, Arizona, Utah, Montana, California, Oregon, and Wyoming. These special agents were commissioned with the authority of the Wilderness Act of 1964, the Land and Water Conservation Fund Act



Team of horses hauling logs in Washington (1892).

of 1965, the WH&B Act of 1971, and the Sikes Act of 1974; however, they could only make arrests for violations of the WH&B Act.

Around that same time, President Nixon had taken notice of uncontrolled off-highway vehicle use on public lands and issued Executive Order 11644, which directed federal land management agencies to manage motorized vehicle use; designate lands as open, closed, or limited with regards to such use; and provide for resource protection and public safety. The BLM designated the public lands accordingly, but Nixon’s directive failed to provide the BLM with authority to enforce the land use designations. California State Director J. Russell Penny realized the time had come to implement a “ranger force” to establish a visible presence and oversee off-highway vehicle use on the public lands.

The BLM hired its first ranger, Steve Smith, in 1972 in Bakersfield, California. BLM’s Riverside district manager, Del Vail, hired Michael Wintch in 1973 as chief of the desert ranger group. Vail hired six additional rangers that year and 21 more in 1974. Penny, fully aware that the BLM had no enforcement regulations or authority, said, “The rangers are natural resource specialists first and people managers second. Our rangers will try to achieve as much of their jobs as possible by education and persuasion.”

Today, BLM’s law enforcement program continues to include rangers, who provide a visible deterrent on the public lands, and special agents, who are plainclothes law enforcement officers responsible for long-term investigations of administrative, civil, and criminal violations of federal laws relating to the use, management, and protection of public lands and resources. These investigators are classified in the same job series as other federal criminal investigators such as those in the FBI, Drug Enforcement Administration, and U.S. Marshals Service. Like their GLO and DOI predecessors, they investigate cases of land fraud and timber and minerals theft, but with the enactment of the Federal Land Policy and Management Act of 1976, they now have the authority to make arrests for those crimes.



BLM ranger with vehicle (1970).

Steven Martin was in law enforcement with the BLM for 24 years. He served as a ranger in California and Utah, a ranger and a special agent in New Mexico, and the assistant special agent in charge in Arizona.

Three years later, the BLM issued a report on a basic law enforcement study. The report stated: “Bureau land in California is a valuable commodity . . . but these land and resource values are steadily eroded by uncontrolled use, abuse, vandalism and thefts, and visitor health and safety are in jeopardy.” It also noted that recreation regulations issued by the Secretary of the Interior in 1969 lacked enforcement authority.

The report introduced the concept of rangers “to administer protection services, including law enforcement in the California Desert and other California wild land areas frequented by traffic violators, thieves, drug and narcotic users and wanted felons . . . and the protection of man from man during their use of public resources and facilities.” It noted that without enabling legislation, rangers would be “a roving BLM ambassador rather than a lawman.” The report concluded that “the penalties of inaction would result in irreparable loss and damage to the public lands and resources if BLM continued with the ‘status quo.’” and that “BLM must develop a law enforcement capability to protect visitors, resources, and property after persuasion, education and cooperation fails.”

The question of whether to grant the BLM law enforcement authority became one of the most contentious issues before Congress as FLPMA worked its way through the legislative process. Many in Congress were fearful of turning every BLM employee into a law enforcement agent.

Others believed law enforcement authority was necessary for the BLM to manage the public lands effectively. Representative Shirley Pettis of California stated, “Without police powers, BLM officials are unable to take action to protect the land and the users of the land.”<sup>29</sup>

Representative John Seiberling of Ohio agreed:

“BLM currently has only seven special agents, hired in the past year. They can make arrests for crimes against wild horses, but not for crimes against natural resources or people. They are authorized to investigate violations of natural resource laws such as land fraud, theft of timber and minerals, but once their investigation is complete, they have to call on another Federal agency to make the arrest.”<sup>30</sup>

In a last-minute rush before adjournment, Congress reached a compromise on the issue. FLPMA included four provisions that were fundamental to BLM law enforcement. The act defined the agency’s jurisdiction, provided BLM personnel with law enforcement authority, made violations of BLM regulations class A misdemeanors, and established a ranger force in the California Desert Conservation Area.

### Rangers Issue Citations

Some called the early days of the ranger program the “smile and wave” phase as the BLM placed rangers under the “visitor services” organizational umbrella. Although rangers finally had law enforcement authority, the BLM had few regulations rangers could enforce. Managers were uncertain, and perhaps a bit apprehensive, about armed rangers on public lands. Some managers felt the best use of rangers was to gather field data for resource specialists since rangers were in the field anyway. Further, rangers were required to write a memo to the state office any time they took law enforcement action, such as using emergency lights to conduct a vehicle stop.

Adding to the pressure, each ranger was responsible for more than 1 million acres of public lands. Moreover, rangers lacked federal authority to issue citations for class A misdemeanors, which, under the terms of FLPMA, included violations of any regulation governing public lands issued by the Secretary of the Interior. That problem was resolved in 1980 when the U.S. Supreme Court issued its “Rules of Procedure for the Trial of Misdemeanors,” allowing the issuance of citations for class A misdemeanors. The new rules allowed the BLM to develop citation procedures and collateral fine schedules, which the U.S. District Court’s Central District of California adopted in 1982. In the interim, Dennis McLane, a ranger in the BLM’s California Desert District, had obtained peace officer authority from the California Departments of Fish and Game and Forestry in 1981, authorizing rangers to enforce state resource laws and issue state citations.

In September 1984, the BLM issued its first law enforcement manual, which included a formal statement of the program’s objective:

“The objective of this program is to seek voluntary compliance with Federal laws and regulations relating to the public lands. When such compliance is not possible, law enforcement employees are responsible for enforcement of applicable laws and regulations as they relate to the use, management, and development of public lands and resources.”



BLM ranger helping a visitor (1970s).

### The Sagebrush Ceiling | By Lynell Schalk

*Lynell Schalk will strap a .357-magnum revolver on her hip this weekend, climb into a jeep and, like a marshal of the old West, begin enforcing the law in a wild and desolate territory aflame with a new kind of frontier warfare.*  
*The 28-year-old Miss Schalk received her badge and gun yesterday, becoming one of the nation’s first desert peace officers.*

—Robert Lindsey, The New York Times, April 9, 1978

Deserts are fragile environments. I learned this firsthand during my time as a seasonal ranger in the Four Corners region for the National Park Service and the BLM. When I transferred to BLM’s California Desert Conservation Area (CDCA) in 1976, the agency was overwhelmed by millions of public land visitors. I became one of the agency’s first 13 uniformed law enforcement rangers delegated with federal authority to protect the CDCA. I was also the BLM’s first female officer.

The BLM launched the CDCA ranger program after the passage of FLPMA. BLM rangers were then trained at the Federal Law Enforcement Training Center in Glynco, Georgia. Out of more than 800 trainees representing nearly 80 federal agencies at the center, there were fewer than 30 females, which put a lot of pressure on us to succeed. I ended up graduating in the top 5 percent of my class.

In the beginning, there was controversy over what a female law enforcement ranger uniform should look like. The California State Office had me pose for photographs in a variety of uniform components: a chocolate brown above-the-knee polyester skirt, a woman’s ascot tie, a man’s full length tie, a pair of chocolate brown men’s slacks, and a belt and holster. Deciding how to anchor the gun holster over the short brown beltless skirt was my biggest challenge, as the gun belt rose up under my armpits each time I withdrew my firearm. After weeks of debate, the agency finally authorized me to wear the same uniform as the male officers.

There was also controversy over the carrying of firearms. Concerned about public reaction, Secretary of the Interior Cecil Andrus was reluctant to arm BLM rangers, despite the FLPMA mandate, and was urged to place parameters on the rangers’ authority. In February 1978, the 13 of us reported to the BLM California State Office to receive our delegations. The national press had been called in to record the momentous event. In full dress uniform, minus our defensive equipment and badges, we joined the state director for a conference call with the (acting) director of the BLM in Washington, DC. The director told us of a January 24, 1978, memo in

which the Secretary had approved the deployment of rangers with the stipulation “that they not wear side arms unless engaged in active search of violators. Arms should be kept in the patrol vehicle and out of sight of the public when conditions permit.” Another stipulation restricted our enforcement area to the CDCA.

When the director then suggested that we keep our “side arms” locked in our glove boxes or briefcases, we reacted with visible outrage. We were extremely dedicated to the protection of the public lands and concerned for the safety of the public, other employees, and ourselves. Incensed, we spontaneously got up from our chairs and advised the director we would not accept the delegation under such restrictions. The swearing-in ceremony was cancelled and the BLM’s public affairs staff was left to face the media’s many questions about why the undelegated rangers were driving out of the parking lot.

By February 16, 1978, the Secretary had rescinded his earlier restrictions and the 13 of us were sworn in on April 7, 1978, with full federal law enforcement authority. Our actions were described by Paul D. Berkowitz in his book, “U.S. Rangers: The Law of the Land”:

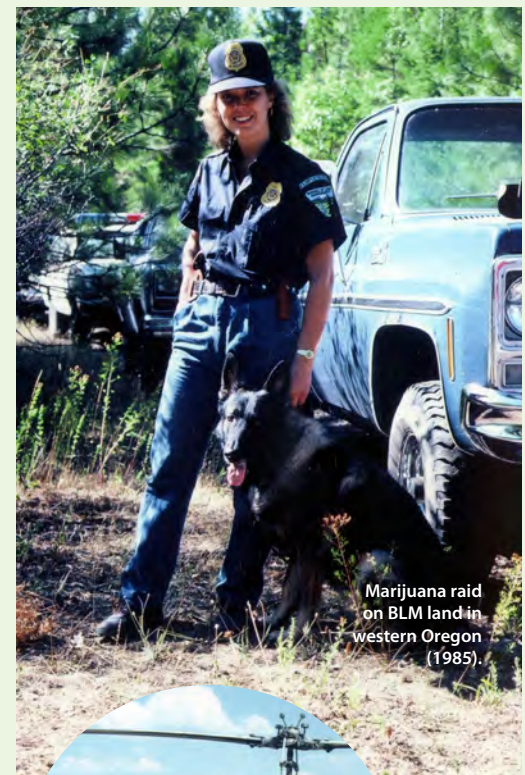
“It’s likely that the actions of these first thirteen Rangers—and their resolve to be treated as professionals, and to retain and carry essential defensive equipment—has helped them and their successors to avoid any number of violent assaults and other challenges to their authority that they would otherwise have experienced.”

After a 27-year career with the BLM, I retired in 2001 as the special agent-in-charge for Oregon and Washington, the first woman officer to serve in this position. I had hoped that my efforts had lifted the “sagebrush ceiling” for future women officers. By 2011, however, out of BLM’s 216 delegated rangers, only 18 were women. The sagebrush ceiling was only slightly cracked.

*Lynell Schalk* worked as a ranger in the Monticello District in Utah and the El Centro Resource Area in California. She was a special agent in the Oregon State Office and retired as the special agent-in-charge in 2001.



Ranger Schalk receiving federal law enforcement authority from California State Director Ed Hastey (1978).



Marijuana raid on BLM land in western Oregon (1985).



Helicopter surveillance operation in the Grand Gulch Primitive Area in southeast Utah (circa 1986).



## The Law Enforcement Program Expands

As rangers patrolled the public lands, they continued to discover violations previously unnoticed by the BLM, partly because new mandates and regulations restricted or prohibited historic uses and partly because activity on the public lands was increasing. The BLM began to realize the value of having rangers out on the public lands but recognized there were too few of them. Southern California Congressman Jerry Lewis, aware that the BLM's 1971 law enforcement study had recommended 50 rangers for the California desert, secured appropriations in 1988 for the BLM to hire 20 rangers, expanding the desert ranger force to 48.

The BLM hired additional law enforcement officers that year as a result of President George H.W. Bush's establishment of the Office of National Drug Control Policy. This policy required federal agencies with drug enforcement



BLM Ranger Edwin Whitteaker and K-9 Officer Tessa after a drug arrest.

responsibilities to devote funds and efforts toward drug enforcement, including bureaus of the Department of the Interior. The BLM was now in the drug enforcement business. The Bureau restructured its law enforcement budget with the goal of establishing a special agent as a drug enforcement coordinator in each BLM state office. Later that year, the BLM hired two special agents in New Mexico and one in Oregon.

With an expanding program, a high level of curiosity, and participation in the war on drugs, it was only a matter of time, statistically speaking, before a BLM law enforcement officer would be involved in a serious incident. That day arrived during Easter weekend in 1989. As a Tucson, Arizona, ranger approached the remote residence of a suspected cactus thief, a teenage boy, armed with a shotgun, opened fire. The ranger was not seriously injured and returned to duty shortly after the incident, serving with distinction until retirement.

BLM law enforcement officers worked alone in remote areas and criminals frequently outgunned them, as was the case in Tucson. The officers needed to be better equipped, particularly to fight the war on drugs. In 1990, the BLM's law enforcement chief, Walter Johnson, replaced aging revolvers with modern semiautomatic handguns and secured federal funding to combat marijuana cultivation and smuggling on public lands throughout the West and along the United States–Mexico border. The BLM established several new drug and border interdiction positions that year, including a national drug enforcement coordinator agent in Washington, DC; seven agents and three rangers in California; five rangers in Las Cruces, New Mexico; and four agents in Oregon, one as a Bureau-sanctioned K-9 officer.

Johnson used federal drug- and crime-fighting funds in 1990 to launch two large-scale marijuana eradication operations on public lands in California and Oregon. With the National Guard in a support role, Operation Green Sweep, a 2-week operation in northern California, brought national attention to the BLM's marijuana eradication efforts. Local Garberville media dubbed Operation Green Sweep as “the U.S. invasion of Humboldt County.”

Another major operation, called Ghost Dancer, was a summer-long marijuana eradication effort conducted in conjunction with the Oregon State Police and active duty military members. It was successful in eradicating a large number of marijuana gardens throughout Oregon.

In the years that followed, BLM law enforcement officers played an increasingly vital role in the nation's efforts to stem the tide of illegal drug trafficking.

## Changes Influence Fire and Aviation Management

The story of the BLM's fire and aviation program is one of growth and change that often reached a hectic pace. While wildland fire itself and the basics of putting fire out have remained the same, all else has evolved in ways not even imagined in the early days of the program. Advances in equipment, technology, science, and training; the expansion of communities into fire-prone wildland areas (known as the wildland–urban interface); the spread of invasive species; the recognition of fire's role in nature; and the influence of resource management on fire, among other factors, have all helped transform the BLM's fire program into the modern, professional, diverse, and complex program it is today.

Through the 1950s and 1960s, and even into the early 1970s, BLM wildland fire engines were often simple flatbed trucks with tanks mounted on the back, pump motors that had to be hand-cranked to start, and a wooden toolbox that held a few shovels, rakes, and Pulaskis. Cowboy boots and jeans were standard dress for firefighters, who typically rode to a fire on the back of the engines, hanging on between the tank and the side rails. “If you had a fire-resistant Nomex fire shirt in those days, that meant you were the boss,” said Carlos Mendiola, a retired veteran of the early days of BLM firefighting.<sup>31</sup>

At that time, the fire program was small and isolated from other BLM programs. The program relied almost exclusively on summer temporary workers and the occasional “per diem guard” (typically ranchers who picked up tools at one of several tool caches in the field and helped suppress a fire in exchange for fire pay) and had the singular mission of putting out wildfires. There was no attempt to understand fire in the larger picture of resource management and little or no cooperation with other agencies or departments. Safety was little more than a sideline consideration.

As time passed, things changed. Engines continued to be the primary equipment of the BLM fire



A control burn operation south of Twin Falls, Idaho (1958).

program, but the 1970s saw those vehicles designed specifically as wildland fire engines. Nomex became available to all firefighters, though it was not required as personal protective equipment. Due to the ill-fitting nature of the early Nomex pants, most firefighters opted to wear the shirts but left the pants stowed in their gear bag in favor of wearing jeans.

As the engines and gear evolved during the 1970s, agencies' views on fire also began to change. The strict federal “10 a.m. policy,” which stated that fires would be controlled by 10 o'clock of the morning following the report of a fire, was beginning to teeter. This policy had governed fire management and control in the BLM, the U.S. Forest Service, and other wildfire management agencies for decades. But over time, it became increasingly apparent to fire and resource managers that such quick suppression of wildfire—essentially removing fire from the environment—was creating new problems. As fire suppression efforts grew more effective, the fuels in forests and woodlands became overgrown and unhealthy. When fires did occur, they tended to be more severe and resistant to control, posed greater risks to firefighters, and caused more damage to natural resources. Too little fire in the forests led to the unintended consequence of creating dense, fire-prone stands.



Shoveling a fire line in Oregon (1959).

The BLM's rangelands also showed early signs of ecological change, which foreshadowed future trends. Landscapes suffered from an uneven distribution of fire. In lower elevation valleys, a frequent-fire cycle was born, where cheatgrass and fire interacted to the detriment of habitats and native plants. More fires led to more cheatgrass. Here, native grasslands declined in health and vigor, while invasive plants increased.

On other sites, too little fire changed landscapes differently. Where fire once maintained a healthy balance of grasses and shrubs on BLM-managed foothills, a lack of fire allowed species such as pinyon and juniper to gain a foothold and expand in range. Without the periodic cleansing provided by wildfire, species such as the water-guzzling western juniper encroached and began to dominate, robbing healthier species of scarce water resources. Consequently, flows in streams diminished, native grasses and forbs declined, and infrequent fires became more damaging. Across the BLM's lands, these indicators underscored the importance of the natural role of fire in maintaining habitats and sustaining healthy landscapes.



Using high-pressure hoses to fight a blaze in Idaho (1963).



Laying hose on a steep slope during the Raft River Fire in Idaho.

## Firefighting: Then and Now | *By the BLM's National Interagency Fire Center External Affairs Staff*

In the 1960s, perspectives on fire and its place on the land were evolving, and fire operations were changing, at times in major ways. During the decades that followed, the growth of aerial operations, increased agency cooperation, implementation of the Incident Command System (ICS), and development of standardized training significantly affected the way fires were managed and formed the basis for fire operations today.

“Fire used to be primarily a ground operation,” said Roy Percival, whose career in fire management began in the mid-1950s and spanned 35 years. “In the earlier times, everything had to do with hiking and trucks.” As time passed, aerial operations became an integral part of fire management, from smokejumpers to helicopter crews to single-engine air tankers and heavy air tankers, with capacities sometimes exceeding 3,000 gallons of retardant or water. By 2010, very large air tankers—or VLATs—with capacities of 12,000–20,000 gallons were being used on fires.

In the early 1960s, the BLM and the Forest Service (FS) shared a coordination center near downtown Boise, Idaho. By 1965, the BLM had established the Great Basin Fire Center in vacant buildings near the Boise airport, the FS was looking to establish an air center for fire suppression operations, and both agencies began working with the National Weather Service (NWS) to develop fire weather forecasting capabilities. By 1968, the BLM had acquired land adjacent to the Boise airport and started construction of what was to become the Boise Interagency Fire Center (BIFC). In the spring of 1969, the BLM, FS, and NWS moved into the new administration building; a mess hall, barracks, and a smokejumper loft were completed that same year. The three agencies were later joined by the Department of the Interior's new Office of Aircraft Services and the National Park Service (NPS), Bureau of Indian Affairs (BIA), and U.S. Fish and Wildlife Service (FWS). A new era of cooperation and coordination evolved within the fire community, and that spirit of cooperation continues today at what is now called the National Interagency Fire Center (NIFC). The BLM still owns the buildings and continues to serve as the host agency and the largest employer at NIFC.

In the early 1980s, NIFC adopted the Incident Command System (ICS), an organizational model that would change the way wildfire response was managed. Previously, a lack of communication and coordination, particularly during fires that crossed jurisdictional lines and involved multiple agencies, led to confusion. The ICS was based on a quasi-military organization and established a clear line of command across agencies from an incident commander to general staff and branch chiefs for aviation, operations, planning, logistics, finance, safety, transportation, and other functions.

The ICS not only brought much needed organization to wildland fire response, it also was easily scalable to the size and complexity of any incident. The system would

later be adopted by all federal, state, and local emergency responders, not just for wildfire but also for all types of natural and human-caused disasters, from hurricanes to terrorist attacks.

The success of interagency fire response, and later, the ICS, was dependent upon common and consistent training. During the early 1970s, on a float trip down the Colorado River, Secretary of Agriculture Earl Butz and Secretary of the Interior Rogers Morton engaged in several campfire discussions about how their departments could work more closely together. In 1972, during a subsequent meeting of wildland fire training officers, it was discovered that eight separate and distinct units were developing similar courses in fire safety. These events pointed to a need for standardized training and led to the creation of the National Wildfire Coordinating Group (NWCG), composed of representatives from the FS; four Department of the Interior agencies (BLM, FWS, NPS, and BIA); state fire organizations through the National Association of State Foresters; and local departments through the U.S. Fire Administration, an organization of the Federal Emergency Management Agency.

With standardized training, all firefighters would be trained according to the same principles, and functional firefighter and incident management roles could be filled in times of need across jurisdictions, agencies, and geographical areas. Since its inception, the NWCG has developed and established standards and guidelines covering the full spectrum of wildland fire management, from training, equipment, and aviation to business practices, risk management, communication, and numerous functions in between.

According to Mike Campbell, the BLM pioneered much of the early effort in the fire community to standardize training. Campbell was one of a half-dozen employees hired in 1974 to help put together the new training program. New ideas regarding training, what was needed, and how it was presented and implemented in BLM's fire community were welcomed and given every opportunity to succeed. “If you had some spunk, some imagination, and creativity, you could sell your idea to management and they would let you try it,” recalled Campbell, who spent more than 28 years in the BLM fire program. “You were allowed to experiment and prove the worth of your idea.”

As the ICS was established and training and other elements of the fire program gelled, the seeds of a more professional firefighting and fire management workforce were beginning to sprout. “We went from an organization of temporary employees to more permanent employees,” Campbell said. “People got hooked on fire and the change gave them a career ladder. We went from a cadre of folks to a team of professionals.” And that team of professionals is now better prepared to face the challenges of fighting wildland fires that are yet to come.

## Yellowstone Fire Raises Policy Concerns

Advancements in equipment, training, communications, interagency cooperation, and other elements of the fire community continued to evolve at a steady pace into the 1980s. During this time, questions arose about the effectiveness of fire suppression, and the resulting buildup of hazardous fuels surged. The practices of reintroducing fire on the landscape through prescribed fire and managing remote wilderness fires less aggressively took root and grew.

Early in the decade, an escaped prescribed fire that ultimately resulted in a fatality and the loss of more than 40 homes and commercial buildings in Michigan reverberated across the fire community. That fire led to a number of lessons learned, including the need to define appropriate parameters—such as temperature, humidity, winds, terrain, and fuels—and safety measures for conducting prescribed fires.

By mid-decade, a series of significant events had begun that would ensue over the next two

decades and significantly change the nation's firefighting community. Among those events were the Yellowstone fires of 1988, when nearly 800,000 acres of America's favorite national park burned, focusing more attention on the sometimes hazy relationship between wildfire and healthy landscapes. Americans were both fascinated and appalled by what they saw on the nightly news—flames racing through the park, threatening some of the most iconic natural and cultural resources in the country. Yellowstone demonstrated the consequences of rapidly suppressing wildfire and allowing fuels to build to dangerous levels.

“Yellowstone definitely was a turning point,” said Bill Mitchell, a former BLM employee with 35 years of experience in fire logistics, plans, and finance. “The Yellowstone fires led to even greater cooperation among the agencies. People got more interested in applying science to fire suppression after Yellowstone. And there was an increase in public interest, which was the catalyst for changes in policy.”<sup>32</sup>



Fire approaching Old Faithful complex in Yellowstone (1988).



Ten years after the Yellowstone fires.

## The Wildland–Urban Interface Draws Attention

On another front, although wildfires had been threatening private lands since people first built homes in fire-prone landscapes, it wasn't until more modern times that issues related to the mix of communities and wildfire caught the nation's attention. California, in particular, had experienced home losses to wildfires for years, but when a Florida wildfire burned 400 homes in a single day in 1985, the nation and Congress took note.

“When Congress called it a ‘national problem’ it drew a lot of attention from the public and the fire community,” said Pat Durland, who was head of the BLM's national fire prevention, education, and community programs in the 1990s and early 2000s. “I think that signaled the start of wildland–urban interface programs.”<sup>33</sup>



Aerial view of a wildland–urban interface.

## Wild Horse and Burro Inventories Identify Issues

The original Wild Free-Roaming Horses and Burros Act of 1971 declared that these animals are “living symbols of the historic and pioneer spirit of the West” and that they are “fast disappearing from the American scene.” The act directed the Department of the Interior (and, by delegation, the BLM) to protect and manage them “as an integral part of the natural system of the public lands.” The act also gave the Department of Agriculture oversight responsibility for a much smaller population of wild horses and burros on lands managed by the U.S. Forest Service.

Yet, after decades of strife between livestock operators who held grazing leases or permits and advocates for the wild horses and burros that competed for water and forage on the public lands, the vision of harmonious management of this program proved to be an elusive one.

In 1978, Congress determined that the 1971 Wild Free-Roaming Horses and Burros Act was achieving the goal of protecting the animals. However, Congress identified the need to facilitate “humane adoption or disposal” of the animals



Adopted horse in Utah (1977).

because they “exceed the carrying capacity of the range” and “pose a threat to their own habitat, fish, wildlife, recreation, water and soil conservation, domestic livestock grazing, and other rangeland values.”<sup>34</sup> Congress amended the original law in provisions of the Public Rangelands Improvement Act.

The amendments directed the BLM to maintain a current inventory of wild horses and burros to determine appropriate management levels for herd management areas and to determine whether those levels could be achieved through removal of animals deemed to be in excess of what the range could support or other options.

The act further provided that if the BLM determines that a given area is overpopulated:

“Such action shall be taken, in the following order and priority, until all excess animals have been removed so as to restore a thriving natural ecological balance to the range, and protect the range from the deterioration associated with overpopulation:

“(A) The Secretary shall order old, sick, or lame animals to be destroyed in the most humane manner possible;

“(B) The Secretary shall cause such number of additional excess wild free-roaming horses and burros to be humanely captured and removed for private maintenance and care for which he determines an adoption demand exists by qualified

individuals, and for which he determines he can assure humane treatment and care . . .

“(C) The Secretary shall cause additional excess wild free-roaming horses and burros for which an adoption demand by qualified individuals does not exist be destroyed in the most humane and cost efficient manner possible.”

While the Public Rangelands Improvement Act authorized the BLM to destroy unadoptable excess animals, BLM Director Robert Burford and subsequent annual appropriations bills suspended the use of this authority in 1982.

The BLM continued its “Adopt-A-Horse” program, which it launched in 1973 for horses gathered from the Pryor Mountain Wild Horse Range in Montana and Wyoming. Between 1973 and 1984, the BLM gathered an average of about 4,300 horses from the public lands each year. The BLM successfully placed most of these animals with private individuals through the adoption program.



Wild horses in the Pryor Mountains in Montana.

## Adoptions Place Mustangs in Good Homes | By Sarah Beckwith

Under an ominously cloudy sky, a 5-year-old gray horse is ridden through a corral past both curious onlookers and serious bidders perched on bleacher seats. Scott Fluer breaks the rhythm of his auctioneer’s chant to offer some encouraging insight about this particular wild horse.

“Sky is anxious to please his trainer and needs an experienced rider. At his height, he’s perfect for the over 55 crowd. Don’t let him get away, folks!”

The crowd chuckles, Fluer returns to his speedy chant, and Jeannie Bolt of Ten Sleep, Wyoming, raises her hand. Bolt is not yet part of the over 55 crowd, but by the end of the day, she has adopted Sky anyway, along with a brown, saddle-started wild horse called Billy by his trainer. The horses have been patiently “gentled” over the past few months by inmates of the Wyoming Honor Farm in Riverton, which uses the gentling of wild horses as a rehabilitation tool.

In 1988, the Honor Farm and the BLM worked out a cooperative agreement for the training and adoption of wild horses. The Honor Farm has found that this program plays a big part in inmate rehabilitation. Trainers and wild horses make positive strides together by learning to respect and trust each other. Trainers learn that through communication, patience, and respect, even a wild animal will respond positively. Inmates who are released after working in this program have a greater chance of success in the outside world.



Honor Farm trainer showing a wild horse at auction.

In addition to the Honor Farm, the BLM contracts with correctional facilities in Colorado, Kansas, Nevada, and Utah to gentle wild horses. As a result, hundreds of wild horses, in various stages of training, are offered for adoption into caring homes each year.

Providing a home for a wild horse or burro is both a challenging and rewarding experience. Jeannie Bolt now cares for two living legends of the American West. Jeannie calls Billy and Sky over to say hello. They walk right over, and she strokes Billy’s head. “They do whatever we ask them to,” she says. “They hesitate sometimes, but then they do it. I thought I’d have to work and work to gain their trust, but it’s there. They let me hang on their necks!”

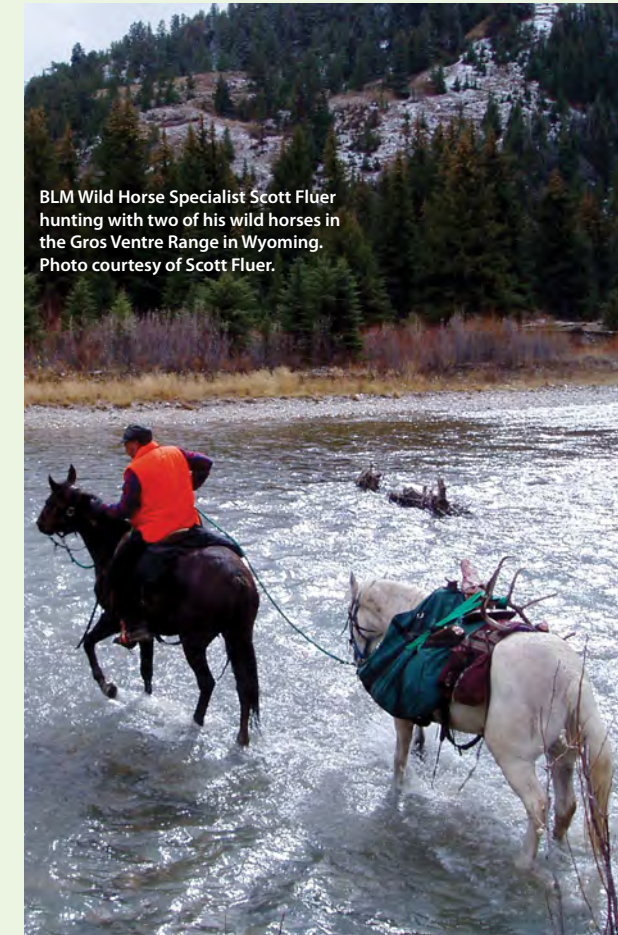
Even the auctioneer is sold on wild horses. Scott Fluer, who is also a BLM wild horse specialist in Wyoming’s Lander Field Office, has adopted six wild horses over the years. He and his family use them for trail riding, hunting excursions, and moving cattle. In fact, Fluer says he takes only his wild horses when he goes hunting, even though he also has five domestic horses. “It’s part of their training. They have to learn to rely on me for their food and water,” he says. “And it’s also a bonding experience. It builds trust and respect between us. They know me, they know my voice. There has to be that bond between a horse and his rider.”

The entire Fluer family has grown attached to their adopted horses. Fluer’s oldest daughter did a great deal of the training when they adopted a weanling named Cisco 9 years ago. He was so well-trained that she rode him in horse competitions around the state. A younger daughter rides trails with one of the other wild horses. It’s such a gentle horse that the family uses it as a “lesson horse”—a horse they use when teaching friends how to ride.

The experiences of these families speak volumes about the temperament and trainability of wild horses if given the attention, commitment, and patience they need. They have a challenging road to travel from living free and wild on the range to relying on people for their needs. But it can be a rewarding journey for both horse and human.

Back at Otter Creek, Jeannie peers out of the window of her office. Billy and Sky munch contentedly under a rainbow that has appeared following a late afternoon shower. “You know how some people like to garden?” she asks. “This is my therapy.”

Sarah Beckwith is a BLM public affairs specialist in the Wind River/Bighorn Basin District in Wyoming.



BLM Wild Horse Specialist Scott Fluer hunting with two of his wild horses in the Gros Ventre Range in Wyoming. Photo courtesy of Scott Fluer.



Wild horse Billy nibbling grass from owner Jeannie Bolt’s hand.

## Notes

1. A more detailed discussion of management framework plans appears in James Muhn and Hanson R. Stuart, *Opportunity and Challenge: The Story of BLM* (U.S. Department of the Interior, Bureau of Land Management, 1988), 120-122, [www.blm.gov/wo/st/en/info/history/features/opportunity\\_and\\_challenge.html](http://www.blm.gov/wo/st/en/info/history/features/opportunity_and_challenge.html).

2. Rogers C.B. Morton quoted in Phil Hanceford and Nada Culver, *Toward a Bureau of Landscape Management: The Evolution of BLM's Conservation Mission* (Denver: The Wilderness Society, BLM Action Center, 2010), 18.

3. Richard Nixon, "Statement About the National Environmental Policy Act of 1969," January 1, 1970, online by Gerhard Peters and John T. Woolley, *The American Presidency Project*, [www.presidency.ucsb.edu/ws/?pid=2557](http://www.presidency.ucsb.edu/ws/?pid=2557).

4. Frank Gregg, "Implementing FLPMA," in James Muhn and Hanson R. Stuart, *Opportunity and Challenge: The Story of BLM*, (U.S. Department of the Interior, Bureau of Land Management, 1988), 206, [www.blm.gov/wo/st/en/info/history/features/opportunity\\_and\\_challenge.html](http://www.blm.gov/wo/st/en/info/history/features/opportunity_and_challenge.html).

5. John D. Leshy served as Assistant Solicitor in the Department of the Interior from 1977 to 1980 and as Solicitor from 1993 to 2000.

6. John D. Leshy, "Unraveling the Sagebrush Rebellion: Law, Politics and Federal Lands," *14 U.C. Davis L. Rev.* 317 (1980), [http://repository.uchastings.edu/cgi/viewcontent.cgi?article=1369&context=faculty\\_scholarship](http://repository.uchastings.edu/cgi/viewcontent.cgi?article=1369&context=faculty_scholarship).

7. Public Land Law Review Commission, *One Third of the Nation's Land: A Report to the President and to the Congress* (Washington, DC, 1970), 96.

8. President's Advisory Panel on Timber and the Environment, *Report of the President's Advisory Panel on Timber and the Environment* (Washington, DC, 1973), 8.

9. Editorial, *Spokesman-Review* (Spokane, WA), March 3, 1996.

10. John B. Loomis, *Integrated Public Lands Management: Principles and Applications to National Forests, Parks, Wildlife Refuges, and BLM Lands*, 2nd ed. (New York: Columbia University Press, 2002), 546.

11. Phil Hanceford and Nada Culver, *Toward a Bureau of Landscape Management: The Evolution of BLM's Conservation Mission* (Denver: The Wilderness Society, BLM Action Center, 2010), 14.

12. Ibid.

13. Public Rangelands Improvement Act of 1978, <http://www.gpo.gov/fdsys/pkg/STATUTE-92/pdf/STATUTE-92-Pg1803.pdf>.

14. U.S. General Accounting Office, *Rangeland Management: More Emphasis Needed On Declining And Overstocked Grazing Allotments*, GAO/RCED-88-80 (Washington, DC, 1988), <http://www.gao.gov/assets/150/146517.pdf>.

15. Wayne Elmore, "Twenty-One Years: The Ever-Changing Tale of Oregon's Bear Creek," *Range Magazine*, Spring 1998.

16. Outdoor Recreation Resources Review Commission, *Outdoor Recreation for America: A Report to the President and to the Congress by the Outdoor Recreation Resources Review Commission* (Washington, DC: U.S. Government Printing Office, 1962), 1.

17. Cy Jamison quoted in "Back Country Byways Beckon," *American Motorcyclist* 44, no. 2, (1990):42.

18. The BLM did create "primitive areas" under the sketchy authority for multiple use management in the Classification and Multiple Use Act. These "primitive areas" became "instant study areas" under the Federal Land Policy and Management Act (FLPMA), but there was no clear legislative recognition that the public domain contained lands worthy of incorporation into the National Wilderness Preservation System until FLPMA.

19. The estimated size of the public domain in the lower 48 states as of October 21, 1976, was 175 million acres and included the 2.4 million acres of O&C lands not covered by the section 603 wilderness review process.

20. There were other demands driving this urgency, such as a power line right-of-way and a major oil and gas leasing plan in the Rocky Mountain "overthrust belt," but the initial drive was the California Desert Conservation Area Plan.

21. Louis Galambos and Joseph Pratt, *The Rise of the Corporate Commonwealth: United States Business and Public Policy in the 20th Century* (New York: Basic Books, 1988), 218-219.

22. These regulations were known as section 3809 rules, appearing under Title 43 of the Code of Federal Regulations.

23. Commission on Fiscal Accountability of the Nation's Energy Resources, *Fiscal Accountability of the Nation's Energy Resources* (Washington, DC: U.S. Government Printing Office, 1982), xv.

24. Commission on Fair Market Value Policy for Federal Coal Leasing, *Report of the Commission: Fair Market Value Policy for Federal Coal Leasing* (Washington, DC: U.S. Government Printing Office, 1984), 3.

25. Tom Lonnie, interview, 2010.

26. Laura Lindley, *Of Teapot Dome, Wind River and Fort Chaffee: Federal Oil and Gas Resources* (Fort Worth, TX: American Association of Professional Landmen, 1998), 21.

27. Tom Lonnie, interview, 2010.

28. Public Lands Foundation, *Land Exchanges of Public Lands Administered by the Bureau of Land Management*, Position Statement 2010-12 (August 2010).

29. Representative Pettis (CA), *Congressional Record* 122 (July 22, 1976): 23440.

30. Representative Seiberling (OH), *Congressional Record* 122 (July 22, 1976): 23465.

31. Carlos Mendiola, interview, 2010.

32. Bill Mitchell, interview, 2010.

33. Pat Durland, interview, 2011.

34. Public Rangelands Improvement Act of 1978, Section 2(a)(6), <http://www.gpo.gov/fdsys/pkg/STATUTE-92/pdf/STATUTE-92-Pg1803.pdf>.

## Chapter 2 | The Bureau Embraces Ecosystem Management, 1990–2000

America's evolving views of the environment, coupled with a growing consensus among scientists and land managers about the need to manage natural resources across larger areas, led the BLM to embrace the concept of ecosystem management. Putting the concept into action, however, required a fundamental change in the way the Bureau did business, a change that did not come easily.

### An Interdisciplinary Approach Guides the Planning Process

Changes in the BLM's resource management planning program helped bring a more holistic approach to public land management. Through the 1990s, the BLM used an interdisciplinary method to develop resource management plans. Resource specialists in field offices worked together to integrate resource data and—after extensive public input—propose management actions. Under the "old" way of planning, through management framework plans, specialists worked separately and competed to maximize the management and allocation of "their" resources, mirroring the thinking of traditional land users and their competing needs. At the end of the process, a manager had to resolve any resource or land use conflicts.

To implement the new approach, the BLM recruited additional staff with specialized skills in areas such as communication, problem solving,

conflict resolution, and partnership building. Use of new technology, such as geographic information systems and predictive modeling, greatly influenced the direction of BLM planning programs. New technical specialists were helping the BLM move toward using more integrated data collection and analysis to inform land use planning.

The BLM issued instructions to field offices in 1990 to focus on implementing approved plans, linking implementation to the budget process, and then tracking progress.<sup>1</sup> In 1991, however, a report commissioned by the Western Governors' Association found that both the BLM and U.S. Forest Service were "preoccupied with plan preparation to the exclusion of plan implementation." Robert A. Jones, a retired BLM planner, wrote a report for the Public Lands Foundation in 1993 that reiterated many of the findings of the Western Governors' Association report.

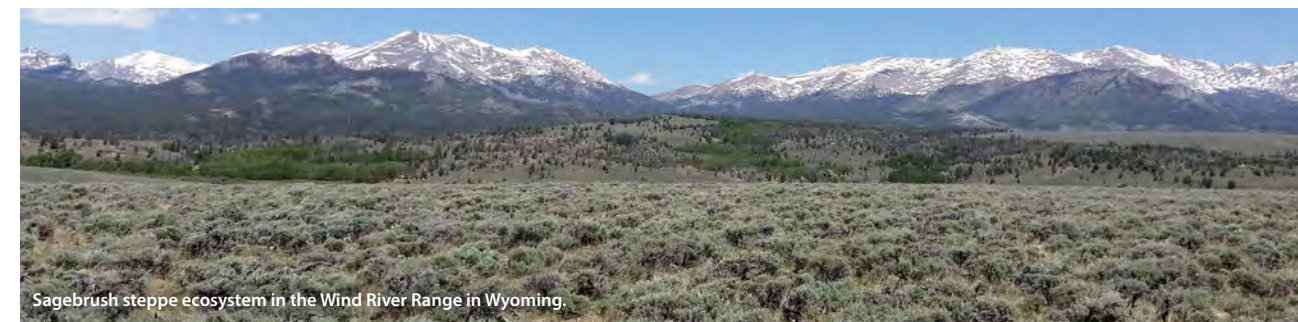
These findings reflected the ongoing challenge implicit in balancing the cost benefits of planning

against those of plan implementation and funding of other programs. The budget history of the BLM's planning program reflected the waxing and waning of these competing Bureau priorities in times of tight budgets and limited staffs.

In the mid-1990s, the BLM reorganized as part of a government streamlining effort and the pace of plan development slowed, due in part to competing work demands on BLM staff, many with collateral duties in other programs. The BLM discontinued special program guidance and planning handbooks as the administration instructed federal agencies to reduce government regulatory and guidance documents as part of the Reinventing Government initiative. The planning budget decreased by more than 30 percent in 1995.<sup>2</sup> Plan development was deemphasized as resources were devoted to plan implementation and to the emerging philosophy of resource management. Moving beyond traditional resource-by-resource approaches, the BLM began to focus on how to manage ecological systems as a whole.



Douglas Point Special Recreation Management Area in Maryland.



Sagebrush steppe ecosystem in the Wind River Range in Wyoming.

## Ecosystem Thinking Comes to the Public Lands | By Mike Dombeck

The adage that “ecosystems are not only more complex than we think, they are more complex than we *can* think” is as true today as when it was first stated. Yet in spite of its technical and scientific complexity, ecosystem thinking is founded on a basic concept: that natural processes and systems are intricately linked over broad expanses of space and time. In the 1940s, Aldo Leopold described ecosystem thinking as a land ethic that “simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land” and added that a human is a “plain member and citizen” of the land community.

The passage of the Federal Land Policy and Management Act (FLPMA), along with a litany of environmental legislation, came on a wave of public concern for the nation’s environmental well-being. Both FLPMA and the National Environmental Policy Act of 1969 set the stage for the integration of ecosystem thinking into multiple use management, which has transcended the administrations of several presidents and continues to evolve.

Implementing ecosystem management, like most major public policy changes, was gradual, with momentum increasing over time. The spotted owl controversy in the Pacific Northwest was the event that made all the difference by triggering many “groundbreaking” initiatives. The findings and recommendations of an interagency committee of scientists, and later the Federal Ecosystem Management Analysis Team (FEMAT), provided the foundation for the Northwest Forest Plan. The fact that the BLM and the U.S. Forest Service (FS) developed a single integrated plan based on science for a 24-million-acre land base was both phenomenal and unprecedented. While hindsight

tells us that not every facet of the plan worked, a number of policy initiatives and administrative thrusts resulted that have stood the test of time. In addition, the country’s two largest land management agencies worked more closely together than ever applying ecosystem principles over larger landscapes and across jurisdictions. Jack Ward Thomas, FS chief, and I (as BLM director) convened a joint national leadership team of the FS and BLM to push closer working relationships and colocation of offices.

The recommendations of FEMAT called for the integration of terrestrial and aquatic habitat management. PACFish and InFish, joint BLM-FS guidelines, were developed to protect salmon and inland fish habitats throughout the West. The National Riparian Service Team was established, led by Wayne Elmore (BLM) and Susan Holtzman (FS). Still full of enthusiasm over the completion of the Northwest Forest Plan, Thomas and I agreed to move forward in the development of the Interior Columbia Basin Ecosystem Management Project (ICBEMP). If successful, the entire Columbia River Basin would be under ecosystem-based management plans similar to the Northwest Forest Plan. However, ICBEMP quickly became very controversial, with many politically charged issues. The lesson learned was that social and political landscapes are not always ready for what makes the most sense from an ecosystem-based view.

Immediately after the 1994 elections, one of my tasks was to brief members of the Appropriations and Natural Resources Committees about ecosystem management. Some members did not like all the talk of ecosystems, ecosystem management, or biodiversity. So I began talking about healthy watersheds, native grasses, stable streambanks, and less soil erosion and could see their concerns subside. People are often skeptical of conceptual terms like ecosystems and biodiversity while they are comfortable with place-based terms they clearly understand, like watersheds and descriptions of healthy land. That prompted me to start talking about watersheds and the “health of the land.”

Secretary Bruce Babbitt was a major force in promoting science-based ecosystem management on the public lands. After I left the BLM to become chief of the FS in 1997, Secretary Babbitt and I began having monthly breakfasts, in part to encourage Interior agencies and the FS to work together even more closely in the spirit of ecosystem management.

The daunting challenges we face with climate change validate the basic concept of ecosystem thinking. They also prompt us to appreciate that not just public land but all land is connected, from mountaintop to valley floor, just as streams are connected from the headwaters to their deltas.

What greater evidence do we need for the importance of landscape conservation? As time marches on, the public lands—belonging to all citizens—will become an increasingly important component of the American landscape. The public lands may provide the last places of what the country was like when our forefathers first saw it, the last remaining wild places and open spaces that support healthy native plant and animal communities for the benefit of future generations. Perhaps the most important question we should ask ourselves today is what we want the land to look like in 50 years and 500 years, and the most important challenge we face is maintaining the health of the land.



Ecosystem connectivity within the Snake River watershed in Idaho.

Mike Dombeck.

During his federal career, *Michael “Mike” P. Dombeck* worked as a research and field biologist and held many leadership positions. He was the acting director of the Bureau of Land Management from 1994 to 1997 and the 14th chief of the Forest Service from 1997 to 2001.

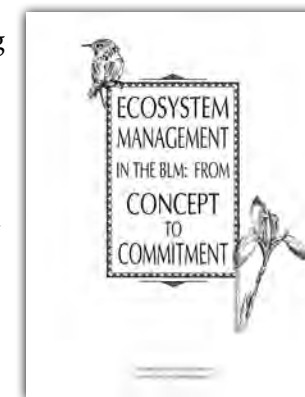
## Ecosystem Management Creates Challenges

The BLM’s movement toward an ecosystem management approach advanced in 1994 with the release of the report, “Ecosystem Management in the BLM: From Concept to Commitment.” The report defined ecosystem management as “the integration of ecological, economic, and social principles to manage biological and physical systems in a manner safeguarding the long-term ecological sustainability, natural diversity, and productivity of the landscape.”<sup>3</sup>

The key to this approach was the formation of interdisciplinary teams of BLM specialists working to integrate the many components of resource management for more comprehensive and holistic solutions. This approach produced more balanced and efficient management, maximized public benefits from the public lands, and ensured the sustainability of ecosystem services—including food and fiber, energy and minerals, and clean air and water—for the benefit of future generations.

In implementing ecosystem management, the BLM faced a variety of challenges. These challenges included data collection and management, changing resource conditions and new information, competition among interests, and continuing legal disputes.

As the BLM took on a succession of ambitious, large-scale planning and management initiatives through the 1990s and 2000s, approaches to



resolving these challenges became clearer. Some of these efforts fell short of their ultimate goals, but all served to advance the BLM’s progress toward more comprehensive and more effective resource management.

## A Threatened Species Influences Northwest Forest Management

The northern spotted owl, which the U.S. Fish and Wildlife Service listed in 1990 as a threatened species under the Endangered Species Act, profoundly changed the management of federal forest lands in the Northwest. The BLM had to manage 2.4 million acres of O&C forest lands and comply with the requirements of the act.

The owl’s listing brought conflicts over the future of federal forests in the Pacific Northwest to a head. The owl depended primarily on old growth, late-successional forest habitat, an integral part of the land base that the BLM managed for timber harvest.

Advocates and opponents of logging both staked extreme positions on conservation of the owl. The potential loss of timber sale revenue was of growing concern to the 18 O&C counties that depended on federal timber revenues to help provide services to local communities. Popular bumper stickers of this period proclaimed, “Kill a Spotted Owl—Save a Logger” and “I Like Spotted Owls—Fried.” Members of radical environmental groups such as Earth First! continued their efforts to disrupt timber harvests with tactics like driving metal spikes into trees marked for cutting, making it dangerous to mill the logs. Some chained themselves to trees, setting up the potential for violent confrontations.

In 1990, the U.S. District Court in Portland enjoined the BLM’s timber sales for the agency’s failure to prepare a supplemental EIS that considered new data on the habitat requirements and population demographics of the northern spotted owl. At the time, the land use plans prepared by the BLM from 1979 to 1983 collectively authorized harvests of 1,176 million board feet of timber a year. The BLM’s draft RMPs to incorporate the new science on the owl and other issues were nearing completion.

Faced with 44 timber sales suspended by the courts, BLM Director Cy Jamison, with the support of Interior Secretary Manuel Lujan, appealed to the Endangered Species Committee to consider the economic costs of halting the timber sales in 1991.

The Committee approved a handful of sales in 1992, with the proviso that the BLM would thereafter comply with the conservation strategy developed by an interagency scientific committee, including a requirement to abide by the “viability clause” of the National Forest Management Act. The clause was not required under any legal mandate on BLM-managed lands. It required the maintenance and protection of the diversity of plant and animal communities in national forests across their entire range.

Because of continued litigation surrounding these lease sales, the harvesting of timber from the sales exempted by the committee did not occur.



BLM Director Cy Jamison.



Youth firefighter volunteers in the Roseburg District in Oregon.

### Creating Options in Western Oregon | By Mike Benefield

It was the winter of 1994, and there was a war of sorts swirling in the lumber towns of western Oregon. The northern spotted owl had been listed as threatened under the Endangered Species Act 4 years earlier. At the same time, logging companies were relying more and more upon federal timber to make up for shortfalls in inventory on private company lands in the area, and the “county supremacy movement” to assert ownership rights to federal public lands was gaining momentum. At that time, I was serving as the assistant fire management officer in the Roseburg District.

Roseburg had once been known as the “Timber Capital of the Nation.” Now it was increasingly becoming an angry and frustrated community, where proud, hard-working people struggled to make sense of this new reality. Sensing this frustration and wanting to find solutions to help in some small way, I started thinking about what I could do to help my community. What did I have to offer within the parameters of BLM policy?

Then it occurred to me; I have my time and my experience. My 20 years in fire management might be useful. The local Roseburg District fire management organization was going to sponsor a 40-hour basic wildland firefighter training program for local high school juniors and seniors.

I designed a flyer advertising the training program and posted it at the local high school career center. It would be a 2-hour course on Tuesday and Thursday evenings, lasting for 10 weeks. I would

teach it all myself, on my own time, if I had to—but firefighting is inherently a profession of community service. It wasn’t long before volunteers stepped forward to donate their time to help teach. It wasn’t just the BLM that provided volunteer instructors, it was the Forest Service and the Douglas Forest Protective Association, too.

On the first evening, I was unsure how many students would even show up. After a full schoolday, these kids would have to commit to 2 extra hours in the evening, twice a week for 10 weeks. What was the payoff? With the Roseburg District management team in attendance, the first few young men and women filed into the conference room at the district fire office. By the time class started, there were 25 young, energetic faces ready to learn about wildland fire management and the agencies that are charged with making it happen. The management team welcomed the students and set the tone for the next 10 weeks.

By the time the 10 weeks had passed, 15 students graduated with a sound foundation in basic wildland fire management. Several of the seniors later went on to firefighting positions with agency and contract fire crews.

In the end, I don’t know if I did much to change the dynamic in my little part of Western Oregon during that tumultuous time, but I did see hope and the promise of a bright future in the eyes of some special young firefighters in the midst of some very hard times in their community.

*Mike Benefield* was the fire management officer for the Canyon Country Fire Zone, Moab, Utah, before retiring from the BLM.

### A Forest Summit Leads to the Development of the Northwest Forest Plan

The highly charged atmosphere surrounding forest management set the stage for the Northwest Forest Plan, an attempt to take a more holistic and interdisciplinary management approach on federally managed lands.

On April 2, 1993, acting on a promise made during his campaign, President Bill Clinton convened a forest summit with representatives from the logging industry, environmental community, and rural communities in Portland, Oregon, in an attempt to end the impasse over forest policy. At the close of the summit, the President charged a team of scientists to provide him with management alternatives within 90 days. The Forest Ecosystem Management Assessment Team’s task was to ensure the consideration of economic and social dimensions alongside issues of ecological health in a manner that would produce a sustainable level of timber harvest in the area.

The team, led by U.S. Forest Service research biologist Dr. Jack Ward Thomas, provided President Clinton with 10 options. The option selected by the President included “aggressive and active management” to ensure the achievement of timber harvest goals of about 1 billion board feet per year from U.S. Forest Service and BLM lands and the protection of more than 80 percent of the most significant old-growth forests. Federal agencies



President Bill Clinton.

worked with the team from April 1993 to April 1994 to create the Northwest Forest Plan, which addressed forest management on almost 25 million acres of federal forests in the Cascade and Coast Ranges of Oregon and Washington and in northwest California.

To drive coordinated implementation of the plan at the regional level, the principal agencies involved—the BLM, U.S. Forest Service, Environmental Protection Agency, and the National Marine Fisheries Service—created a Regional Interagency Executive Leadership Committee through a memorandum of understanding. The use of this type of high-level committee served as a model for agency collaboration that the BLM still uses today.

In all, the plan restricted about 2 million acres of O&C lands managed by the BLM to sustained yield harvest and management for other forest values. However, the remaining older forests, with mature growth and old growth, were to provide up to 90 percent of the timber harvests anticipated in the first decade of the Northwest Forest Plan.

The plan designated late-successional reserves to maintain existing old growth and manage younger stands to attain a tree size and stand structure resembling old growth. “Matrix” lands contained stands that agencies could manage for sustained timber production, except around spotted owl nests. The plan also identified adaptive management areas to test new management approaches integrating ecological, economic, and other social goals.

The plan contained a “survey and manage” provision, which required that, before any ground-disturbing activity could be carried out,

the agencies would survey for more than 400 covered species, and, if found, would manage them according to developed protocols. This usually required the establishment of large buffers around sites. As it turned out, the survey and manage provision was more difficult to implement and had a larger impact on management than accounted for in the plan analysis. This led to multiple attempts

by the BLM and U.S. Forest Service to modify the program; opponents challenged each attempt in court, where litigation on the issue had yet to be resolved as of 2012.

Ultimately, the Northwest Forest Plan failed to end the Northwest forest war.



Markers identifying a timber reserve boundary.



Timber harvest in western Oregon.



Forest lands in Oregon.

## The Road Less Traveled | By Gloria Brown

For Shakespeare's Hamlet, the question was, "To be or not to be?" However, in 1994, the question for me was, "Do I work for the Forest Service or the BLM?" At that time, I had completed my academic studies at Oregon State University to qualify as a "forester." After 20 years in administrative positions, the Forest Service offered me a line officer job, which was not to exceed 1 year. The BLM offered me the field manager position in Baker City, Oregon. I took the BLM job. It turned out that I was the first female African-American field manager ever hired in the BLM!

My career spanned from 1974 until 2007. During those 33 years, I can count on one hand the number of times that I was in a meeting in which there were other African-Americans. Even today, it is unusual to find an African-American female in a natural resource career, let alone as a forester. When I decided to go into management, I was definitely blazing a road less traveled by other African-American females. I had no role models. I wanted to be excellent in all of my endeavors, so I studied the professionals in the BLM.

Folks are always curious about my experiences—how I accomplished what I did and why I picked a career in natural resources when so few African-Americans were in the field. Most importantly, I did not dwell on the fact that I was an African-American female. If every move I made or every decision I delivered focused on that, I knew early on that I would spend a lot of energy on it, rather than focusing on being the best that I could be. The latter worked better for me.

To tell the truth, my biggest issue as an African-American in the agency and in my community—don't laugh—was my hair. In some of the rural places where I worked, I could not find "Black" hair products. That said, I learned to do my hair myself—biggest issue gone! Smaller issues cropped up from time to time. My temporary assignment in Silver Lake, Oregon, comes to mind. I was driving through in my private vehicle, checking out the area before reporting to duty as the acting district ranger. When I got to the end of town, I turned around. As I was driving back, a policeman in the middle of the road directed me to stop. He came over to the car and said, "You lost?" I said, "No." He said, "Well I saw you come through town and turn around; I thought you were lost." I said, "No, I'm not lost. I'm the new temporary district ranger, and I was just checking out the area before reporting in." The officer's jaw dropped. I'm sure he didn't realize how long it took him to speak, but it was well over a minute. Finally, he stumbled and said, "I . . . I thought you were lost. You . . . you know I know those folks over there. We . . . we play baseball with y'all. I'm, um, glad you're not lost. I, um, guess you need to be on your way. You take care now." In many of my first-time experiences meeting people, I found they were surprised, maybe even shocked, to find an African-American female living among them.

Most of my experiences confirmed that BLM and Forest Service managers are treated with respect. I found that if you communicate with and listen to people, and if you have a good reputation for knowing your job and making good decisions, people are willing to give you a chance. If you respect them, they respect you (regardless of color). I did not experience any outright prejudice. Employees and the public at large were more interested in how well I did my job than the color of my skin. The uniform and the position commanded respect. At the same time, the individual in the uniform had to earn that respect.

I attribute my success in the BLM to the professional employees who worked for me. Most were awesome and knew their jobs and the geographic area I was responsible for. The professional women in the BLM also contributed to my success. They are a close-knit group, and in joining them, I found advocacy, support, and advice. Many of these women have become lifelong friends of mine and have supported me on and off the job. Elaine Zielinski, who was a BLM state director in the Pacific Northwest, turned out to be my best role model.

I picked natural resources because I love the outdoors and being able to make decisions that make a difference in the environment and the communities we serve. I wanted one moment in time when I was more than I thought I could be. The BLM gave me lots of those moments that will last for an eternity.



BLM office in Baker City, Oregon. Photo by John Stanton.

*Gloria Brown* began her federal career with the Forest Service in 1974. She came to the BLM in 1994 as the field manager in Baker City, Oregon, and later became the branch chief for minerals and energy adjudication in the Eastern States Office. Gloria returned to the Forest Service in 1999 and retired in 2007.

## Science and Politics Merge in the Interior Columbia Basin

Along with the development of the Northwest Forest Plan, President Clinton also directed the creation of an even broader ecosystem management plan called the Interior Columbia Basin Ecosystem Management Project. The project encompassed BLM and U.S. Forest Service lands in eastern Oregon and Washington, Idaho, and portions of Montana, Nevada, Utah, and Wyoming.

The lands in the Interior Columbia Basin Ecosystem Management Project faced forest and wildlife health issues—and the associated litigation—similar to those of the Northwest Forest Plan. However, the scope of the project's goals, the breadth of the resource issues it attempted to reconcile, and the range of stakeholders it hoped to satisfy were far greater. The lands were also more diverse, encompassing shrub-steppe as well as forested lands.

The Interior Columbia Basin Ecosystem Management Project began with a scientific assessment of a 145-million-acre project area. The assessment addressed ecosystem health and function on a basinwide basis. The BLM and the U.S. Forest Service then used the assessment results to amend their land use plans in the basin. The agencies designed the assessment to allow land managers to incorporate assessment data into subregional plans, watershed analyses, and site-specific NEPA analyses. The assessment also incorporated adaptive management features, allowing flexibility to account for the results of ongoing monitoring and evaluation and ensure that management actions attained expected results.

The project incorporated an extensive effort to engage the public in the planning process. The BLM and the U.S. Forest Service held more than 200 public meetings in the basin to discuss the project and received more than 83,000 public comments.

The courts also considered the Interior Columbia Basin Ecosystem Management Project a much-needed solution to long-term problems of salmon and bull trout endangerment. Judge Robert E. Jones of the U.S. District Court in Oregon stated that he viewed the project as a potentially permanent strategy to address threats to these species from timber harvesting and other activities.<sup>4</sup>

But the size of the project was a two-edged sword. Martha Hahn, a former BLM state director in Idaho who served as the chair of the Interior Columbia Basin Ecosystem Management Project Executive Steering Committee, noted that the "figurative weight" of the project's products might be too much for local managers to work with effectively. "They need a local road map, and we could be dropping a world atlas on them."<sup>5</sup>

In 1997, two similar draft EISs were released, one for the eastern portions of Oregon and Washington and one for the upper Columbia Basin, covering parts of Idaho, Montana, Wyoming, Nevada, and Utah. The preferred alternatives of the two plans came under criticism from all sides. Environmentalists protested that the plans failed to protect rare species and their habitats. Timber and mining industries argued that the plan closed too many roads and increased fire risks. Due to the level of controversy, and the involvement of members of Congress, the agencies extended the

comment period on the Interior Columbia Basin Ecosystem Management Project to 335 days.

Congressional committees threatened to terminate the project in the fiscal year 1999 appropriations bills, effectively keeping management decisionmaking at local BLM and U.S. Forest Service offices through the traditional land use planning process. Ultimately, however, the congressional intervention was unnecessary.<sup>6</sup>

The agencies merged the two EISs, publishing a supplemental EIS in March 2000 and a final EIS in December 2000. Yet the effort still failed to satisfy the objections of Congress and stakeholders and to reconcile differing views of the federal agencies involved. In the end, the agencies did not sign a record of decision. Instead, in 2003, the Departments of the Interior and Agriculture published the "Interior Columbia Basin Strategy," which provided guidance for incorporating the scientific data and resource information developed from the project into individual RMPs.

The environmental movement and the legislative and judicial response to the movement affected more than just the BLM's forest policy. The new environmental laws and regulations had profound implications for virtually every facet of the Bureau's mission.



Interior Columbia Basin Ecosystem Management Project area.

## The Interior Columbia Basin Ecosystem Management Project | *By Cathy Humphrey*

What started out as a 3-week detail to facilitate public meetings across eastern Oregon and Washington ended up being 7 years of the most difficult but most rewarding job I've ever had. Much has been said about the Interior Columbia Basin Ecosystem Management Project, both good and bad, but I'd like to focus on a few of the positive things.

I went to Walla Walla (Washington) in early 1994, a couple of months after the Forest Service chief and BLM director signed a charter to develop an ecosystem management framework and assessment for their agencies' lands east of the Cascade crest in Oregon and Washington and within the interior Columbia River Basin. This was the first of many things we did right—writing a charter that clearly defined the geographic area, laid out our expectations, identified key participants and their roles, and described the products and timelines. We referred to the charter many times in the early months of the project. With a clear charter, there was no room for excuses.

Our project area was enormous—30 million acres of federal lands in eastern Oregon and eastern Washington (the entire project area encompassed 64 million acres of federal land). Our Tribal Liaison Group developed a consultation process with each of the 22 tribes in the area. The Eastside Ecosystem Coalition of Counties facilitated the involvement of 104 counties in parts of 7 states. We quickly learned what was important and how to relay it to agencies and organizations at all levels—from regional directors of federal agencies to interested individuals who use public lands. We showed maps and provided details for those who needed them.

Communication goals included bringing scientists, land managers, and the public into a close, working partnership; working openly; and developing a common understanding of ecosystem management. We began by defining ecosystem management. We taught concepts (such as the hydrologic system and carbon cycle), and we debated definitions. We took every opportunity to bring everyone up to speed so we could have meaningful discussions.

*Cathy Humphrey* was the deputy EIS team lead for the draft, supplemental draft, and final EISs for the Interior Columbia Basin Ecosystem Management Project. She was also the planning/NEPA training coordinator at the BLM National Training Center and is currently a collaboration and dispute resolution specialist for the BLM's Washington Office.

We tried new things. To keep the public involved in rapidly changing discussions, we invited them to watch the Science Team deliberate when they met in Walla Walla. The scientists weren't used to showing their "sausage-making," and the public wasn't used to how slow and excruciating the progress could be. But the process bought us some trust. And in time, folks were satisfied with monthly updates from the Science Team leader.

We scheduled hundreds of meetings in dozens of locations. The meetings had agendas, but we were flexible. If we wanted to split people into small groups, but they wanted to stay together, we let them. We respected them—when Earth First! members came to a meeting dressed as woodland animals, we called on the chipmunk in the back during question and answer time. We listened.

The rules kept changing—prepare one environmental impact statement (EIS) for the Eastside (eastern Oregon, eastern Washington); prepare two EISs (Eastside and Upper Columbia) at different times with different alternatives; prepare two EISs at the same time with similar alternatives or exactly the same alternatives; and finally, prepare one EIS covering both geographic areas.

The Forest Service's original direction to "develop a scientifically sound, ecosystem-based strategy for management of eastside forests" turned into the Forest Service and BLM developing the strategy, steered by 13 directors from 5 agencies (the Forest Service, BLM, Environmental Protection Agency, National Marine Fisheries Service, and U.S. Fish and Wildlife Service) and 2 Forest Service research stations. Those of us who lasted the longest learned not to sweat what we didn't have control over and to do the best job on what we did control.

My little group guided the look and feel of the EIS. We added pull quotes, included a diagram of the carbon cycle, and put summary bullets at the beginning of several chapters. We wrote management guidance (objectives and standards) and included our rationale—this helped quell many arguments. We made the EIS better.

We had the right idea, we had the funding, and we had the right people. But the scale was huge, the politics contradictory, and the concepts too complex to understand easily (and therefore trust). The project was also caught between two administrations.

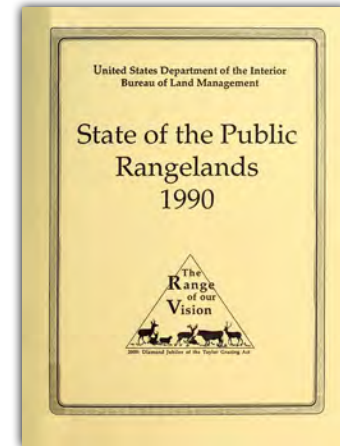
By December 2000, we'd answered the protests and written the proposed record of decision (ROD). Then, a new administration took office on January 20, 2001. Two years later, in a February 19, 2003, news release, the agencies announced a strategy to use the findings from the project's Science Team along with new information to "update land use plans for National Forests and BLM lands in the four-state region." This approach placed decisionmaking at a more local scale.

We did not get a signed ROD, but we did gain valuable experience. We learned firsthand that by using a coordinated interagency approach to planning and decisionmaking, managing risks and opportunities does not need to be limited by agency boundaries. Now our broad-scale understanding of aquatic and terrestrial landscapes, and of social and economic aspects of a given area, provides context for better land management at the appropriate scale.

## Rangeland Conditions Improve

For the BLM range program, applying ecosystem management involved a more site-specific inventory and assessment of rangeland resources and a planning approach that put a broad range of public uses and values on equal footing with the traditional use of livestock grazing. While no longer considered a "predominant use," livestock grazing continued to be the predominant issue in rangeland management throughout the decade.

In 1990, BLM Director Cy Jamison responded to the 1988 General Accounting Office report on declining range conditions with a new initiative called "State of the Public Rangelands 1990: The Range of Our Vision." The initiative set goals for restoring BLM riparian wetlands, increasing the amount of rangelands in good or excellent condition, and decreasing the amount of rangelands in poor condition. Another goal of the program was to bring 75 percent of BLM riparian wetlands into good or excellent condition "to provide a wide variety of forage and habitat diversity for wildlife, livestock and watershed protection" by 1997.



## The Bureau Releases "Rangeland Reform '94"

During a speech to the National Press Club in the early months of his tenure, Interior Secretary Bruce Babbitt declared that the days of "unrestrained,

giveaway, environment-be-damned" public land management were over. They gave way to a "new American land ethic" under which commodity uses of the public land were governed with a new respect for environmental concerns and fair market values. Foremost among his targets for reform was livestock grazing.<sup>7</sup>

Secretary Babbitt's proposed grazing reforms included increasing the grazing fees from \$1.86 to \$4.28 per animal unit month and penalties, including potential loss of grazing permits, for abuse of ecological resources. In the face of stiff opposition from western lawmakers, the administration scaled back its proposals, but a series of Senate filibusters prevented Babbitt's proposals from becoming law. As Frank Clifford, an environmental writer for the Los Angeles Times, colorfully opined, "In most Western communities, his plan had all the appeal of hoof-and-mouth disease."<sup>8</sup>

The following year, Secretary Babbitt pressed on with the effort through another approach, implementing "Rangeland Reform '94" through revisions in BLM grazing regulations. The reform package reflected further concessions designed to win acceptance among the ranching community. The new reform package featured the development of environmental standards and guidelines for livestock grazing—the first ever imposed on public lands grazing. It also featured the creation of citizen resource



advisory councils (called RACs), representing livestock interests, conservation interests, and the general public, to participate in the design of standards and guidelines. Additionally, the proposal provided authority for environmental groups to buy grazing permits and "rest" their allotment for conservation purposes. Far from heralding an end to the long-running dissension over grazing administration, "Rangeland Reform '94" ignited a new wave of controversy, along with legal challenges that continued over the next two decades.

## Council Challenges Reforms

In July 1995, the Public Lands Council, representing a variety of livestock associations, filed suit in federal district court in Wyoming to challenge Secretary Babbitt's authority to implement the grazing reforms. The Supreme Court ultimately decided the suit with a unanimous ruling in May 2000 that affirmed the authority of the Secretary of the Interior to implement the provisions of "Rangeland Reform '94"—with one notable exception. The Supreme Court upheld an earlier appeals court ruling that the Secretary's authority did not extend to allowing conservation interests to acquire grazing permits for the purpose of halting grazing.

By the end of the decade, the BLM had implemented the new standards and guidelines for grazing, further institutionalizing the interdisciplinary nature of range management.





## The First Resource Advisory Council Meeting—The First Broadcast | *By Chip Calamaio*

On September 21, 1995, the BLM was on the cutting edge.

Across the West, all of the newly formed Resource Advisory Councils (RACs) held their first meetings on that Thursday morning, and they were all linked together by the first live satellite broadcast originating from the new BLM National Training Center (NTC) studios in Phoenix, Arizona. It was the first time live, interactive, satellite technology was used on a national basis within the BLM and the Department of the Interior, and it was the first time television communications were used in real time to reach BLM's stakeholders and public land customers to roll out a major new initiative.

"Reaching Common Ground" was hosted by BLM Montana State Director Larry Hamilton and featured Secretary of the Interior Bruce Babbitt, Acting BLM Director Mike Dombeck, BLM Montrose (Colorado) District Manager Mark Stiles, and Carol Anderson, a member of the newly formed Arizona RAC. The telecast was staged as an informal talk show. In addition to presentations by the panelists, a prerecorded video by Mark Stiles was shown on the critical role of the RACs in working with the BLM to develop the standards for rangeland health and guidelines for grazing management as called for under the new grazing regulations. Much of the air time was used for RAC members in the field to ask questions and discuss issues with Secretary Babbitt and BLM's leaders via live telephone calls and faxes.

The idea of using a live, national, satellite broadcast to kick off the first RAC meetings was developed by Todd Christensen, an NTC training coordinator, and Mike Penfold of BLM's Washington Office gave the concept the green light. Under the leadership of NTC's director, Gary Dreier, video producer Chip Calamaio and the NTC media team went into high gear building a studio set and collaborating with contractors to work out the hi-tech mechanics of producing 3 hours of live

television for the very first time. Stress and anxiety levels ran high since everything from crew assignments and the broadcast script format had to be developed completely from scratch—and with something as high profile as the national RAC rollout with the Secretary of the Interior, failure was not an option! To ensure success, several weeks before the live telecast, BLM managers and RAC meeting facilitators all came together at the NTC to develop the facilitator agenda and content for the first RAC meetings. Everyone also learned about the logistics and technical aspects of the satellite broadcast and the contingency plans if some part of the satellite transmission system failed.

Since BLM offices were not yet equipped with satellite downlink systems, some offices rented portable dishes on trailers to host the RACs; others went to community colleges, hotels, and other facilities that had C-band satellite systems. Satellite downlink arrangements were made at 15 different locations in the West where RAC members could participate in the live broadcast. The word was that one RAC in Montana met at a local sports bar and arranged to have NTC's broadcast signal tuned in instead of the normal football feeds.

When the red light flashed on, the event came off like clockwork. Once media-savvy Bruce Babbitt determined which studio camera was "his," he maintained eye contact with that camera and engaged in a very personal dialog with RAC members. He explained the role of the RACs and how the BLM and the Department of the Interior were changing the way our public land customers would be involved in resource management issues and long-term planning efforts.

During interactive segments, all 12 phone lines were constantly lit up, and three fax machines kept humming away, pushing out questions sent to the NTC studios from RAC members. Host Larry Hamilton did a masterful job of facilitating a fast-paced discussion among RAC viewers and the studio panelists. Behind-the-scenes staff made sure that every RAC location had an opportunity to get at least one question to the panelists during the telecast. In the closing minutes of the broadcast, a question from the last RAC group came in over a crackling phone line. Apparently, a BLM staffer had to leave the RAC downlink site in a bar, jump into a pickup, and drive down to a gas station phone booth to call in the question.

"Reaching Common Ground" was an unqualified success. After the program concluded, NTC Director Gary Dreier walked past the control room and said matter-of-factly to the crew, "Well, this was just the first of many." As a high-stakes "pilot," the "Reaching Common Ground" broadcast validated the concept of using satellite technology in the BLM for training and communications. Within the next 12 months, almost every BLM office had installed a permanent satellite downlink system, and within the next 15 years, more than 300 live broadcasts were produced out of the NTC studios.



*Chip Calamaio* started in 1985 as the BLM's instructional television specialist. Over the years, he was influential in creating the BLM Satellite Network, establishing the National Training Center facility, and developing BLM's numerous distance learning delivery methods.

## Fish and Wildlife Habitat Improvements Help Restore Populations

Under the umbrella of the "Fish and Wildlife 2000" strategy, the BLM worked with partners to develop 18 more specific plans. These plans addressed habitat for threatened and endangered fish, special status plants, anadromous fish, waterfowl, desert tortoise, and bighorn sheep. They also introduced programs such as "Bring Back the Natives," to rehabilitate river systems and promote native aquatic species and "Watchable Wildlife" to respond to growing public interest in birdwatching, nature study, and photography. Other plans aimed to establish a public/private partnership for the conservation of nongame migratory birds and to implement a program directed at restoring and maintaining wetlands.

Under "Fish and Wildlife 2000," the BLM's budget for these areas increased from \$16.3 million in 1987 to more than \$34 million 5 years later. In 1991, as evidence of its increasing emphasis on the conservation of federally listed species, the BLM allocated \$7 million to the protection of threatened and endangered species. In 1992, the BLM's Challenge Cost Share funding of \$3.25 million was leveraging \$4.8 million in partnership support.

That same year, the BLM launched an effort with the U.S. Fish and Wildlife Service to restore populations of the black-footed ferret—one of the most rare mammals in the world. The program began with the release of captive-bred ferrets into the wild in the Shirley Basin of Wyoming. Through the program, the agencies returned the ferrets to ranges in eight states and in northern Mexico. Over time, Arizona, South Dakota, and Wyoming achieved self-sustaining populations.

In the Vale District of Oregon, the BLM reintroduced sharp-tailed grouse in a joint project with the Oregon Department of Fish, Game, and Wildlife and the U.S. Forest Service. The Bureau reintroduced wild turkeys in New Mexico's Laguna Seca Special Management Area. In Idaho, the BLM reseeded more than 14,000 acres of sage-grouse habitat burned by wildfire. And in Boise, Idaho, a partnership among the BLM, Boise State University, Peregrine Fund, and others established the Raptor Research and Technical Center (now the Raptor Research Center) to help guide the management of the Snake River Birds of Prey Area. In Arizona, Idaho, New Mexico, and Oregon, the BLM worked with partner organizations to restore populations of threatened fish species such as the desert pupfish, redband trout, Gila topminnow, and Rio Grande cutthroat trout.

In 1996, for the first time in more than 70 years, California condors were flying high and free above the BLM lands of the Colorado Plateau in Arizona. The return of the magnificent, endangered bird was the result of a collaborative effort by the BLM, U.S. Fish and Wildlife Service, Arizona Game and



Fish Department, and others to reintroduce the California condor to the wild.

By the late 1990s, the BLM had helped develop and implement recovery plans for more than 75 threatened or endangered species. The Bureau was also focusing on early conservation measures to protect declining species with the goal of avoiding the need for listing under the Endangered Species Act.

## "Riparian-Wetland Initiative for the 1990s" Establishes Restoration Goals

The BLM's "Riparian-Wetland Initiative for the 1990s" established a goal of restoring and maintaining riparian areas and wetlands to bring 75 percent of the areas into proper functioning conditioning by 1997. The initiative focused on avoiding or mitigating disturbance of these resources, acquiring privately held lands with exceptional ecological values, and expanding public and private partnerships.

By 1993, the BLM had established 10 "showcase areas" that were illustrating the potential successes of the riparian-wetland initiative. These included the Consumnes River Preserve in central California, Alder Creek in Colorado, Sage Creek in Montana, and Carrizo Creek in New Mexico.

In Nevada, the BLM acquired 54 miles along the Marys River and worked in partnership with area ranchers to adjust grazing patterns along the river to begin restoring populations of the endangered Lahontan cutthroat trout. In places like Muddy Creek in Wyoming, Clover Creek in Idaho, and Jenny Creek in Oregon, the BLM forged partnerships with stakeholders to record

other successes in riparian restoration. Through land exchanges, the BLM acquired lands for southern Arizona's San Pedro Riparian National Conservation Area and acquired the historic Empire and Cienega Ranches that formed the Las Cienegas National Conservation Area. Other key land exchanges in the early 1990s included acquisitions for New River coastal wetlands in Oregon and California's Big Morongo Canyon Preserve.

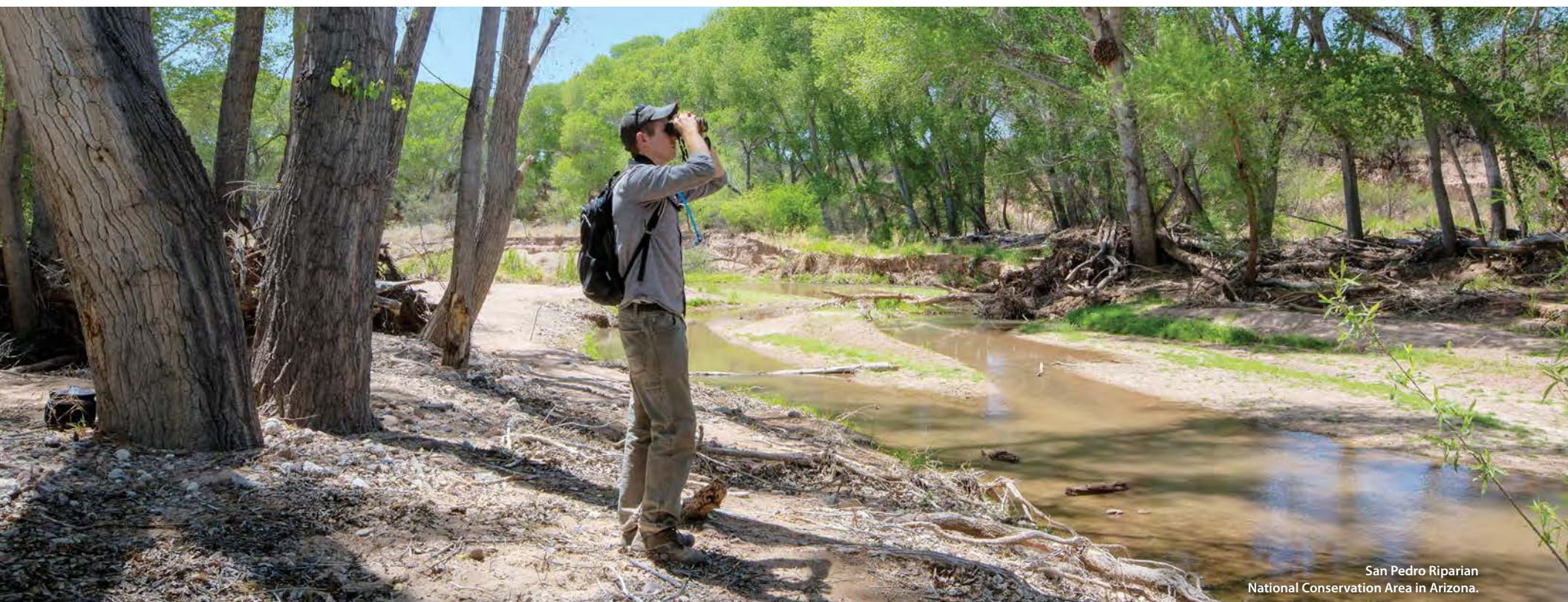
The BLM began assessing the functioning condition of riparian and wetland areas in 1990, and by 1996, implemented restoration measures on nearly 300 riparian projects and conducted maintenance on about 500 more. This work resulted in improvement of approximately 7,600 acres of wetlands, both

in terms of their functioning condition and the structural diversity of riparian vegetation. By 1997, the BLM reported 78 percent of riparian areas and 79 percent of wetlands were in proper functioning condition.<sup>9</sup>

The BLM was also working to improve water and soil quality and reduce soil loss and erosion on nearly 6,000 sites across the West. The Bureau applied on-the-ground vegetation and land treatments on 6,700 acres and applied prescribed fire to tens of thousands of acres to improve watershed values and habitat.

During the 1990s, the Bureau made a significant contribution to an interstate and interagency program to improve water quality on the Colorado

River by reducing the introduction of salts into the river system. Congress had mandated the program in 1974 to benefit the millions of U.S. citizens who depend on the Colorado River for agriculture and to honor treaty obligations with Mexico, whose citizens also depend on the Colorado River. The BLM's role in the program included treating vegetation through prescribed fire, stabilizing soils, plugging abandoned oil and gas wells, and improving management of grazing, riparian areas, and off-road vehicle use. By 1999, the Bureau's efforts had prevented approximately 43,000 tons of salt from entering the waters of the Colorado River system.



San Pedro Riparian National Conservation Area in Arizona.

### The Evolution of Aquatic Resource Management in the BLM | By Mike Crouse

I was hired by the BLM in the late 1970s to help prepare environmental impact statements (EISs) mandated by the National Environmental Policy Act and settlement of the 1974 Natural Resources Defense Council lawsuit, which required the BLM to assess the impacts of grazing. At the time, I was the first BLM fisheries biologist east of the Cascade Mountains in Oregon and Washington. With a small crew, or sometimes alone, I conducted some of the first systematic assessments of fish and aquatic habitats for hundreds of miles of streams. I fondly remember several field seasons of camping out and surveying streams by foot, horseback, and helicopter. More than once, I returned on the weekends with my wife and young sons to show them some of these beautiful and remote areas.

The fish and aquatic habitat information gathered during these surveys was included in numerous grazing EISs and used in records of decisions that called for significant changes in grazing practices, especially in the Trout Creek Mountains of southeastern Oregon. At that time, the concept of riparian area management was relatively new, and stream bottoms were often heavily impacted by summer-long grazing. Area range conservationists were essential to implementing actions to protect and improve streams and riparian areas because they had the trust of local ranchers. With their support, dozens of miles of stream habitat for the threatened Lahontan cutthroat trout were excluded from livestock grazing using rim and water-gap fencing. The ecological response within these enclosures was truly miraculous. Grasses, sedges, willows, and even long-absent aspens flourished, streambanks healed, channels narrowed and deepened, water temperatures became cooler, and trout populations expanded. This network of stream enclosures later served as the foundation of watershedwide grazing systems promoted by the Trout Creek Mountain Working Group.

Increasing awareness and an emphasis on riparian and aquatic resources on public lands came to fruition in the early 1990s. In response to information documenting broad declines in naturally reproducing Pacific salmon, steelhead, and bull trout and widespread degradation of the habitat upon which these fish species depend, the Forest Service and BLM adopted a comprehensive aquatic conservation strategy (ACS) throughout the Pacific Northwest. Commonly referred to as PACFISH, the ACS established stream corridors along fish-bearing streams and

important tributaries in which strict standards and guidelines were applied to regulate land-disturbing activities, including grazing, mining, and timber harvesting. In addition, the ACS required that field units conduct watershed-scale analyses to ensure that the most critical aquatic habitats were considered in planning for land management and restoration actions. This ecosystem-based ACS was also a key component of both the Northwest Forest Plan and the Interior Columbia Basin Ecosystem Management Project (ICBEMP). As a senior manager with BLM, and later with the National Marine Fisheries Service, I had the privilege of working with a dedicated group of interagency managers and biologists to facilitate the implementation of these ACS on the ground and to streamline the consultation process for anadromous fish and bull trout listed under the Endangered Species Act.

To promote the "riparian revolution" on public lands beyond the range of anadromous fish and bull trout, BLM Director Mike Dombeck and Forest Service Chief Jack Ward Thomas established the National Riparian Service Team, led by Wayne Elmore, in 1996. The conceptual centerpiece of the NRST's work is the proper functioning condition (PFC) assessment, which uses a variety of criteria to determine the ecological potential of a stream and watershed and measures it against current conditions. Then the team helps field units design management prescriptions to move the watershed toward PFC.

Today, these approaches still serve as cornerstones for the management of aquatic and riparian habitats on BLM and Forest Service lands in the West.



Southeast Oregon fish survey (1980).



Helicopter dropping off a stream survey crew in Little Owyhee River Canyon in southeast Oregon (1980).

During his 20 years with the BLM, *Mike Crouse* was a fisheries biologist in Vale, Oregon; the national fisheries program manager in Washington, DC; and the chief of biological resources for the Oregon/Washington State Office. He also worked for several other federal agencies during his 36-year career.

## The War on Weeds Gets Underway



Yellow star-thistle.

The rapid spread of noxious weeds—advancing at a rate of thousands of acres per day in many parts of the West—posed another threat to the health of entire ecosystems. By the mid-1990s, the BLM estimated that noxious weeds had invaded more than 8 million acres of public lands.

In 1994, the BLM and the U.S. Forest Service led the formation of the Federal Interagency Committee for the Management of Noxious and Exotic Weeds. The committee united 16 federal land management agencies to facilitate cooperation, provide an integrated ecological approach to the management of noxious and exotic weeds on federal lands, and provide technical assistance for applying the approach on private lands.

Two years later, in January 1996, the BLM launched “Partners Against Weeds: An Action Plan for the Bureau of Land Management,” to prevent and control the spread of noxious weeds on BLM lands through cooperation with partners. The Bureau designated four weed demonstration areas in Idaho, Montana, Oregon, and Utah to highlight best management practices for combating weeds through cooperative efforts and partnerships. Each BLM state had developed at least one weed pilot project involving partnerships at the local level.

On February 3, 1999, President Clinton stepped up the campaign with an Executive Order that officially established the National Invasive Species Council to provide leadership for the ongoing war on weeds and enhance coordination among the 13 departments and agencies involved.

## Abandoned Mine Cleanups Recover Lost Landscapes

In the 1990s, increasing activity on the public lands and wider use of motorized vehicles in remote locations were more frequently bringing the public into contact with hazardous sites on the public lands. The hazards included tens of thousands of abandoned mine sites with dangerous mine shafts and potential contaminants in the soil, water, and air.

Working with federal, state, and local partners, the BLM spearheaded an effort to clean up these sites. From 1993 to 1995, the BLM identified more than 6,600 abandoned mine safety hazards and nearly 900 environmental hazards. The Bureau and its partners carried out remediation measures at more than 800 of the highest priority sites.

The BLM was also making progress in the cleanup of other sites where hazardous materials presented a threat to public health and safety. Working with the Environmental Protection Agency and others—including potentially responsible parties, people who may be liable under the Superfund law for contaminating the land—the BLM cleaned up hundreds of these sites. One of the priority efforts of this period was the former Monite Explosives Factory, a hazardous materials site near Sparks, Nevada, where the BLM fenced off contaminated land, then removed and destroyed thousands of cubic yards of materials contaminated by trinitrotoluene (TNT) and its derivatives.



Abandoned mine inventory in Nevada.

## “Recreation 2000” Ushers In New Programs and Sites

The BLM’s recreation program, energized by its strategic plan, “Recreation 2000,” ushered in the Back Country Byways, Adventures in the Past, and Fishing Partners . . . with You! programs. These programs promoted broader public appreciation for the recreational opportunities of the public lands and invited greater numbers of visitors to these lands. In 1990 and 1991, the Bureau hosted 44 recreation showcase projects that included

dedications of wild and scenic rivers, national conservation areas, wilderness areas, and back country byways.



Guadalupe National Back Country Byway in New Mexico.

By 1992, the BLM was managing more than 300 special recreation areas. Through “Recreation 2000,” the BLM had acquired tens of thousands of acres of land with unique recreation values, including parcels along the New River in Oregon, the Clearwater River in Idaho, and the popular whitewater rafting area of Westwater Canyon on the Colorado River in Utah.

Congress also established the Recreational Fee Demonstration Program in 1996, allowing agencies to return recreation fees to the sites from which they were collected and to use them for maintenance and improvements. The program started in 1997 with 10 sites collecting \$419,000. By the end of the decade, 100 sites were generating \$6.5 million in additional recreation funds.

## The Fortymile National Wild and Scenic River | By Gene Ervine

The Fortymile is the longest river in the National Wild and Scenic Rivers System, but it also happens to have played a critical role in the history of Alaska and the Yukon Territory. The 1886 discovery of gold on the river’s Franklin’s Bar touched off Interior Alaska’s first gold rush. The mining boom ushered in a wave of settlement that forever changed the place, not only for its new residents but also for the Athabascan Indians who occupied this region long before them.

Prospectors mined more than a half-million ounces of gold from the Fortymile River. During the heyday of Fortymile mining, the community of Steele Creek, located on the main overland trail between the towns of Chicken and Eagle, served as a community center and transportation hub. At one time, it included a trading post, a post office, a restaurant, several cabins, and a two-story roadhouse, some of which still stand on the site.

In 1896, when gold was discovered on Rabbit Creek near present day Dawson City, Fortymile miners streamed across the border to stake their claims, laying the foundation for Canada’s great Klondike gold rush in the Yukon Territory. The whole complexion of the region changed quickly after that, and Alaska was catapulted into national prominence. Adventure stories and gold rush poetry captured the public’s imagination. Photographs and moving pictures continued to promote the country’s remote frontier.

In 1899, just across the international border in American territory, the United States Army established Fort Egbert at the trading post of Eagle on the Yukon River. In 1903, the Washington Alaska Military Cable and Telegraph System (WAMCATS) was completed, linking Alaska to the rest of the world. That system quickly demonstrated how important communications were for the booming territory.

Today, the Fortymile River is shared by recreational rafters and canoeists, placer gold miners working federal claims, and suction dredge miners working the State of Alaska’s claims on the bottom of the river. Managing a wild and scenic river as part of a working landscape presents some interesting challenges as BLM’s National Landscape Conservation System matures. The Fortymile caribou herd and nesting raptors provide additional challenges and opportunities for scientific investigations and management.

*Gene Ervine* started with the BLM in 1990 as a resource interpretive specialist in the Alaska State Office. Working together with a variety of field office employees, he developed an award-winning interpretive program for Alaska.



Steele Creek Roadhouse next to the Fortymile River (1925).

The roadhouse in recent years.

Fortymile Wild and Scenic River in Alaska.



Volunteer Chuck Williams documenting Native American pictographs at Red Spring. Photo by Barron Haley (Friends of Red Rock Canyon).



FORRC member Klaus Cobb removing graffiti from the Lost Creek rock shelter. Photos by Pat Williams (Friends of Red Rock Canyon).



REI and FORRC teaming up on the first Make a Difference Day in 2005 to revegetate the area after summer wildfires. Photo by Markian Rekshynskyj (Friends of Red Rock Canyon).

### Leading by Example: Volunteers and Friends Groups! | By Dave Hunsaker

In 1986, after working for the BLM for 12 years, I moved from Oregon to Nevada to become the new supervisory outdoor recreation planner for the Stateline Resource Area in the Las Vegas District. I was responsible for the wilderness, recreation, off-highway vehicle, and cultural resource programs for the resource area, and I was also the manager of Red Rock Canyon Recreation Lands, which is now Red Rock Canyon National Conservation Area.

At the time, the Red Rock Canyon Visitor Center was open only 4 days a week, while the scenic loop drive was open all week. It was clear that we were behind the eight ball in terms of offering the interpretive, educational, and safety services that the public was coming to expect. With a little help from Senator Harry Reid, the budget for Red Rock Canyon was increased to allow operation 7 days a week. The BLM also successfully completed a significant three-way land exchange with the Howard Hughes Corporation and The Nature Conservancy, which allowed for increased protection of Red Rock Canyon while accommodating the ever-expanding city of Las Vegas.

As interest in the area grew, we realized that we needed significantly more help. This situation was not relegated solely to us in southern Nevada—public expectations, especially for quality outdoor recreational opportunities, were on the rise throughout the BLM, and the California Desert Conservation Area was right next door. Red Rock Canyon’s chief interpreter at the time, Joel Mur, had an idea to increase the public’s involvement in managing the area.

While the BLM had involved the public in myriad ways throughout the years, there was no established national policy regarding the use of volunteers or nonprofit organizations. The BLM had not yet considered the formation of friends groups or other support groups. At the time, we did have a contractual agreement with the Southwest Natural and Cultural Heritage Association for sales of interpretive materials in the Red Rock Canyon Visitor Center. They provided inventory, furniture and shelving, and a part-time salesperson at the front desk. What Mur and the area manager, Bill Civish, had in mind was far and away bigger than that.

In 1984, the Friends of Red Rock Canyon (FORRC) tentatively took shape. Over the next year and a half, Civish and Mur met with a small, temporary, startup group of interested folks with varied backgrounds, including a lawyer, an accountant, and a community activist. From that

effort, the BLM’s first organized, nonprofit support group was formed (under section 501(c)(3) of the Internal Revenue Code). In 1986, we completed the agency’s first cooperative management agreement with a group organized solely to support the BLM’s mission. Soon, thousands of hours of volunteer time, goods, and services were donated annually.

Today, FORRC members continue their commitment to preserve, protect, and enrich Red Rock Canyon National Conservation Area. The organization now does all the things that the BLM could only dream about more than 25 years ago, including removing graffiti, picking up trash, maintaining trails and the visitor center grounds, leading hikes, staffing the information desk, monitoring cultural sites, sponsoring an annual art show, and participating in community events. In addition, the organization provides more than \$100,000 annually for program support, volunteer and staff training, and supplies and equipment.

In a very real sense, the FORRC provided a roadmap for the BLM to work with others who desired personal involvement in managing public lands. The FORRC example led to countless other successful groups, including Trail Tenders, Inc., in Baker City, Oregon (National Historic Oregon Trail Interpretive Center-Flagstaff Hill); Grand Staircase-Escalante Partners in Kanab, Utah (Grand Staircase-Escalante National Monument); Friends of the Desert Mountains in Palm Desert and the Coachella Valley, California (Santa Rosa and San Jacinto Mountains National Monument); Pompeys Pillar Historical Association in Billings, Montana (Pompeys Pillar National Monument); Friends of the Cascade-Siskiyou National Monument in Ashland, Oregon (Cascade-Siskiyou National Monument); Anza Trail Coalition in Tubac, Arizona (Juan Bautista de Anza National Historic Trail); El Camino Real de Tierra Adentro Trail Association in Las Cruces, New Mexico (El Camino Real de Tierra Adentro National Historic Trail); Snake River Raptors in Boise, Idaho (Morley Nelson Snake River Birds of Prey National Conservation Area), and many others.

Partnerships of this nature are crucial to the management of public lands and are a window into the future of public involvement. The benefits of partnerships run both ways. Not only do these groups and individuals provide valuable services to help the BLM accomplish its work, but these relationships provide opportunities for greater awareness, understanding, and support of the BLM and public lands and create a win-win-win scenario for the public, the BLM, and the land.

Dave Hunsaker worked in natural resource management for 41 years before retiring in 2010 as BLM’s associate state director in Colorado. Dave was also the deputy director for the National Landscape Conservation System in the Washington Office; manager of the Grand Staircase-Escalante National Monument in Kanab, Utah; and manager of the National Historic Oregon Trail Interpretive Center-Flagstaff Hill in Baker City, Oregon.

### Cultural and Paleontological Resources Comprise the “Great Outdoor Museum”

BLM public lands, with their millions of cultural artifacts, fossils, and bones, are essentially a “great outdoor museum,” providing a forum for learning about the history of those lands, the people who lived upon them, and the animal and plant life they supported.

### Who Owns Big Al? | By John P. Lee

On the afternoon of Friday the 13th in September 1991, the BLM cadastral survey staff in Wyoming was asked to perform a boundary survey immediately. Richard (Dick) Kohler was selected as the BLM cadastral surveyor, and he and his survey crew were notified to come to work on Monday prepared to go out of town. They did not know where they were going, just that they needed to be ready to be gone for a week.

First thing Monday morning, there was a flurry of activity. At the Wyoming State Office in Cheyenne, survey records were researched and instructions prepared. This was happening as Kohler and his crew loaded up their surveying equipment and headed out from Gillette, Wyoming. Their instructions and survey records were faxed to the Buffalo Field Office so they could pick them up there. They then drove over the Bighorn Mountains to Shell, a small town 15 miles east of Greybull.

The week before, an astute field crew from the Worland District Office noticed a newly graded road taking off from the public road. They followed this dirt road to the end, where they found that a crew had been excavating a paleontological site. The crew was led by a fossil hunter from Switzerland, who had found the fossil of a dinosaur. They believed they were digging on private land. After checking maps and aerial photographs, the BLM staff was still uncertain about the ownership of the land where the site was located.

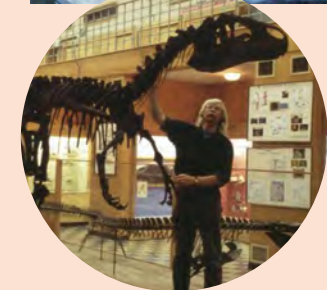
The Worland Field Office then contacted the Wyoming State Office. Law enforcement and cadastral survey staffs were brought into the discussion. Two special agents from Cheyenne drove to the site on Saturday to safeguard it from fossil removal. The survey crew arrived on the scene Monday, and was able to locate the necessary survey corners to determine the ownership of the site. Luckily, a portion of that township had been resurveyed in 1942, and the remainder in 1967. This made Kohler’s job a lot easier.

This site is situated in east-central Big Horn County, approximately 9 miles north-northeast of Shell, along the foot of the west slope of the Bighorn Mountains.

There were many significant discoveries on the public lands during the 1990s. For example, historic and prehistoric resources on public lands gained national and international celebrity in 1991 with a rare paleontological discovery in the remote badlands of northern Wyoming. Film, song, books, and countless newspaper and magazine articles celebrated the excavation of nearly intact fossils of a creature referred to as “Big Al” (a member of the species *Allosaurus*).

Throughout the 1990s, BLM archaeologists continued excavation of the Mesa Paleoinian site along the northern flank of Alaska’s Brooks Range, first discovered in 1978. The excavation work revealed ancient hearths and associated stone artifacts dating from 12,000 to 15,000 years ago. Projectile points found at the site were similar to those made by Paleoindian inhabitants thousands of miles away in the western continental United

Big Al skull. Photo courtesy of Museum of the Rockies.



Brent Breithaupt with Big Al exhibit. Photo courtesy of Museum of the Rockies.

John Lee served as the chief cadastral surveyor for the Wyoming State Office from 1989 until his retirement. Prior to that he worked as a cadastral surveyor in the Oregon, California, and Colorado State Offices as well as in the Headquarters Office in Washington, DC.

States—suggesting an intriguing connection between the two ancient cultures.

In 1997, a research geologist from the Indiana Geological Survey, Erik Kvale, was leading a group of hikers on a trek across public lands near Red Gulch, Wyoming, when he noticed curious imprints in the limestone bed of a dry wash. The chance siting led to the discovery of one of the few paleontological sites in the world from the Middle Jurassic Period of 160 million to 180 million years

ago. The depressions in the rock noticed by Kvale proved to be among hundreds, possibly thousands, of footprints left by dinosaurs as they trod the muddy shore of an ancient sea.

The continuing need to combat looting and vandalism of archaeological resources underscored the importance of the BLM's education programs. When Interior Secretary Lujan included education in the Department's stewardship agenda in 1990, the BLM conducted a study of existing Bureau

education initiatives and offered alternatives for creating a national education program. Director Cy Jamison vowed that the BLM would become a leader in heritage education.

In 1991, the BLM developed "A Plan to Educate Young Americans About Their Nation's Rich Cultural Heritage." The plan described a flagship program to enhance science literacy and promote stewardship. Around the same time, the BLM released "Teenage Mutant Ninja Turtles and

the Cliffs of Mystery," a video and activity guide that used these popular characters to present an antivandalism message. In addition, Utah's "Intrigue of the Past: Investigating Archaeology" education program was adopted as the classroom component of the national heritage education program and renamed "Project Archaeology." This program continues to provide curricular materials for educators to fulfill science and literacy standards while teaching citizenship and stewardship.

located and determined tribal affiliation for about 90 percent of the Native American human remains in its museum collections. The effort involved thousands of hours of inventory and analysis by staffs from nonfederal museums and the BLM, as well as countless hours by tribes in consultation with the BLM. The work resulted in the identification of 464 individual human remains and about 11,230 objects for potential repatriation, enabling the Bureau to honor its obligation to return them to the affiliated tribes.

the Ancestral Puebloan (Anasazi), who inhabited the region from AD 1 to AD 1300. By 1999, the museum's collections included approximately 3 million artifacts.

In 1992, the BLM opened the National Historic Oregon Trail Interpretive Center to celebrate the sesquicentennial of the Oregon Trail. The celebration featured the largest wagon train reenactment of the century.

### The Bisti Beast: The First Paleontological Excavation in BLM Wilderness | By Pat Hester

In 1984, the San Juan Basin Wilderness Act was passed, establishing the Bisti/De-Na-Zin Wilderness in New Mexico. The geologic formations exposed within the badlands of this wilderness record an ancient ecosystem. Here, changes to plant and animal life document the end of the Cretaceous geologic time period and the beginning of the Paleocene, a time when mammals began filling ecological niches left vacant by the demise of the dinosaurs.

This part of New Mexico has been visited by paleontologists since the 1880s, so its known paleontological resources were a component of the wilderness values found here. Establishing wilderness in areas with paleontological resources was controversial. The paleontological research community's perception was that wilderness designation might limit research. Reconnaissance and survey activities for paleontological resources were assessed, and the conclusion was that these activities had little effect on wilderness characteristics. By 1995, permitted reconnaissance and survey for paleontological resources in the area resumed and continue today.

When Paul Sealey, a volunteer with the New Mexico Museum of Natural History and Science (NMMNHS), discovered fossil bones eroding out of a knoll deep inside the Bisti/De-Na-Zin Wilderness in the spring of 1997, he marked the spot with two small cairns so that he could return to the locality with paleontologists from the NMMNHS. Sealey didn't have a GPS unit. That fall, Dr. Tom Williamson and NMMNHS staff and volunteers returned to assess the sites and identified the discoveries as a partial skeleton of a large tyrannosaurid, a skull of a *Pentaceratops sternbergii*, and a partial skeleton of a hadrosaur. The partially exposed fossil material was very exciting for the group since, at that time, there were only six

whole or partial skulls of *Pentaceratops sternbergii* known to science, and tyrannosaurid material was even more rare—only two partial skeletons were known from the geologic formations exposed in the Bisti/De-Na-Zin. The amount of material in place would require excavation to preserve the bones for scientific purposes. Excavation would include digging a trench around rock containing the bone material, creating a protective jacket around the bone and rock matrix, and finally, getting it out of the wilderness!

For Chris Barnes, the BLM Farmington Resource Area recreation and wilderness specialist, the challenge was managing for wilderness values while balancing the collection of significant paleontological resources. An environmental assessment was completed using the "minimum tool" principle, and a permit was issued for excavating those paleontological resources.

In the summer of 1998, the crew walked the 3 miles to the excavation site in the badlands, hand-carrying plaster, burlap, water for the plaster jacket, and hand tools, which were cached inside the wilderness. Each day, once their work was completed, the crew returned to a campsite outside of the wilderness. Work occurred over 3 months and was completed in September. On September 11, 1998, the NMMNHS arranged for a helicopter to fly the 2000-pound jacket containing the tyrannosaurid out of the wilderness. The helicopter did not land at the site; the jacket was netted, hooked onto the helicopter, and then flown out. Followup site visits show that evidence of the excavation activities in the wilderness has disappeared. In 2010, the tyrannosaurid was described and named by Thomas Carr and Tom Williamson as *Bistahieversor sealeyi*. The Bisti Beast remains on display for public enjoyment at the NMMNHS.



Bisti Beast skull. Photo by David Baccadutre (New Mexico Museum of Natural History and Science).

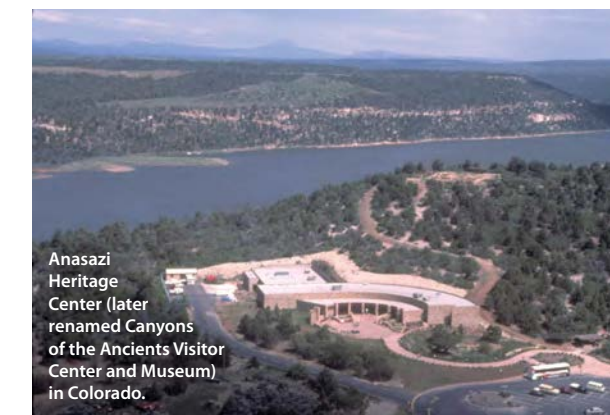


Extracting the Bisti Beast by helicopter. Photo by John Arnold (New Mexico Museum of Natural History and Science).

Patricia Hester was BLM's regional paleontologist for New Mexico, Texas, Oklahoma, Arizona, and California from 2004 until her retirement in 2012. She was also a BLM geologist in solid minerals, mining law, and oil and gas for 19 years. During her time in New Mexico, Pat coordinated and facilitated the excavation of the Seismosaurus Quarry in the Ojito Wilderness.



Dinosaur track at Red Gulch in Wyoming.



Anasazi Heritage Center (later renamed Canyons of the Ancients Visitor Center and Museum) in Colorado.



National Historic Oregon Trail Interpretive Center in Oregon.

### Partnerships Enhance Preservation

In 1997, the BLM signed an agreement with the Advisory Council on Historic Preservation and the National Conference of State Historic Preservation Officers that promoted collaboration on more efficient state-specific procedures regarding preservation. To implement the agreement, the Director also chartered the BLM Preservation Board, composed of BLM deputy preservation officers and field specialists, which continues to inform BLM policy development and implementation.

### The Bureau Fulfills Its Sacred Obligation to Native American Tribes

In 1990, the Native American Graves Protection and Repatriation Act required federal agencies and nonfederal museums that receive federal funds to locate, inventory, and determine the ultimate disposition of Native American cultural items, including human remains and funerary and sacred objects.

Upon enactment of the law, the BLM devoted substantial time, energy, and funding to fully carry out its obligations. By 1999, the BLM had

### The Bureau Establishes Interpretive Areas

Eager to share the wonders of the nation's cultural and natural heritage with the public, the BLM designated its first national interpretive lead position in 1993. The BLM also established a number of interpretive areas, including the Red Gulch Site in Wyoming, the Trail Through Time in Colorado, the Paleozoic Trackway in New Mexico, and the Trilobite Trail in Nevada.

By the end of the decade, the BLM had inventoried a total of 13.9 million acres, recording more than 220,000 cultural resource properties and more than 25,000 paleontological localities. Of these, 255 became sites on the National Register of Historic Places, and 22 became National Historic Landmarks.

The BLM also developed interpretive centers for cultural resources. The Anasazi Heritage Center in southwestern Colorado, which opened in 1988, hosted tens of thousands of visitors and hundreds of scientists during the 1990s. The museum preserves artifacts and records from excavations in the Four Corners area and is one of the premier repositories for artifacts relating to the culture of

## Education, Partnership, and Volunteer Efforts Expand

In 1991, the BLM's new environmental education division entered into an agreement with the National Science Teachers Association to produce inserts for the association's "Science and Children" magazine. Over the next decade, the BLM produced 22 articles with posters covering environmental and heritage education topics. Field staffs incorporated these materials into their programs, while readers nationwide learned more about the BLM. Other partnerships followed. Through Project Learning

Tree, a national environmental education program of the American Forest Foundation, the BLM expanded fire and invasive species education efforts. The BLM established the Partners in Resource Education collaboration in 1994 to coordinate environmental education efforts of federal land management agencies. Between 1995 and 2000, the environmental education and heritage education staffs each developed national strategies for expanded use of digital media and the Internet. The Environmental Education Division produced CD-ROMs, satellite broadcasts,

and electronic field trips and posted educational resources on the "Learning Landscapes" website.

On Labor Day in 1994, the BLM and the Times-Mirror Company—publisher of outdoor magazines and other publications—together launched a new initiative that became the largest hands-on volunteer program ever to benefit the nation's public lands. In its inaugural celebration, Public Lands Appreciation Day enlisted 700 volunteers at three sites on the public lands. Over the next two decades, the program, renamed National Public

Lands Day, enlisted scores of government and private partners. Participation in the event grew to 175,000 volunteers working at more than 2,200 sites in every U.S. state and territory.

During the 1990s, several initiatives expanded the volunteer program and provided centralized leadership for the enlistment and use of volunteers. In 1992, the volunteer program and staff became part of the newly formed Division of Environmental Education and Volunteers. In 1995, the division created the Volunteer Program Adjunct Team to provide technical expertise and help implement strategic initiatives. The team established the BLM Making a Difference National Volunteer Awards program to honor volunteers and volunteer coordinators.

## The President, Congress, and the Bureau Recognize Special Places

Special designations of BLM-managed lands predated the enactment of FLPMA—Congress designated the King Range National Conservation Area, the BLM's first, in 1970. FLPMA itself created the 25-million-acre California Desert Conservation Area, with 10 million acres of that area managed by the BLM. Over the next decade, Congress designated BLM-administered national conservation areas in Alaska, New Mexico, and Arizona.

In 1980, the BLM completed the first step of the process required by section 603 of FLPMA, which was to identify areas with wilderness characteristics. It identified over 900 wilderness study areas encompassing more than 23 million acres of BLM-

managed lands.<sup>10</sup> The second step of the process, which was to study each wilderness study area to make a recommendation to the President on "the suitability or nonsuitability of each such area or island for preservation as wilderness," concluded in 1991. The central issue addressed by the studies was not to determine whether an area possessed wilderness characteristics, which was already established, but rather to determine whether the area was "more suitable for wilderness designation or more suitable for nonwilderness uses." Between July 1991 and January 1993, President George H.W. Bush submitted these state-by-state recommendations to Congress.



### Environmental Education on the Ground: Native Plant Restoration at Grand Staircase-Escalante National Monument | By Beth Kampschor

On a field trip to Grand Staircase-Escalante National Monument, Barbara Warner, a science teacher at Kanab High School, quizzed 10 students about plants on the scrubby flats of Petrified Hollow, some 20 miles east of Kanab, Utah. "What's this one here?" she asked, pointing at the compact, gray-green bushes dotting the plain. "Sage," students called out. "Winterfat," they agreed about another shrub.

Satisfied with their identification of the plants, Warner then scattered the students to collect winterfat seeds. "Don't strip the plants—just fill these bags about half way," she said, demonstrating with a plastic sandwich bag. The students fanned out on the plain. Within 10 minutes, they'd filled their quota.



Plant identification and seed collection are just a small part of a project that studies, grows, and reestablishes native plants within the monument. The native plant restoration project matches students in Warner's natural resource management class with BLM staff from the monument and the Kanab Field Office. An education coordinator funded by Grand Staircase Escalante Partners (GSEP) ([www.gsenm.org](http://www.gsenm.org)) works out the logistics of bringing students and the BLM together.

As fall turns to winter, students plant the seeds they've collected in the school greenhouse; in springtime, they will plant the seedlings within the monument. The BLM plans to extend the project to other schools surrounding the monument.

Warner's class in Kanab is popular, with enrollment increasing every year. "The students in my natural resource management class really enjoy working with the BLM staff, and they take great pride in the winterfat plants they've raised from seed and transplanted to their new homes at the national monument," she said.

At Petrified Hollow on a chilly fall morning, Allan Bate, a rangeland management specialist, and Web Staley, a biological science technician, taught the students how to systematically identify and count the number of plant species in a given area while GSEP's education coordinator, Wade Parsons, showed another group of students how to map winterfat stands with global positioning system (GPS) technology.

Parsons, whose background includes nearly 20 years of teaching, as well as more than a decade of field archaeology, said the students learn quickly. "They've learned more than they realize," Parsons said, adding that a former Kanab High School student landed a job with the BLM in St. George thanks to the GPS and mapping skills he learned in the class. "Those are real world skills, and students can use them in any land management agency."

Beth Kampschor is the former communications coordinator for the Grand Staircase Escalante Partners, the nonprofit friends group that supports the monument. She also served as the executive director for Friends of the Missouri Breaks Monument.





Mecca Hills Wilderness in California.

### Reminiscences of Wilderness and Training | *Compiled by Jim Foote*

In 1990, as the BLM was recommending 2.3 million acres in California for wilderness designation, employees were learning how to manage those special and unique areas. Following are excerpts from an article in that year's October/November issue of the BLM's "Newsbeat" magazine in which participants in a National Outdoor Leadership School (NOLS) training session relate their experiences as they learned how to come and go in these areas without leaving a trace:

*I knew what was coming. I knew what he was going to say even before he said it. As his hand reached for that smooth rock, I anticipated his every word. It had been a short hike from the vehicles to our first campsite, and necessarily so, as organizational matters and travel to the trailhead consumed the fleeting daylight hours. Not having been burdened with such a heavy pack in recent memory (which was made even heavier with copious quantities of such "contraband" as M&Ms and Tootsie Roll Pops), I was not about to argue a case for pushing farther along the trail. After a reasonable rest, the group gathered with a NOLS instructor to discuss minimum impact camping. As his hand reached for a smooth rock, I suddenly envisioned a photo of a similar hand holding a similar smooth rock in the NOLS publication "Soft Paths," and the printed words under that photo sent chills down my spine: "Today, traveling light for many visitors also means doing without that recent invention of civilization—toilet paper." The dread lasted but an instant for I knew that, along with the M&Ms and Tootsie Roll Pops stashed beneath my supplies, there was another "necessity" of civilization I had chosen not to leave behind.*

Jim Foote, outdoor recreation planner, Needles Resource Area

*My trip to the Santa Rosa Mountains reinforced my healthy respect for gravity. Carrying my 60-pound pack up a series of sandy washes and the final 1,000 foot assault on the mountains more than tested my dubious endurance, and further taught me that just about every plant in the desert has a spine attached to it. But there was a payoff for all the hard work. The transition from the sun-baked, cactus-covered mountainside to the shade of the pinyon pine, fine soft sand, cool temperatures, and spring water made the tough climb all worthwhile. The NOLS instructors' dedication to low impact use of the lands revitalized in my mind a land use ethic that is necessary to ensure that future users of our wilderness areas have as rewarding an experience as I did.*

Gary Pavak, wilderness coordinator, Washington Office

*It's evening. We've finished cooking, cleaned our dishes, and scattered the dishwater. All food scraps are collected and bagged up, ready to be packed out with the litter. The first stars are coming out, a gentle breeze is stirring. Ah, for the comfort of a campfire. We look around at our campsite: the area shows no evidence of a campfire ever being there. Our camp and kitchen are in a non-vegetated area, and we know that when we leave, no one must know we were here. The site will be well camouflaged after we brush out our tracks and scatter soil. But a campfire? Blackened rocks? Soil sterilized by the heat? Wish there were some way to enjoy the companionship of a campfire without impacting the environment. The answer to our dilemma, as presented by the NOLS instructors, becomes obvious—a mound fire! Taking a tarp down to a small dry drainage, we fill it with sand and carry it back to camp. We've selected a huge, flat rock to build our fire on, big enough for us all to sit on. Laying the tarp down, we spread the sand in a layer about 6 inches deep and carefully build a fire on top of it. What an evening! After the wood has turned to ash, the remains are doused with water and we turn in for the night. The next morning, after dispersing the ashes and returning the sand to the drainage, we survey the campsite. What campsite? And it's with real pride that we leave the area, knowing that the next person who chances by will experience the joy that comes of being the "first" to visit this place.*

Lynn Watkins, wilderness specialist, El Centro Resource Area

*Moonset and sunrise dazzle my eyes. I feel as if I am at the site of a fantasy novel. Cahuilla Indian signs are all around us. Rocks stacked up. Monuments? Boundaries? Subtle trail markers—rock on rock? There are so many stories here. It's so much a part of the land that it's hard to decipher. But now that I've been tutored on what to look for, my eyes see more.*

JuLee Palette, wilderness specialist, Ridgecrest Resource Area



Joshua trees and wildflowers in Owens Peak Wilderness in California.

*Jim Foote* was the manager of the Santa Rosa and San Jacinto Mountains National Monument in California from 2008 until his retirement in 2016. Prior to that, he was an outdoor recreation planner in the BLM's Needles Field Office, and later, the Palm Springs Field Office.

The BLM managed all of these wilderness study areas, as directed by FLPMA, "in a manner so as not to impair the suitability of such areas for preservation as wilderness" pending final action by Congress to either designate them as wilderness or release them from wilderness study area status.

The BLM also established special protected areas under its own administrative authorities, including recreation areas, primitive areas, outstanding natural areas, research natural areas, and resource conservation areas.

In the mid-1990s, the BLM's role in conservation went unrecognized; its conservation programs and policies spread across various organizational missions and implementation occurred in isolated field units. The BLM regularly transferred lands deemed suitable for national monument designation to protect objects of outstanding historic and scientific value to the National Park Service.<sup>11</sup>

This situation changed in 1996 when President Clinton designated the 1.9 million-acre Grand Staircase-Escalante National Monument in southern Utah.<sup>12</sup> The sheer scope of geological, paleontological, biological, historical, and archaeological resources outlined in the Presidential Proclamation that established the monument may have seemed overstated at first, but a 1997 science symposium confirmed the monument's vast and diverse scientific riches.

The Presidential declaration, made from Arizona's Grand Canyon just hours after the administration had denied any intent of creating a monument in Utah, ignited a firestorm of controversy throughout the West. The State of Utah and the Utah

Association of Counties joined the Mountain States Legal Foundation in a suit aimed at overturning the designation.<sup>13</sup>

Despite the furor that President Clinton's dramatic use of the Antiquities Act created, Congress was also highly involved in protecting new units on BLM-managed lands, adding significantly to the BLM's conservation management portfolio. From June 2000 to January 2001, Congress made 18 new designations on BLM lands, including 4 national conservation areas, 1 national monument, 12 wilderness areas, and 1 national historic trail. These were in addition to the 14 BLM national monuments created by Presidential Proclamation and the 1 national monument created by Congress during the Clinton years.

Entrusting the BLM to manage and protect these areas signaled a gradual shift in the nation's thinking about conservation—the BLM was to manage national monuments within the context of multiple use. The language designating the monuments included direction allowing traditional uses of the land (such as hunting, fishing, livestock grazing, and recreation) while protecting the values for which each area was designated.

### The Wild Horse and Burro Program Addresses Controversy

In the era following passage of the 1971 Wild Free-Roaming Horses and Burros Act, the darkest chapter for the program opened on the morning of January 4, 1997, when an explosive article by the Associated Press ignited a nationwide media frenzy.

The article led with two highly sensational—and erroneous—charges against the BLM. "A



Saylor Creek Horse Management Area in Idaho.

multimillion-dollar federal program created to save the lives of wild horses is instead channeling them by the thousands to slaughterhouses where they are chopped into cuts of meat," the article stated. "Among those profiting from the slaughter are employees of the Bureau of Land Management, the federal agency that administers the program."<sup>14</sup>

### The Bureau Initiates an Investigation

Within hours of the story breaking, the Department of the Interior's assistant secretary for land and minerals management, Bob Armstrong, ordered an immediate investigation of the allegations. The BLM sent teams of law enforcement agents and wild horse experts to all horse slaughterhouses in the United States and to one slaughterhouse in Canada.

The BLM's assistant director for renewable resources and planning, Maitland Sharpe, later summarized the findings of the investigation:

"The BLM conducted an extensive investigation that found that less than

one-quarter of 1 percent of all horses sent to meat-packing plants were ever wild or managed by the agency.

“Not one investigation has substantiated the claims of the Associated Press account.

“To conclude that adopters are sending wild horses to slaughter to make a fast buck just doesn’t add up. The BLM has strict requirements adopters must follow to ensure the proper care of their animals. The average cost of feeding and veterinary and farrier services for a horse is about \$1,000 a year—more if you are boarding the animal. Slaughterhouses pay up to about \$700 a horse. The implication that people who adopt horses are in it for the money does a terrible disservice to the thousands of folks who invest their time, funds and hear[t] to provide these animals with good homes.”<sup>15</sup>

While the investigation refuted the Associated Press’ principal allegations, the review by the BLM, as well as reviews by other independent investigators, pointed to a number of deficiencies in the management of the program.



Wild horse medical exam.

### Congress Convenes a Hearing

It was at this critical juncture, with the program still in the harsh public spotlight and questions raging about the program’s management, that members of the House Resources Subcommittee on National Parks and Public Lands gathered in Reno, Nevada. The subcommittee was to conduct a field hearing on “Range Issues and Problems with the Wild Horse and Burro Act and Its Implementation.”

Utah Representative Jim Hansen, then chair of the subcommittee, opened the hearing with a stark assessment of the state of the wild horse and burro program:

“The intentions behind the [wild horse and burro] Act were quite laudable. Unfortunately, things have not worked out quite as well as Congress anticipated. The range is becoming degraded, riparian areas are being destroyed, and adoptions are lagging and cost millions of dollars a year to administer. The health of the animals on the range is deteriorating, disease is becoming a problem in many areas and the animals are competing with and driving out wildlife.

“The BLM faces a lot of challenges as it tries to manage its feral animals on the public lands. We have given them laws and mandates to live by that are often contradictory, and generally they try to do the best they can to make sense of the whole mess. I hope we can figure out a way to make their job a little easier.”<sup>16</sup>

The hearing gave stakeholders of all stripes an opportunity to present their views on the wild horse and burro program. Testifying on behalf of the BLM, Bob Abbey, the Nevada state director (who, a decade later, was appointed BLM director), outlined a set of improvements in population management, humane care and treatment, and use of science aimed at meeting the long-term objectives of the program.

The employees of the BLM’s wild horse and burro program achieved some notable successes, though they were lost in the storm of adverse attention over the years, and with little public appreciation or reward, they remained dedicated to their mission.



Wild burros in Hells Canyon Wilderness in Arizona.

### Energy and Minerals Management Considers Environmental Changes

The decade of the 1990s opened with a brief war in the Persian Gulf that caused a temporary oil price shock and reignited public debates on energy independence. But a decade of cheap oil soon set in, and the emphasis of national energy policy shifted to the externalities associated with fossil fuel production.

The Intergovernmental Panel on Climate Change first warned in 1990 that human activities could be contributing to a climb in the average temperature of the Earth, and President Clinton took action on climate policy following his inauguration in 1993. He pledged to stabilize greenhouse gas emissions at 1990 levels by the year 2000 and advanced a “Climate Change Action Plan” to help achieve this goal.

Still, with price controls a thing of the past, fossil fuel production thrived on federal lands in the 1990s. The share of overall domestic oil production that came from public lands rose from 20 percent in 1992 to 32 percent in 1998, while the share of coal production climbed from 27 percent to 41 percent over the same period. Drilling for coalbed methane, the natural gas found in coal seams, soared in Wyoming’s Powder River Basin and other areas.

The BLM approved tens of thousands of leases and drilling permits during the 1990s. Lease sale bidding reached astonishing sums, with the 133 tracts offered in the May 1999 auction for the National Petroleum Reserve-Alaska fetching more than \$124 million.



Wyoming’s Powder River Basin.



## The Bureau Proposes Mining Reform

While the Clinton administration generally applied a market-based approach to energy policy, some of its biggest clashes with industry occurred over mining regulation.

The mining industry had operated on public lands largely unsupervised for decades prior to the late 1970s. When the BLM announced new regulations in 1980, it soon became apparent that the regulations needed financial guarantees to guard against potential environmental damage caused by failed mining operations.

After the General Accounting Office released reports in the mid-1980s citing the BLM's failure to inspect mining operations on public lands and take action on numerous unreclaimed mining sites, the Bureau formed a task force to examine revisions to its bonding regulations. In 1991, the BLM formally proposed revisions to these regulations. Industry attacked the plan to institute mandatory bonding, as companies feared the prospect of facing duplicative federal and state requirements. The BLM suspended work on the regulations in 1993 to afford Congress a chance to reform the General Mining Act of 1872. When legislation died in conference committee, Interior Secretary Babbitt reinitiated the regulatory effort in 1997.

The BLM put forth the revised bonding regulations that year, but opponents successfully challenged them in federal court. Rather than appeal, the Department of the Interior folded the proceeding into its overall revision of section 3809 regulations of the mining law. When the BLM released those regulations in the fall of 2000, they included language requiring miners to provide a financial

guarantee covering the estimated costs of reclamation.

Claiming that their costs of doing business would significantly increase, industry representatives blasted the rules and sued to block them. The incoming Bush administration, saying they were last-minute regulations, subsequently suspended them.

The Department of the Interior, under Secretary Babbitt, also attempted mining reform through issuance of a series of Solicitor's opinions. In November 1997, the Department released the most contentious of these, the so-called "millsite opinion," and offered the Solicitor's interpretation of language in the 1872 mining law that said there could be no more than one 5-acre millsite for each mining claim.<sup>17</sup> In practice, miners often required more than one millsite for mining claims, but the opinion limited operations to a single 5-acre millsite.

After a mining plan in Washington State was denied based on the millsite opinion, an uproar ensued. Bob Anderson, a former BLM assistant director for minerals, realty, and resource protection, recalled that some miners reduced the size of their claims so they could add millsites. Congress intervened, attaching a rider to a spending bill that said the millsite limitation did not apply to applications grandfathered in from a 1994 moratorium on mine patents. The moratorium, ordered by Secretary Babbitt after the mining law reform failed, remained in place as of 2012.

The Bush administration reversed the Solicitor's opinion in its entirety in 2003, saying that the mining law does not limit the number of millsites per claim.

## Renewable Energy Efforts Begin

The first experiments with renewable energy production on BLM lands occurred in California with a series of actions to promote wind development in the late 1970s and the 1980s.

The California Energy Commission began mapping the state's wind energy resources in 1977 and identified two areas on BLM land—Tehachapi Pass in Kern County and the San Geronio Pass in Riverside County—for development. In response, the BLM's California State Office launched a plan to authorize wind energy in the early 1980s. This plan, combined with state and federal tax credits, caused interest in wind production to take off in the area. These early wind energy authorizations on the public lands included some inconsistent terms and conditions and various rental or royalty provisions. The BLM did not issue consistent policy on wind energy rights-of-way until 2002.



Wind turbines in California.

## The Bureau Inherits Helium Responsibilities

The deficit reduction deliberations of the 1990s also led to the BLM inheriting responsibility for the National Helium Reserve. The Department of the Interior's Bureau of Mines had run the reserve since the mid-1920s, and along the way, the agency had accumulated more than \$1 billion in debt through its purchase of helium and interest accumulated on the borrowings. With 90 percent of the helium

produced in the United States stemming from the private sector by 1995, Congress decided it was time to get out of the helium refining business.

Implementation of the Helium Privatization Act of 1996 gave the BLM control of the Bush Dome in Amarillo, Texas, which provided a third of the world's helium supply. The BLM was to use any profits from the helium program to repay the helium debt. The law required termination of the helium production fund once the debt was paid.<sup>18</sup>

### Managing the BLM's Helium Program | *By Leslie A. Theiss*

When I agreed to take on the job as the manager of the federal helium program in Amarillo, Texas, the only thing I knew about helium was that it was used for blimps and balloons. Boy, did I have a lot to learn!

The federal helium program has a long, proud history in the Texas Panhandle. The original purpose of the program was to ensure supplies of helium were available to the federal government for defense, research, and medical applications. The government acquired the Bush Dome, a geologic structure containing a partially depleted gas reservoir, in the 1920s for this reason. During and after World War II, the demand for helium increased, and in the 1960s, the government purchased helium to fill up the dome.

Over time, the program evolved into a conservation program with a goal of supplying high-grade helium for high-tech research and aerospace applications. By the 1990s, private demand for helium far exceeded federal demand. The Helium Privatization Act of 1996 redefined our primary functions, making the BLM responsible for operating and maintaining the helium reservoir and pipeline system, providing crude helium gas through contracts with private companies, evaluating the nation's helium-bearing gas fields, and providing access to federal lands for managed recovery and use of helium.

Ours is the only helium storage facility in the world, so people are often curious about how we produce and process the helium. We frequently host visitors from other countries (including Russia, Poland, Germany, and Japan) who are interested in our operations. Crude helium is produced from our facility at the Cliffsides Gas Field approximately 15 miles northwest of Amarillo. The helium is extracted from the Bush Dome, which contains helium, natural gas, and other gases such as nitrogen and methane. We have two dozen wells that extract the gas. The gas mixture is then run through our helium enrichment unit, which opened in 2004, where the natural gas, helium, and other byproducts are separated. The crude helium is then delivered

to private industry refiners who are attached to our 425-mile pipeline. The pipeline runs from our plant through the Panhandle of Oklahoma to its endpoint in the middle of Kansas. Currently, 35 percent of the world's helium and 42 percent of domestic helium are supplied by our helium enrichment unit.

The helium organization is unique in that it is financed by a government public enterprise fund (a partnership with private industry), not by annual appropriations from Congress. We run our operations using income from the sale of crude helium (78 percent pure) and management of the helium storage facility and pipeline. Monies in excess of amounts needed for operations are returned annually to the U.S. Treasury to be applied against the helium program's debt incurred in the 1960s. Over the past 10 years, \$939 million has been returned to the U.S. Treasury, paying off much of that debt. In addition, more than \$20 million per year is added to the regional economy of the Texas Panhandle in payroll, goods, and services.

From 2005–2007, there was a worldwide shortage of helium, which brought a great deal of media attention and market pressure to our operation in Amarillo. We fielded media calls from "The Wall Street Journal," National Public Radio, and "Good Morning America" and visits from national and international correspondents from Canada, the United Kingdom, and other countries. We were even the subject of a joke on a late-night comedy show!

As you can see, the Amarillo Field Office's helium operations are not just about balloons. Kids might be happy if all we did was keep the balloons filled, but helium has many varied and important uses that affect our everyday lives. Helium is used for cooling the magnets in magnetic resonance image (MRI) scans, manufacturing fiber optic cable, pressurizing liquid propellants used in space shuttle launches, welding, filling balloons for the Macy's Thanksgiving Day Parade, and lastly, filling party balloons.

Various industries increasingly recognized helium for a variety of scientific, medical, and industrial applications, from the space program to magnetic resonance imaging (MRI) and laser surgery to the superconducting magnets of advanced physics research. The BLM operated the reservoir and an intermediate processing facility that delivered crude helium to refiners via a pipeline.



Helium production plant near Amarillo, Texas (1943).

Crude helium enrichment unit in the Cliffsides Gas Field.



*Leslie Theiss* was the field manager for helium operations at the Amarillo Field Office in Texas from 2004 until her retirement. Prior to that, she was the field manager for the Carlsbad Field Office in New Mexico and the Pinedale Field Office in Wyoming and was also a senior fluid minerals geologist and area geologist for the BLM.

## Wildland Fire Management Reaches a Turning Point

In 1991, just 3 years after the Yellowstone fires, a grass fire that spread to large brush and scrub trees in the hills near Oakland, California, killed 25 people, injured another 150, and damaged or consumed more than 3,000 single-family homes and more than 400 apartment and condominium units, causing an estimated loss of \$1.5 billion.<sup>19</sup> The Oakland Hills incident showed that fire issues pertaining to homes in forest environments also could be deadly and costly in rangeland and brush environments, which dominate the lands managed by the BLM.

### Lives Are Lost in the South Canyon Fire

In 1994, during a year of drought, low humidity, and record temperatures, a fire ignited on BLM



Memorial honoring 14 firefighters who died fighting a wildfire on Storm King Mountain in Colorado in 1994 (sculpture by Arizona artist Joyce Killebrew).

land on Storm King Mountain in Colorado that killed 14 firefighters. This tragic event, dubbed the South Canyon Fire, highlighted the severe conditions faced by firefighters, illustrated some shortcomings in the protocols for sharing severe weather information on the fire line, shed light on fire line decisionmaking concerns, and focused attention on discussions about landscape values at risk and firefighter safety. This single fire was the catalyst for major changes in the BLM fire program and across the wildland fire community.

“It was a turning point for a lot of things related to risk management, how we had been doing it, how we could improve it, and how we thought about it,”

said John Glenn, the BLM’s chief of fire operations at the National Interagency Fire Center in Boise, Idaho. “It really brought home the idea that no resources are worth a firefighter’s life.”<sup>20</sup>

The “Report of the South Canyon Fire Accident Investigation Team” highlighted numerous contributing factors that led to the fatalities on Storm King Mountain. Fuels were abundant and extremely dry from extended drought conditions. A period of hot weather, followed by a cold front, brought strong erratic winds as the front passed through the area and created severe fire behavior. Human factors included a failure to communicate weather predictions and fire conditions. The investigation also found fatigue to be a factor, citing one crew that had worked 26 consecutive days, with most shifts in excess of 12 hours, as it responded to several fires sparked by lightning in the same area.

Another significant contributing factor was a “can do” attitude among the firefighters that led to neglecting or compromising a number of safety guidelines. For instance, firefighters constructed fire lines downhill in steep terrain and tall fuels, which precluded them from seeing the location and the severity of the fire. In addition, escape routes and safety zones were inadequate, and not everyone received briefings on critical information.

### Firefighting Focus Shifts to Safety

Michelle Ryerson, who was among the first firefighters on the ground at the South Canyon Fire and who later became the safety and occupational health manager for the BLM’s fire and aviation program, agrees that South Canyon was a tipping point. “Before South Canyon, it seemed safety was fragmented among agencies and fire programs and

the focus was on just getting the job done,” Ryerson said. “South Canyon prompted what would become an entire interagency safety movement. It brought everyone together and put a new focus on our work as firefighters and safety. It was a major culture change, but it didn’t happen overnight.”<sup>21</sup>

The “Wildland Fire Safety Awareness Study” stemmed from the events at South Canyon and largely drove the culture change, which took nearly a decade to gel. The study, conducted by the TriData Corporation of Arlington, Virginia, with input from a number of independent consultants and federal wildfire experts, was a comprehensive examination of the fire community culture, human factors, external influences on safety, leadership, and more. This study, combined with the collaborative work of the federal fire agencies and the Occupational Safety and Health Administration, led to more than 30 changes in fire management practices and operations.

Primary changes included the creation of predictive services units—teams of meteorologists and intelligence personnel who model fire behavior—at coordination centers, new protocols for ensuring critical fire and weather information is shared with everyone on a fire, new safety training requirements, the creation of a “lessons learned” program, and more stringent work-rest and length-of-assignment guidelines. Additionally, there was a new focus on safety accountability, situational risk awareness and management, and guidelines that empowered all firefighters to refuse assignments they considered too dangerous (turn-down protocols).

“We all recognize there are some inherent risks associated with firefighting jobs,” Ryerson said. “But

where it was once a rules-based profession, it is now more principle-based. Where we once just raced in to get the job done, we are now more thoughtful about what we’re doing and we can step back, consider the risks, and take actions more in line with life and safety.”<sup>22</sup>

While an enhanced culture of safety was evolving, other events were taking place on parallel paths that also altered the perception and management of wildland fires. A year after the South Canyon incident, the nation’s federal fire community undertook a sweeping review of wildland fire policy. The “Federal Wildland Fire Management Policy and Program Review Final Report” recognized that managing wildland fire

was increasing in complexity and magnitude across all jurisdictions and landscapes. Given the hazardous and unhealthy accumulations of fuels and invasive weed species across the landscape, and to an increasing extent in the wildland–urban interface, the report noted that cooperation among all agencies and among all disciplines in resource management was imperative. It was the first major report to recognize fire’s role in nature and the need to restore it on the landscape and to provide a roadmap for integrating fire and resource management into planning and implementation. Those principles continued to form a basis for planning and operations heading into the new century.



Wildland fire in California.



A Remote Automated Weather Station, which transmits weather data critical for effective fire management.



Arizona surveyors (1910).



Surveying in Wyoming (mid to late 1970s).



Collecting survey data in Alaska.



Surveyor using GPS technology in California.

## From Chains to Lasers and Global Satellites | *By Robert Casias*

From the earliest days of our nation’s history, the job of a federal land surveyor has been to identify the boundaries of the federal estate. By measuring both the direction (bearing) and distance of boundary lines that construct the network of the Public Land Survey System (PLSS), surveyors have created the legal structure for maintaining title ownership of land in the West and large parts of the eastern United States.

The art of measurement has significantly evolved over the past 200 years. Surveyors working at the turn of the 19th century were dragging a 66-foot chain across the landscape and sighting the sun and stars to determine their direction and distance measurements. With the advent of laser technology, surveyors working in the 1970s found themselves freed of their chains and able to measure up to 3 miles at a time with a “Total Station” and a single electronic distance measurement (EDM). Laser technology allowed surveyors to make highly accurate distance measurements over large expanses in very little time. Although this technology significantly improved efficiencies, there were many surveyors who continued, for some time, to take their chains to the field to validate the measurements reported by their new EDM instruments.

In the late 1980s, the military began releasing an unencrypted signal from their constellation of global positioning system (GPS) satellites, and very soon, GPS technology allowed private and federal land surveyors to access continuous, worldwide, three-dimensional positioning information that today allows us to locate geographic positions on the ground to within a centimeter of accuracy. In 1980, the National Research Council released a report to Congress with a far-reaching vision of how cadastral data should exist in digital form. The “Need for a Multipurpose Cadastre” report stated that there should be a single, comprehensive, multipurpose cadastre that would be readily available at the parcel level for the entire nation. Two outcomes of this report brought BLM cadastral surveys into the spotlight, as PLSS data was a foundational element of the proposed national cadastre.

The first outcome of the report was that Congress identified the BLM’s cadastral survey program as the responsible party for collecting all PLSS geometries in a digital format. This effort was termed the Geographic Coordinate Data Base (GCDB) Project, and it transformed all of those measurements formerly found only on the official survey plats into a digital representation. The GCDB has become an invaluable tool to BLM land managers, who now widely use geographic information systems (GIS) to make decisions regarding the management of public lands.

The second outcome of the report was that the Office of Management and Budget extended the idea of common “multipurpose” mapping data by identifying seven separate themes that would be provided free of charge by the BLM to the public. These themes, known as the National Spatial Data Infrastructure framework, include cadastral survey boundaries, vegetation, transportation, terrain topology, and other national datasets. The Federal Geographic Data Committee (FGDC) was formed in 1990 to develop standards enabling these themes to be incorporated into a national dataset. The Department of the Interior (DOI) assumed responsibility for the cadastral framework along with several other themes. A Presidential order in 1994 specifically placed BLM in charge of data standards for the cadastral framework theme.

The BLM’s cadastral survey program has led the FGDC Cadastral Data Subcommittee and has already developed three kinds of standards: data content, transfer, and publication standards. While standards were evolving, the work of collecting GCDB data was continuous.

Since the 1970s, the BLM has collected many land records other than survey data. These records were combined with the GCDB into a GIS-based software the BLM built known as the Automated Land and Mineral Records System. Although there were merits to the system, it failed in staged operational testing and was subsequently abandoned. However, the test results noted the success of the spatial display of parcels, all of which were based on the GCDB portrayal of the PLSS.

In 1999, Congress encouraged the Forest Service and the BLM to combine their efforts into a single land information management system that would be useful to all other land management agencies and could be used by local jurisdictions such as states and counties. This system was known as the National Integrated Land System, which was the first digital multipurpose cadastre within the DOI. The vision was to have a coast-to-coast parcel dataset, with sources housed throughout the country, that would use GIS technology to automatically stitch the data together from these sources without the user needing to do anything more than ask for it.

The BLM continues its efforts to integrate both the spatial component and the tabular data that define the scope of its work on the public lands. We truly have come a long way in this field . . . from chains to lasers and global satellites.

*Bob Casias* is currently the associate director for the BLM’s National Operations Center in Denver. Prior to that, he was the deputy state director for support services as well as a land surveyor and the chief cadastral surveyor for the New Mexico State Office.

## Congress Passes Realty Management Reforms

Given the controversies and conflicts created by land sales in earlier decades, the BLM and other public land agencies came to emphasize land exchanges. Only through exchanges could the agencies gain any benefits from the disposal of lands under their jurisdiction.

Former Interior Solicitor John Lesly once explained, “Under long-prevailing law, revenues generated by BLM land sales disappear into the U.S. Treasury, leaving BLM entirely dependent on the congressional appropriations process for funds to acquire other land for its programs. This gives BLM no institutional incentive to sell, and every incentive to exchange, its surplus lands. But exchanges are slow and difficult, and they mean that negotiation rather than the marketplace would determine the value of the surplus federal land, heightening concern about whether Uncle Sam was getting full value.”<sup>23</sup>

The BLM was instrumental in devising a solution to address this dilemma in 1998 during the process of negotiating a major land exchange in southern Nevada. The solution came in the form of the Southern Nevada Public Land Management Act.

The act allowed the BLM to sell public land within a specific boundary around Las Vegas, Nevada. It also



provided for division of the revenue from land sales between the State of Nevada general education fund (5 percent), the Southern Nevada Water Authority (10 percent), and a special account available to the Secretary of the Interior for a variety of conservation measures on Nevada public lands. The act had impacts beyond Nevada, serving as a model for subsequent legislation governing the distribution of revenues from the sale of public lands.

## The Bureau Develops a Professional Law Enforcement Program

The BLM’s law enforcement program received a great deal of attention during the 1990s as the national media reported on several high profile events on public lands. With confidence high, the Bureau took small but necessary strides to continue to standardize its law enforcement program and enhance its professionalism.

As the decade began, the BLM canceled the Barstow to Vegas motorcycle race due to the recent listing of the desert tortoise as a threatened species under the Endangered Species Act and used its law enforcement officers to enforce the closure. The Saturday after Thanksgiving Day in 1990, a



Motocross race in California.

large group of protestors showed up at the historic starting line to create a diversion as protest riders ignored the closure. The BLM deployed rangers at the starting line and along the racecourse as agents infiltrated the antagonistic crowd. BLM law enforcement officers arrested several riders for entering the closed area and impounded their motorcycles.

## The Law Enforcement Office Develops Standard Policies and Procedures

The National Law Enforcement Office moved from Washington, DC, to Boise, Idaho, in 1992 to place management in closer proximity to field operations. The BLM provided its officers with patrol rifles, added a fourth K-9 officer to the program in Utah’s Richfield District, and obtained funding to hire special agents to work hazardous materials investigations.

California Desert District Ranger Felicia Probert transferred to the National Law Enforcement Office in 1992. She was instrumental in developing the BLM’s LAWNET, a centralized, electronic, law enforcement reporting database designed to comply with the Federal Bureau of Investigation’s National Incident-Based Reporting System. Compliance with



K-9 officers at Imperial Sand Dunes Recreation Area in California.



Felicia Probert at the Yaquina Head Outstanding Natural Area lighthouse in Oregon.

the National Incident-Based Reporting System was a federal mandate, and to Probert's credit, the BLM became the first federal land management agency to comply when LАWNET went operational in 1998.

After years of operation under loose guidance, the BLM issued the "Law Enforcement General Orders" in 1996, which established binding policy on all law enforcement operations, and revised the law enforcement manual to include a clear and firm mission statement:

"The Bureau law enforcement program is responsible for implementing the protection aspects of the Bureau Mission. Protection is accomplished through the enforcement of all Federal laws and regulations related to the use, management, and development of the public lands and their resources, including activities related to the administration of the public lands."

The BLM also recognized that the duties of rangers were similar to those of special agents and developed standard position descriptions to reflect this. Thus, the BLM recognized rangers as law enforcement officers engaged in the investigation of criminal activity and the apprehension of violators; imposed mandatory physical fitness, drug testing, and maximum hiring age limitation standards; and provided rangers with the same special retirement coverage that was already available to BLM special agents.

#### Law Enforcement Officers Face Adversity

By the mid-1990s, nationally diverse views and opinions about public land management were on a collision course. The debate over the long-term protection of public lands was heating up just as the BLM was drafting a rule to consolidate the prohibited acts throughout Title 43 of the Code of Federal Regulations into one easy-to-find chapter.

The BLM was also in the process of ordering replacement rifles. Many field-level rangers, emboldened by the Bureau's firm law enforcement mission statement, were removing light bars from patrol vehicles so they could catch violators in the act. Then, just as a movement by counties and states to gain local control of federal land was in full swing, the Grand Staircase-Escalante National Monument was established.

Antifederal groups claimed the public lands belonged to the states and that the BLM had no authority to manage or police the public lands. Some local law enforcement officials even threatened to arrest BLM employees engaged in the performance of their official duties. Political pressure forced the BLM to cancel its draft rulemaking and rifle acquisition projects and required that all marked patrol vehicles be equipped with light bars to maintain a highly visible profile on the public lands. Further, the

BLM issued written guidance to all employees on how to react if arrested by local law enforcement during the performance of their official duties. Law enforcement morale plummeted, as some offices believed the BLM's response was in direct contradiction to the new law enforcement mission statement.

The BLM's California state director, Ed Hastey, issued a written statement in 1997 admitting that the fallout of the recent regulatory effort "further complicated the mixed message problem," referring to the BLM's desire to have a high-profile law enforcement presence on the public lands while using the softest enforcement tactics. Hastey wrote:

"(Rangers) should be first and foremost BLM's most visible ambassadors to the public land users—there to educate, assist, and protect. They should exercise their law enforcement authority . . . only when

necessary to protect public safety or public land resources. . . . If the light bar does deter people from doing bad things on public lands, then they're working.

The focus of our job shouldn't be to make users fearful of BLM Rangers sneaking up on them, emphasizing search and seizures without a warrant, or pulling motorists off a highway for speeding. Those jobs sometimes need to be done, but those areas are more under the purview of . . . county sheriffs, or city police. Our Rangers are a different breed of law enforcement officer and it is a noble calling."



BLM law enforcement officer helps visitors in Arizona.



Grand Staircase-Escalante National Monument in Utah.

## Notes

1. U.S. General Accounting Office, *Public Lands: Limited Progress in Resource Management Planning*, Report to the Chairman, Subcommittee on National Parks and Public Lands, Committee on Interior and Insular Affairs, House of Representatives, GAO/RCED-90-225 (1990), 4.

2. The planning budget went from \$10.5 million in 1994 to \$6.4 million in 1999 (in 2000 dollars). U.S. Department of the Interior, Bureau of Land Management, *Report to the Congress: Land Use Planning for Sustainable Resource Decisions* (2000), 4.

3. U.S. Department of the Interior, Bureau of Land Management, *Ecosystem Management in the BLM: From Concept to Commitment*, BLM/SC/GI-94/005+1736 (Washington, DC, 1994).

4. John B. Loomis, *Integrated Public Lands Management: Principles and Applications to National Forests, Parks, Wildlife Refuges, and BLM Lands*, 2nd ed. (New York: Columbia University Press, 2002), 558.

5. Martha G. Hahn, “Interior Columbia Basin Ecosystem Management Project: Management Review,” in *Bioregional Assessments: Science at the Crossroads of Management and Policy*, K.N. Johnson, F. Swanson, M. Herring, and S. Greene (eds.), (Washington, DC: Island Press, 1999), 295.

6. John B. Loomis, *Integrated Public Lands Management: Principles and Applications to National Forests, Parks, Wildlife Refuges, and BLM Lands*, 2nd ed. (New York: Columbia University Press, 2002), 556.

7. Tom Kenworthy, “Babbitt Condemns Public Lands ‘Giveaway,’” the Washington Post, April 28, 1993.

8. Frank Clifford, “Maverick Babbitt Mending Fences on Range Reform: Land: Interior Secretary Travels the West, Trying to Reassure Ranchers He Hasn’t Forgotten His Rural Roots,” *Los Angeles Times*, December 25, 1993.

9. Bureau of Land Management, “Table 2-2. Condition of riparian-wetland areas, fiscal year 1997,” *Public Land Statistics 1997* (Denver, CO, 1998). Note that this number varied from state to state. For example, in Alaska, 91 percent of riparian areas on BLM-managed lands were in proper functioning condition whereas in Nevada, only 16 percent met the criteria.

10. *Federal Register*, vol. 45, no. 22 (November 14, 1980), 75574.

11. Examples of transfers to other agencies include the East Mojave Scenic Area in California, approximately 2 million acres transferred to enlarge Death Valley National Park and establish the Mohave National Preserve in 1991, the central Nevada transfer of about 78,000 acres to establish the Great Basin National Park in 1986, and the transfer of all the islands and rocks on the Oregon and Washington coasts in the late 1990s to the U.S. Fish and Wildlife Service’s National Wildlife Refuge System.

12. “Establishment of the Grand Staircase-Escalante National Monument,” Presidential Proclamation 6920, September 18, 1996.

13. W.P. Pendley, “Natural Resources Policy Under the Bush Administration: Not What It Says, But What It Has Done in Court,” *Duke Environmental Law and Policy Forum* 14, no. 2 (Spring 2004), 314.

14. Martha Mendoza, “Trail’s End for Horses: Slaughter,” *Associated Press*, January 5, 1997, [http://articles.latimes.com/1997-01-05/news/mn-15653\\_1\\_wild-horses](http://articles.latimes.com/1997-01-05/news/mn-15653_1_wild-horses).

15. Maitland Sharpe, “Letter: Wild Horse Slaughter Reports Wildly Exaggerated,” *Las Vegas Sun*, April 15, 1997, [www.lasvegassun.com/news/1997/apr/15/letter-wild-horse-slaughter-reports-wildly-exagger/](http://www.lasvegassun.com/news/1997/apr/15/letter-wild-horse-slaughter-reports-wildly-exagger/) (accessed August 11, 2011).

16. Opening Remarks of Chairman James Hansen (UT), “Range Issues and Problems with the Wild Horse and Burro Act and Its Implementation,” Field Hearing before the Subcommittee on National Parks and Public Lands of the Committee on Resources, House of Representatives, July 13, 1998.

17. Memorandum from the Office of the Solicitor, “Limitations on Patenting Millsites under the Mining Law of 1872,” dated November 7, 1997 (M-36988)

18. The BLM was scheduled to pay off the helium debt on October 7, 2013. Congress passed the Helium Stewardship Act in 2013, which succeeded the Helium Privatization Act. The act allowed for continued federal operation of the helium reservoir and pipeline, which supplied 42 percent of domestic demand. The intent of the act was to allow for a smooth transition to private production as the reserve is drawn down.

19. Captain Donald R. Parker, “The Oakland-Berkeley Hills Fire: An Overview,” Oakland Office of Fire Services, January 1992, from The Virtual Museum of the City of San Francisco, <http://www.sfmuseum.org/oakfire/overview.html>.

20. John Glenn, interview, 2011.

21. Michelle Ryerson, interview, 2011.

22. Ibid.

23. John D. Leshy, “The Babbitt Legacy at the Department of the Interior: A Preliminary View,” *Environmental Law* 31, no. 2 (2001), 199-227, [www.thefreelibrary.com/The+Babbitt+legacy+at+the+Department+of+the+Interior%3a+a+preliminary...-a075162657](http://www.thefreelibrary.com/The+Babbitt+legacy+at+the+Department+of+the+Interior%3a+a+preliminary...-a075162657).



Atigun River off the Dalton Highway in Alaska.

## Chapter 3 | Collaborative Management Helps Address 21st Century Challenges, 2000–2009

The BLM marked the beginning of the 21st century by creating the National Landscape Conservation System (NLCS) and fighting fires during a string of record fire years. Both activities, in very different ways, heralded changes that influenced the Bureau’s growing efforts to manage the nation’s public lands on a broader, “landscape” basis. The increasing scope of the BLM’s vision matched an unprecedented growth in public interest in its activities.

The BLM’s visibility increased, in part, because of the growing populations of once rural western states and the new technology that introduced BLM public lands to a global and diverse audience through the emerging social media venues of the Internet. Now, people from all over the world could not only learn about the BLM, but they could also become involved in decisionmaking through electronic media. The bold mandate to increase development of conventional and renewable energy resources on the public lands that followed the inauguration of President George W. Bush in 2001 further increased public interest and involvement in the BLM’s activities. At the same time, the BLM placed renewed emphasis on locally driven, collaborative management as partnerships



President George W. Bush

representing a diversity of interested groups and individuals emerged as the most valuable vehicle for addressing the challenges of the this century.

### The Secretary Establishes the National Landscape Conservation System

The creation of the NLCS<sup>1</sup> was one of the most significant actions affecting the BLM at the dawn of the century. By the end of President Clinton’s term, the BLM oversaw 15 national monuments. In July 2000, Secretary Babbitt established the Office of the National Landscape Conservation System to provide oversight for the BLM’s management of these and other special conservation areas.<sup>2</sup>

The new system of conservation lands initially received a mixed reaction. Some employees were elated, particularly those who had joined the BLM during the era of “new” environmental laws, including FLPMA. They expected the BLM to manage the public lands “in perpetuity for future generations,” and seeing the Bureau formalize an agencywide conservation system was good news indeed.

On the other hand, some employees and members of the public wondered why the BLM needed a new organization. It was already managing many areas for conservation and doing it quite well, as demonstrated by the number of units qualifying for NLCS designation. Some were concerned that the

creation of the NLCS would compromise the BLM’s multiple use mission, even though conservation and preservation had been components of multiple use as defined by FLPMA. Some program leaders openly fought the change, fearing it would mean loss of funding for their programs. Instead, in 2001 and in subsequent years, the BLM received additional funding in support of the NLCS and its clearly identified conservation mission.<sup>3</sup>

The small NLCS staff spent months getting the organization up and running. There were discussions at all levels about what designations the NLCS would include. The BLM decided that units designated through Presidential proclamations under the authority of the 1906 Antiquities Act or through legislation for conservation purposes would be part of the NLCS. The new system included national monuments, national conservation areas, wilderness areas, wilderness study areas, wild and scenic rivers, and national scenic and historic trails. The BLM eventually referred to the lands within the system as “conservation lands.”



Gunnison Gorge National Conservation Area in Colorado.

## Conservation Lands Allow for Working Landscapes

The BLM's conservation lands were different from national parks and other federally protected areas. Secretary Babbitt once stated that by creating the NLCS, "we were protecting landscapes, not making parks."<sup>4</sup>

Each unit had unique legislation or proclamation language tailored to address its specific conservation needs while recognizing the many human uses of the lands. The intent was never to manage all units identically. The BLM was to evaluate land uses through the land use planning process, determine which uses were compatible with the guiding language on conservation and preservation, and make decisions accordingly.

This approach also recognized that BLM lands were not all large, contiguous parcels; some were intermingled in a checkerboard pattern with private, tribal, and other federal and state lands. These circumstances required community-level planning to a degree not seen by other agencies but very familiar to BLM managers.



Hunting in El Malpais National Conservation Area in New Mexico.

NLCS units typically would not have boundary fences or gates to close at night. The lands would remain open, rugged backcountry landscapes. Land uses such as hunting, fishing, other recreational activities, and livestock grazing would continue in areas where they were compatible with the conservation goals of the unit. This "working landscape" model allowed for traditional uses of the land not permitted in national parks and promoted a greater level of conservation than for nondesignated areas in the BLM. The agency envisioned that gateway communities would provide visitor amenities, in partnership with the BLM, to help stimulate local economic opportunities while minimizing development within the units.

## A New Administration Reviews the Program

With the arrival of the Bush administration in 2001, certain groups and individuals became vocal in pressing for a repeal or reversal of some NLCS designations. After a thorough review, the new administration concluded that the BLM was appropriately managing these designations according to existing laws and budget directives, and the only way to change the designations was by acts of Congress. Congress did not take action on the matter.

Soon after her confirmation, Interior Secretary Gale Norton requested input from local leaders on recently designated national monuments and found strong local support for many of the designations. She announced plans to



Interior Secretary Gale Norton.

develop strong, locally based land use plans for the 15 NLCS monuments managed by the BLM.<sup>5</sup> The Secretary challenged the BLM to make the planning process a model for involving the people who live and work closest to the monuments.

Both the public and the BLM wanted these NLCS management plans completed and implemented quickly, but budget, staffing, and other realities frequently interfered. The BLM's planning and NLCS staffs worked together to design a simple cooperative approach to move quickly from land use plan development directly into implementation. NLCS field staffs worked with the individuals, groups, and elected officials who had been involved in the plan's development to create an implementation "roadmap." This roadmap resulted in a realistic list of priority action items.

## The Program Matures

Under the Bush administration, Congress took the lead in establishing new NLCS units between 2002 and 2008. For example, the Clark County Conservation of Public Lands and Natural Resources Act of 2002 designated wilderness, released wilderness study areas, and designated a new national conservation area (Sloan Canyon) in Clark County, Nevada. Also during these years, Congress designated over 1.5 million acres of BLM-managed land as wilderness, including the King Range Wilderness in California, Ojito Wilderness in New Mexico, and Muddy Mountains and Parsnip Peak Wilderness in Nevada.<sup>6</sup>

By the end of 2008, congressional proposals for new designations that had strong public support

## Establishment of the National Landscape Conservation System | By Tom Fry

Throughout its history, the Bureau of Land Management (BLM) has managed lands in a manner that protects special and unique scenic, biological, and other natural resources while at the same time managing multiple uses on those lands. Through its land use planning process, the agency has identified areas worthy of protection—some for agency administrative designation and some for recommendation for Presidential or congressional designation. The latter designations, such as wilderness areas, national scenic trails, and national historic trails, have sometimes allowed the lands to remain under the jurisdiction and management of the BLM. Often, however, the designations have been accompanied by the transfer of the lands to another agency.

For half a century, from 1946 to 1996, every one of the 17 new national monuments established under the Antiquities Act of 1906 was transferred from the BLM's jurisdiction to the National Park Service's jurisdiction. BLM career professionals had long argued that these lands had remained in a state worthy of protection due to the BLM's stewardship, and that therefore they should remain under BLM's jurisdiction once they received special designation from Congress or the President. I heard this line of reasoning not only from career staff, but also from retirees and representatives of the Public Lands Foundation.

This intellectual argument became real when the BLM identified a spectacular landscape in Utah with an array of scientific and historic resources worthy of monument designation. The BLM career staff put together the materials to support a monument designation under the Antiquities Act. As rumors of the project spread throughout the Department of the Interior, there were those who assumed the new monument would be transferred to the jurisdiction of the National Park Service. However, Secretary Bruce Babbitt and Solicitor John Leshy had been working with BLM's career professionals and were intrigued by the idea of a new kind of national monument that would be managed by the BLM. The discussions with the Secretary centered around a designation that would allow the lands to be managed in a multiple use manner consistent with the protection of the resources identified in the designation. And when the President issued the proclamation in 1996, the Grand Staircase-Escalante National Monument was entrusted to the care of the BLM.

Over the next several years, the BLM continued to identify areas worthy of protection and designation as either national monuments or national conservation areas. Some of these areas were identified for protection by local communities, and they all became the subject of public discussion and collaboration with those communities, states, and Congress. By early 2000, there were approximately 20 proposals put together by BLM teams in the field that were reporting to the BLM Director's Office and the Secretary's Office. As these proposals became national conservation areas through legislation or national monuments through Presidential proclamation, all to be managed by the BLM, it became clear that President Clinton and Secretary Babbitt were building a new system of conservation units.

BLM's monuments and national conservation areas were different from the parks and refuges of its sister agencies. While they may contain wilderness units, they were not managed as de facto wilderness. The BLM designations identified the prime conservation values to be protected on the



Grand Staircase-Escalante National Monument visitor center in Utah.

lands but also allowed any other uses that are compatible with the protection of those values. For instance, hunting and grazing can be compatible with the protection of lands in a BLM monument, while they would be excluded in a park. And a monument that is designated to protect archaeological resources can have oil and gas development where it is compatible with the protection of the primary conservation resources.

There was a great deal of debate over what to name BLM's new system of designated lands as well as over which lands should be included in the system. In the end, Secretary Babbitt named it the National Landscape Conservation System (NLCS) and it was to include all areas designated as national monuments under the Antiquities Act and all areas established by Congress, including but not limited to national conservation areas, wilderness areas, national wild and scenic rivers, national scenic trails, and national historic trails. The system would protect some of the nation's most remarkable and rugged landscapes for present and future generations and enable the public to experience the solitude and splendor of these last, great open spaces by providing numerous opportunities for exploration and discovery.

A director was established for the new NLCS, and the NLCS director reported to the BLM director. The NLCS office contained two groups of employees dedicated to the policy and administration of lands within the system. Those lands continued to be managed by field career professionals, who worked to build coalitions and partnerships with the surrounding communities. Managers of the NLCS lands and units were integrated within the structure of the BLM management system of state directors and field managers while still being part of this new nationally recognized system.

The success of the NLCS is a victory for the professional career staff of the BLM. It is due to their stewardship before and after designation of the lands that each designation was sustained and that the entire system was accepted and codified in law and has continued to grow.

*Tom Fry* was the BLM director in 2000; he also served as acting director and as deputy director for the BLM. Prior to that, Tom was the director of the Minerals Management Service. He later served as president of National Ocean Industries Association, from which he retired in 2010, and he continues to serve on various corporate and foundation boards.

were pending in several western states. One example is the Dominguez-Escalante National Conservation Area in western Colorado. Local county commissioners funded research by Mesa State College (now Colorado Mesa University) and the Public Lands Partnership to assess the level of public support for the designation.<sup>7</sup> A series of public forums in 2006 and 2007 led to a grassroots movement in support of conservation designation.

Local county and community leaders approached Senator Ken Salazar, who spearheaded legislation in 2008.<sup>8</sup> Congress ultimately passed the legislation as part of the Omnibus Public Land Management Act of 2009. The national conservation area encompasses about 210,000 acres of public land in Mesa, Delta, and Montrose Counties and includes the 66,280-acre Dominguez Canyon Wilderness.<sup>9</sup>



Dominguez-Escalante National Conservation Area in Colorado.

Another major development was the establishment of the Conservation Lands Foundation in 2007. Unlike the congressionally chartered National Park and National Forest Foundations, the Conservation Lands Foundation is a private endeavor. It strives to achieve on-the-ground results by supporting local friends groups and building support for new conservation designations. The Foundation was instrumental in establishing a bipartisan NLCS caucus in the U.S. House of Representatives and a bill to give permanent status to the NLCS.

Also during this time, the BLM's Executive Leadership Team was wrestling with new management challenges, including the selection of NLCS unit managers. In the end, the Executive Leadership Team decided to hire managers for national monuments and national conservation areas (hired at the local, not headquarters, level) and to leave other units under the jurisdiction of the local BLM office.<sup>10</sup>

The BLM's management also addressed questions on budgetary and management accounting. Funding a geographically based system with a programmatically based budget complicated formal reporting systems. The agency had no budget category specific to the NLCS except wilderness. Funding and tracking of work in NLCS units crossed all programs in the BLM such as wildlife, range, and recreation. At one point, because of the number of programs and NLCS units, tracking funding allocations for the system required a graph almost 30 feet long. Clearly, this funding method was not workable. In 2009, the BLM created a budget category for national monuments and national conservation areas to fund base operations; contributing programs continued to fund other units.



Jupiter Inlet Lighthouse Outstanding Natural Area in Florida.

### The National Landscape Conservation System Extends to the Subtropics | By Bruce Dawson

On May 8, 2008, Public Law 110-229 designated south Florida's Jupiter Inlet Lighthouse Outstanding Natural Area (ONA) as part of the Bureau of Land Management's National Landscape Conservation System (NLCS). Of the nearly 900 units currently within the NLCS, this ONA is the first unit east of the Mississippi River and certainly the first to manage habitat for the West Indian manatee, which is listed as endangered under the Federal Endangered Species Act. Designation of this "island of green" in heavily urbanized Palm Beach County is significant—it extends the NLCS from the Pacific to the Atlantic, making it a truly national system.

The Jupiter Inlet Lighthouse ONA is home to a remarkable array of natural and cultural resources not typically found on BLM-managed public lands. It is one of the rare geographic points on the planet where these two sets of resource values intersect in such striking fashion. For example, this 120-acre site provides habitat for 25 special status species (including four on the federal endangered species list) and yet also has cultural resource values so rich that 5,000 years of human occupation has been documented.

There are few places where history and the natural environment have so perfectly converged. The abundant natural resources, such as fresh water, rich fisheries, and wildlife, lured Juan Ponce de Leon in 1513 to take respite at Jupiter Inlet for several days. The bluff at the confluence on the Loxahatchee and Indian Rivers attracted indigenous people for thousands of years and provided the optimal location to construct a lighthouse in 1860 to safely guide ships past the treacherous reefs and sandbars off of Jupiter Inlet. The Indian River, with its meandering mangrove islands, played a key role in concealing blockade runners during the Civil War. Today, the same Indian River, which graces the eastern border of the ONA, is home to one of the richest and most biologically diverse estuaries in North America.

The story of the Jupiter Inlet ONA is truly a BLM story. The lighthouse sits on land originally withdrawn from the public domain and transferred to the Lighthouse Service (which later became part of the U.S. Coast Guard) through an 1854 Executive order by President Franklin Pierce. Five years later, in December 1859, two schooners sailed from Philadelphia to the

vast wilderness of south Florida on a mission to build the Jupiter Inlet Lighthouse. The task was completed in a remarkable 5 months—less than a year before the start of the Civil War.

Nearly a century and a half later, beginning in the late 1990s (and continuing today), the U.S. Coast Guard began returning land it no longer needed to the public domain. The return of the Jupiter Inlet area to the public domain inspired grassroots interest in conserving and managing its special values. Jupiter Inlet was designated an area of critical environmental concern (ACEC) in the BLM's Florida resource management plan (RMP), and a unique partnership of federal, county, municipal, and nongovernmental entities known as the Jupiter Inlet Working Group, led by the BLM, was formed. The working group collaborated to strike a balance on a wide range of issues at the site, ranging from public access to preservation of imperiled habitat and from recreational opportunities to protection of the sacred trust of the people who came before us.

With BLM's Yaquina Head ONA in Oregon as a prototype, local communities began working with their congressional delegations and BLM's Southeastern States Field Office (then the Jackson Field Office) to pursue an NLCS designation. It literally did take a village (and a town). The Village of Tequesta and the Town of Jupiter, as well as the Palm Beach Board of County Commissioners and the Loxahatchee River Historical Society, passed resolutions in support of the NLCS concept for the Jupiter Inlet Lighthouse site. In fact, the mayor of Jupiter testified before the House Subcommittee on National Parks, Forests, and Public Lands in support of the proposed legislation. In April 2008, the group's efforts were rewarded—they received the Secretary of the Interior's Cooperative Conservation Award, and the 110th Congress passed legislation to establish the Jupiter Inlet Lighthouse ONA as a part of the NLCS.

The Jupiter Inlet acreage has come full circle, from being withdrawn from the public domain for lighthouse purposes in the mid-19th century to once again becoming public land as part of the NLCS in the beginning of the 21st century, allowing the BLM to "protect, conserve, and enhance" this treasured landscape and its myriad values.



Osprey clutching a fish.



Manatee approaching kayakers near the shore.



Pelicans flying near the lighthouse.

*Bruce Dawson* began his BLM career as a range conservationist in the Ukiah District in California in 1979. He held several positions in the Washington Office, serving on the rangeland resources and budget staffs and as the chief of the BLM's wild horse and burro program. He was also the manager for the Southeastern States Field Office.

## The Department Addresses Wilderness Challenges

One of the early tasks of the NLCS staff was to provide field guidance on a new wilderness inventory handbook that the BLM released on January 10, 2001, 10 days before the change in administration.<sup>11</sup> The handbook had taken several years to develop in concert with the BLM state offices. The BLM's wilderness staff then developed the accompanying field guidance, but never issued it because of what was to follow.

In 2003, the Department of the Interior settled a lawsuit with the State of Utah over the BLM's wilderness reviews. Through the land use planning process, BLM field offices were making incremental adjustments in wilderness boundaries and areas with wilderness characteristics during the 1990s. These areas became known as "202" wilderness study areas since they came about because of a land use plan decisions under section 202 of FLPMA. In 1996, Secretary Babbitt, concerned that Utah's

original inventory was not comprehensive, initiated a reinventory of BLM lands in Utah. The State of Utah and others filed a lawsuit challenging the BLM's authority to do this.

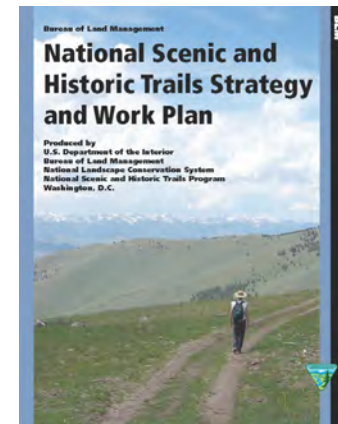
The 2003 "Norton settlement" stipulated that the BLM no longer had authority to conduct wilderness reviews or establish new wilderness study areas. It did recognize the BLM's authority under Section 201 of FLPMA to inventory public lands, including wilderness characteristics, and to consider the results in land use planning under section 202 of FLPMA.

As part of the settlement, the BLM rescinded its handbook on wilderness inventory and provided interim policy through instruction memorandums; they expired in 2004, leaving the BLM without adequate wilderness inventory policy and, thus, vulnerable to litigation. In fact, the BLM lost lawsuits in court on this issue in Oregon and Utah.<sup>12</sup> Wilderness policy took a back seat until a new administration took the reins in 2009.

## Partners Help Manage National Scenic and Historic Trails

The BLM manages land along 2 national scenic trails and 10 national historic trails in 10 western states—more miles of national historic trails than any other federal agency. When Wyoming experienced an energy boom in the early 2000s, the BLM pioneered trail protection work on historic settings, trail viewsheds, and visual simulations, working closely with trail partners. The Oregon-California Trails Association helped review visuals for more than 6,000 oil and gas drilling applications immediately. The BLM state directors worked closely with industry representatives, state officials, partners, and the congressional delegation, attempting to balance trail protection and energy development. Consequently, the 2011 draft Lander plan included a preferred alternative corridor that was more than 6 miles wide.

The BLM organized a "National Trails Workshop" in 2004 in Riverside, California, and nearly 100 people representing the BLM and various trail and federal partners attended. More than 250 issues raised were incorporated in a "National Scenic and Historic Trails Strategy and Work Plan" endorsed by BLM Director Kathleen Clarke in 2006.



BLM Director Kathleen Clarke.

## Pulling Together to Preserve History | By Mike Abel

Dust, heat, wind, cold . . . hardships, joys, triumphs, challenges . . . the adventure, the gamble, the seemingly endless march—all were experienced by travelers heading westward along the Oregon, Mormon, California, and Pony Express Trails, and all are part of a great story. Many paths and many characters all converged on the east to west journey along the North Platte River at the site of present day Casper, Wyoming. Here, over 160 years after the first organized Euro-American footsteps, the stories are still told, no longer by campfire and on horseback, but through the BLM's National Historic Trails Interpretive Center (NHTIC).

On the eastern edge of the Rockies, it is still many days journey to South Pass. Where the tall and short grass prairies have been left far behind and high desert plant and animal communities abound, the river corridor is restricted to a mere one-half mile or less because of low mountains to the south and sand dunes and broken terrain to the north. The westward trails, which had ranged up to several miles apart and in width in some areas, converge by the design of nature for the last crossing of the Platte. The dry overland route to the Sweetwater and other drainages awaits many miles to the west and south.

How did the early emigrants tackle the daunting task of moving West to begin new lives? They formed partnerships, they banded together, and they became teams of many sizes and kinds, for they understood that working together ensured the best chances for success (and survival). Teamwork is also the mainstay of the NHTIC. Envisioned well over 20 years ago by trail and history enthusiasts from the local area, the NHTIC concept was born of an idea to honor this amazing part of American history. As the concept grew, citizens formed the National Historic Trails Center Foundation to encourage support for accurately telling the stories of the mid-19th century pioneers traveling the trails across the state. The nonprofit foundation, facing many obstacles on its own journey, joined with the city of Casper and the BLM in a unique partnership to make this dream a reality.

By architectural design and color, the center reflects the influence of the land, water, and sky. It opened in 2002 on a high hill overlooking the Platte and the city. At nearly 24,000 square feet, it offers a 100-seat theater and seven exhibit galleries describing the Native American presence, early European explorers, and the four major national

historic trails, along with multimedia and interactive displays that bring the history of the West to life. The connections to the journeys are accomplished by using stories from actual pioneer diaries.

This partnership is unique in that the city donated the land, the BLM built the building and staffs the facility, and the foundation raised funds for and owns and maintains the center's exhibits and galleries. Each partner contributed millions of dollars, and together, through cooperation and joint determination, they reached their goal of establishing the center, just as the pioneers reached their goal of crossing the river only a short distance and many years away. The foundation's executive director has an office in the center and focuses on fundraising and upkeep and planning for the exhibits. The BLM staff offers visitor orientations, information, and a regular schedule of speakers, programs, historic reenactments, and other special events.

The center hosts thousands of schoolchildren from all grade levels throughout the year. A strong volunteer corps assists the staff with tours and provides the backbone for telling the stories of the pioneers as they recorded them. The BLM also taps another important resource by employing youth, especially college students, to assist visitors and help them understand the cultural significance of the trails.

The National Historic Trails Interpretive Center, part of the National Landscape Conservation System, is a gateway to learning about the pioneers' stories, the commitments they made that changed their lives forever, and their journeys across the country. Visitors are awed by the actual sites and locations across Wyoming and the West where history was made and is still preserved, treasured, and enjoyed. In Wyoming, the BLM, through the NLCS, offers unmatched beauty and unspoiled remnants of the historic trails of the greatest overland migration in this nation's history.



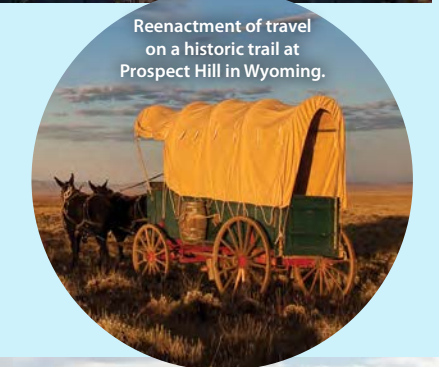
Mike Abel is the former director of the BLM's National Historic Trails Interpretive Center in Casper, Wyoming, and is currently the manager of planning, social, and cultural resources for the Wyoming State Office. He has worked for municipal and state governments in Wyoming and Iowa in recreation, education, resource protection, land management, and urban planning over the past 30 years.



Pioneer reenactors Rachel and Kim Merchant.



Marker along the Oregon Trail near South Pass in Wyoming.



Reenactment of travel on a historic trail at Prospect Hill in Wyoming.



## Public Lands Experience Record Fire Seasons

In 2000, the nation experienced one of its worst fire seasons. For the first time in the history of available records, the number of acres burned on all lands across the country topped 8 million acres. Nearly a

quarter of those acres were BLM-managed lands—largely in the Great Basin States of Nevada, Utah, and southern Idaho—where there were a record 3,485 fires.

As a result of the Great Basin fires, the BLM implemented the Great Basin Restoration Initiative

and established a team to address issues pertaining to wildfires and invasive plants. The Great Basin fires presaged a decade that continued to see fire records shattered throughout the West, spawning the term “mega fire” and resulting in soaring costs, changes in fire policy implementation, and new strategies to battle wildfires.

### Great Basin Restoration Initiative | By Mike Pellant

The Great Basin Restoration Initiative (GBRI) began in 1999 as a result of a catastrophic wildfire season that burned 1.7 million acres of rangelands, mostly in Nevada. BLM’s Nevada State Director Bob Abbey worked with the National Interagency Fire Center (NIFC) to address the cycle of invasive annual grasses and wildfires in the Great Basin. A team of BLM and state resource and fire specialists set out to identify the resource, social, and economic issues caused by invasive species and wildfires in the Great Basin and lay out a strategy to address these issues. This strategy became known as the GBRI, and it was outlined in two publications, “Out of Ashes, An Opportunity” and “The Great Basin: Healing the Land.” I was selected as the GBRI coordinator in 2003 and, understanding the great challenges facing the public lands of the Great Basin, I felt a strong responsibility to move the initiative forward.

The GBRI strategy envisioned a basinwide restoration program grounded in science, monitoring and evaluation, technology transfer, and local involvement. The goal was a strategic, proactive program emphasizing the restoration and maintenance of rangeland health. The funding mechanism for GBRI was eventually incorporated into the national fire plan, “Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President In Response to the Wildfires of 2000,” which called for restoring, rehabilitating, or maintaining fire-adapted ecosystems using appropriate tools to provide sustainable environmental, social, and economic benefits. The GBRI has provided a framework to incorporate good science into land treatments, develop native plant seed sources, and share information across the Great Basin.

In 2001, the GBRI staff led development and implementation of the Great Basin Native Plant Selection and Increase Project, part of BLM’s native plant program. This regional project involves 27 cooperators working on increasing the availability of native plant seeds and developing strategies and equipment to increase managers’ success in restoration projects. A strong partnership with the U.S. Forest Service Rocky Mountain Research Station has supported the direction and accomplishments of this applied research project. The GBRI staff also led the Joint Fire Science Program’s

SageSTEP Project to test treatments to address cheatgrass and pinyon and/or juniper encroachment in sagebrush steppe ecosystems. I was involved in the design and implementation of this regional science program, helping to establish 17 research sites across the Great Basin and Columbia Plateau and serving as a liaison between BLM managers and project scientists.

The GBRI staff has also been involved in developing strategies and protocols for regional assessments and planning. In 2006, the BLM selected a site proposed under the GBRI, the Owyhee Uplands (in the corner of Idaho, Nevada, and Oregon), as one of two pilot regional projects supported by the national assessment, inventory, and monitoring program. This project provided a wealth of information on assessing and monitoring landscape-level resources, which has been integrated into the BLM’s healthy lands and sage-grouse conservation programs.

Climate change and its effects on the resources and people in the Great Basin represent new challenges. Science tells us that temperatures will rise, precipitation will become more variable, and an increase in greenhouse gases will favor nonnative vegetation, such as cheatgrass, over native vegetation. It also tells us that wildfires will increase in size and intensity, which appears to be happening now.

In fact, wildfires have continued to grow. I remember that the “big” wildfires back in the Boise District in the early 1980s were 100,000 acres. We are now entering the era of the “megafire” as evidenced by the 2007 Murphy Complex Fire, which burned 653,000 acres of rangeland in south-central Idaho, extending into the Jarbidge Mountains of Nevada.

Over the past decade, the GBRI has had a positive influence on science-based restoration in the Great Basin, but huge challenges remain. I used to think that success would be measured by smaller and fewer wildfires and greatly reduced cheatgrass in the Great Basin. I now realize that success is maintaining intact native plant communities and strategically restoring the highest priority areas.

Aldo Leopold wrote in 1949, “I listened carefully for clues whether the West has accepted cheat as a necessary evil, to be lived with until kingdom come, or whether it regards cheat as a challenge to rectify its past errors in land-use. I found the hopeless attitude almost universal.” GBRI has provided hope that with good science and dedicated land managers, the situation is not hopeless, even though the challenges are great.

*Mike Pellant* was the coordinator for the Great Basin Restoration Initiative and the DOI representative to the United Nations Convention to Combat Desertification prior to his retirement. He started his BLM career in 1976 as a range conservationist and inventory team leader in Moab, Utah.

## Agencies Develop a National Fire Plan

The 2000 fire season led to the development of the National Fire Plan, a series of documents addressing five key points: making all necessary firefighting resources available, restoring landscapes and rebuilding communities, investing in projects to reduce fire risk, working directly with communities, and being accountable to the public and to Congress. A surge in funding accompanied the plan to enhance both federal fire programs and collaborative planning with community partners.<sup>13</sup> The BLM brought more engines on board, hired more firefighters, and strengthened its fire career ladder by creating new long-term and career-seasonal positions. Both community and hazardous fuels management programs received large boosts.

“Most fire managers across the BLM recognized that funding may not always be there, so they were conservative and smart about growing too fast,” said Tim Murphy, the BLM’s former assistant director for fire and aviation. “We have benefitted tremendously from the career ladders that stemmed from the National Fire Plan, the fuels management program that has made us more effective in reducing and managing hazardous fuels, and the community programs that have helped us establish ongoing partnerships with communities.”<sup>14</sup>

Through much of the decade, the BLM’s rural fire assistance program provided training and equipment for small fire departments that, through agreements and partnerships, were often the first to respond to wildfire ignitions on or affecting BLM land. The community assistance program brought citizens and local officials to the table in collaborative planning efforts with the BLM, resulting in community wildfire protection plans

designed to identify and manage hazardous fuels; reduce wildfire threats to homes and businesses; and enhance overall protection and safety of firefighters, citizens, and communities.

As implementation of the National Fire Plan began, the nation continued to see more dangerous and severe fire conditions. Fuel accumulations, drought, an expanding wildland–urban interface, climate change, and the spread of invasive species, along with other factors, all converged, creating a “perfect storm.” These conditions led to an increasing number of fires and “megafires” that burned with greater intensity and severity, threatening more and more homes. Six of the 10 most active fire seasons on record, in terms of acres burned nationally, occurred between 2000 and 2007, peaking at 8.7 million acres and 9.3 million acres burned in 2005 and 2007, respectively.

“There were tremendous challenges in managing the increasing complexity and scope of the fire seasons and the size, intensity, and scale of the fires we were seeing in those years,” said Tom Boatner, chief of fire operations for the BLM from 2003 to 2008.<sup>15</sup>

The BLM, along with other federal agencies, was continuing to catch more than 90 percent of all fire starts and successfully suppress them in the initial attack stage; however, the small percentage of fires escaping initial attack grew larger and larger. Twenty-three fires exceeded 200,000 acres between 2000 and 2009, with multiple fires exceeding 500,000 acres, including the Murphy Complex Fire on the Idaho–Nevada border that burned 652,000 acres in 2007 and the Taylor Complex Fire in Alaska that burned 1.3 million acres in 2004.



Prescribed fire in sagebrush steppe in Idaho.



Burned area from the Murphy Complex Fire on the Idaho–Nevada border.

According to Boatner, an increase in calls to respond to other hazardous incidents exacerbated the complexities of fighting fire during this time. The efficiency and organizational effectiveness of the fire community's incident command system translated well to responses to other emergency incidents and disasters. BLM firefighters responded to incidents such as the 9/11 terrorist attacks in New York City and Washington, DC, in 2001, the

Space Shuttle Columbia recovery in 2003, and Hurricane Katrina in 2005.

“For me, personally, one of the biggest challenges was in figuring out how to make our agencies more flexible and agile to respond to the rapidly changing world we were seeing in fire and elsewhere,” Boatner said.<sup>16</sup>

Toward the end of the decade, the fire community responded to the worsening conditions on the landscape, the nearly exponential growth of wildland–urban interface areas, and the new era of extremely large fires by rethinking the management of those fires. That rethinking led to testing and implementation of new strategies and even new terminology to talk about fire management.

### Invasive Species Alter Fire Regimes and Fire Operations | By Ken Frederick

They have been called everything from the “bane of the rangeland” to a “biological emergency.” “They” are invasive species, and they tend to draw disdain from all corners of resource management. For the fire community, they mean more frequent, high-intensity fires that burn with extremely rapid rates of spread.

Those invasives then return quickly after a fire and further dominate and encroach into new areas, leading to a cycle of “quickly burn and rapidly return” that eventually pushes native grasses and shrubs out of their habitat. Postfire reseeding and rehabilitation efforts under the right conditions and in the right locations can help stem that tide. Unfortunately, invasive species have already established an unhealthy monoculture across large areas of the West. Nearly every area is feeling at least some effect of these invaders.

While climate change and the explosive growth of the wildland–urban interface are often considered the most dramatic agents of change affecting wildland fire, invasive species are a significant culprit in the size and frequency of fires throughout the West. For instance, invasive species, with their flammability and tendency to carry fire, have been a major factor in some of the West's largest fires in the mid-2000s.

In 2005, fires in Arizona burned nearly 250,000 acres of the Sonoran Desert, many in areas where fire had never before been recorded. Fires encroached into these areas thanks to the spread and flammability of invasive species. In early 2006, hundreds of fires (aided by invasive species) burned nearly a million acres in the Chihuahuan Desert of west Texas.

In 2007, the Murphy Complex Fire burned more than 650,000 acres in Idaho and Nevada, and the Milford Flat Fire, the largest in Utah history, scorched more than 363,000 acres. Overall, between 1990 and 2008, more than 21 percent—16 million acres—of the Great Basin had burned at least once, according to a Great Basin Restoration Initiative report.

Although ecologists point out numerous invasive species with wildfire implications, several stand at the top of the list:



Cheatgrass.



Medusahead.



Buffelgrass.



Western juniper.

**Cheatgrass** – An annual grass, this species already dominates some 25 million acres in the Great Basin alone. Cheatgrass germinates in the fall, overwinters as a seedling, and grows rapidly in the spring. By early summer, cheatgrass has already completed its life cycle. The dead, dried out plants create an exceptional fuel bed for wildfire.

**Medusahead** – Another winter annual, medusahead occupied an estimated 2.3 million acres in the early 2000s. It commonly follows, and then replaces, cheatgrass. Because it is high in silica, dead medusahead plants decompose slowly and remain available as a fuel for wildfire for several years.

**Buffelgrass** – An African perennial grass, buffelgrass was introduced into the United States in the 1930s as livestock forage. Currently, buffelgrass is present on an estimated tens of thousands of acres in 12 states, primarily across the southern third of the United States. Buffelgrass is a threat because it increases the frequency and intensity of wildfires in the ecosystems it invades. Like its cousins, buffelgrass responds well to fire and recolonizes burned areas faster than native grasses, shrubs, and cacti.

**Western Juniper** – Though native to arid western ecosystems, juniper has taken advantage of fire exclusion to move out of its historic habitat and invade new areas. Juniper affects fire regimes by displacing native plants from a landscape. Once juniper is well established, its thick stands fuel high-intensity wildfires when weather conditions favor ignition and spread. The hot-burning juniper fires often burn everything, essentially pushing the ecological “reset” button in the fire area. Unfortunately, all too often, the burned ground is quickly invaded by invasive annual grasses.

Whether they are a “biological emergency” or a “bane on the rangeland,” most experts agree that invasive species are here to stay and that they will continue altering fire regimes and affecting BLM firefighting operations. Firefighters will continue to face complex, rapidly spreading fires that burn with unusually high intensity across the BLM landscape.

*Ken Frederick* was a firefighter for more than a decade prior to entering public affairs. His career has included stops in Washington, Arizona, and Idaho. He has been a public affairs specialist at the National Interagency Fire Center in Boise, Idaho, and is currently the acting deputy state director for communications in the BLM's Idaho State Office.

### Life on a BLM Engine | By Kari Boyd-Peak

We had a sense it would be a busy fire season when an early summer report of smoke in June 2006 grew to a large, complex, and severe incident in just a few, short, exhausting days. The Suzie Fire was the worst of several fire starts ignited on a single day by a dry lightning storm that moved through the BLM's Elko District in Nevada.

I responded with my BLM Type 4 heavy engine and crew, and before we were even on the scene, I could tell we would have our hands full and ordered more resources. Our engine and crew, working with others, were successful in suppressing some sections of line, but the fire was growing too fast and in too many directions. It seemed as if there were no flanks—a head fire in all directions. We needed all the help we could get and ordered everything available.

Within 24 hours, and with strong erratic winds pushing in all directions, Suzie had engulfed three other fire starts and was threatening two towns in opposite directions, Elko to the east and Carlin to the west. My crew and I spent the following 3 days bouncing from task to task: providing structure protection at the University of Nevada Fire Science Academy, helping ranchers herd cattle to safety, directing helicopters to stock tanks for bucket fills, and running with drip torches to burn out from two-track roads to create a fire line. Suzie rolled through continuous sage and cheatgrass in spite of the best efforts by firefighters and an incident management team. The fire was not brought under control until many days later, after it had charred more than 70,000 acres.

The BLM relies heavily on wildland fire engines for initial and extended attack. They can mobilize quickly, navigate through rugged terrain, and have the capacity to carry enough water to suppress most fires

in the early stages. Fires that burn in relatively light fuels can be knocked down with what's called “pump and roll” action, a technique that has the driver of the engine following the flank of the fire and a person on a nozzle walking to the side or front, knocking down the flames on the move.

These engines carry enough hose to extend their reach by 800 feet as well as flares and other devices to ignite backfires or to burn out fuels to strengthen a control line. Chainsaws with safety equipment, pumps for moving water to the fire from another water source, and enough equipment to sustain a three- to five-person crew for up to 5 days are also on board. These items are inventoried daily to ensure all the proper equipment is in place and readily accessible.

This standardized engine fleet throughout the BLM allows for cost savings and flexibility. Engine crews are interchangeable. It is fairly common for firefighters or engine bosses to fly to other parts of the country (or the next BLM fire yard) and staff another engine, very similar to their own, with little or no additional training.

Fires typically move fast and burn hot in the grass and brushy fuels that dominate most BLM land. As a result, attacking these fires must be fast-paced and intense to suppress them before they become large and costly. Operating from some of the most advanced wildland fire engines available helps BLM firefighters accomplish their work with a high degree of success.

As it turned out, 2006 was an especially severe fire year. Close to 10 million acres burned across the country; in Nevada, 1,279 fires burned more than 1.3 million acres. While the Suzie Fire was neither the largest nor the smallest fire on BLM land, it illustrates the challenges BLM firefighters face every year in managing wildland fire throughout the West.



Engine working the Barth Fire near Carlin, Nevada.



BLM fire engine near Elko, Nevada.

*Kari Boyd-Peak* is currently in the BLM external affairs group at the National Interagency Fire Center. Previously she was a firefighter and engine module leader in Montana and Nevada and then served as a logistics coordinator at the National Interagency Coordination Center.

## Mapping Supports Firefighting Efforts

Improvements in technology allowed the BLM to develop its Geographic Coordinate Data Base, which provided the foundation for using cadastral survey data in wildland fire decisionmaking. Starting in 2004, the U.S. Forest Service and the BLM worked with federal, county, and state officials to compile GIS-based parcel data from more than 75 percent of the counties in the western United States, as well as from Alaska and the Southeast.

Protection of structures during wildland fire is extremely important, but it increases the threats to firefighter safety and increases fire management costs. Processing the collected parcel data allowed

the creation of “building cluster points” where one or more occupied structures may exist. This method identified structures with more than 90 percent accuracy. With GIS technology and location data on structures in the fire’s path, wildfire response teams could rapidly establish protection priorities, helping them get firefighters in the right places for the right reasons.

The Wildland Fire Decision Support System, chartered in 2005, incorporated these building cluster points. The system enabled layers of spatial data (showing locations and shapes of various features) to be displayed on a map, and the building cluster points are part of a layer showing values at risk from fire. All federal firefighting agencies

use the system to build, document, and justify fire management plans.

The Geographic Coordinate Data Base has become integral to fire decisions. For example, in June 2008, a major lightning storm passed through northern California, igniting over 800 fires. More than 25 of the fires escaped initial attack and grew very large, presenting decisionmakers with difficult prioritization challenges. Building cluster summaries provided an effective means to compare critical values at risk from each fire. Maps displaying building clusters enabled rapid identification of pockets of structures that were most critically threatened and helped determine the appropriate assignment of resources.<sup>17</sup>

## A National Energy Policy Emerges

Energy policy was at the forefront of the national agenda from 2001 to 2009 during the Bush administration. Despite earlier efforts to stimulate production of domestic energy sources, by the year 2000, the United States’ dependence on foreign oil had risen steadily for three decades. Crude oil imports increased from 3.2 million barrels per day in 1973 to 9.1 million barrels per day in 2000. The proportion of oil provided by foreign suppliers climbed during the same period from 35 percent to 53 percent.<sup>18</sup> Prices fluctuated wildly as supplies tightened and as demand from the emerging economies of China and India swelled.

Two weeks after taking office in January 2001, President George W. Bush formed a White House team tasked with developing a national energy policy. One of its goals was to tackle the growing energy security crisis by establishing courses of action to ensure the development of reliable supplies of domestic energy.

In May 2001, the National Energy Policy Development Group submitted a report to the President. The report recommended, among other measures, that the Department of the Interior examine regulatory impediments to the development of oil and gas resources on federal lands, expand lease sales in the National Petroleum Reserve–Alaska, and work with Congress to authorize drilling in the coastal plain of the Arctic National Wildlife Refuge.<sup>19</sup>

The Alaska National Interest Lands Conservation Act of 1980 specifically closed the refuge to oil and gas exploration and development “until authorized by an act of Congress.” With the coastal plain



Northeast National Petroleum Reserve—Alaska.

estimated to hold billions of barrels of technically recoverable oil, the debate over whether to authorize the BLM to conduct lease sales in the area simmered over the decades.

The pro-drilling camp—led by Senator Ted Stevens and Representative Don Young—grappled with environmental interests in the early 2000s over opening the refuge. The threat of Senate filibusters killed the measure 4 years in a row, with antidevelopment advocates barely surviving an endeavor by Senator Stevens to attach a drilling rider to a defense authorization bill in December 2005.<sup>20</sup>

The Department of the Interior also squared off against environmental groups over other areas

of Alaska. A furor erupted in January 2005 when the BLM announced a plan for a lease sale in the northeast National Petroleum Reserve–Alaska. The sale included lands around Teshekpuk Lake that Secretary Babbitt banned from leasing because they contained sensitive caribou and goose habitat.<sup>21</sup> Environmentalists sued successfully to block the sale. To protect wildlife and its habitat, the BLM designated 219,000 acres of Teshekpuk Lake and its islands as unavailable for leasing. The BLM deferred leasing on 430,000 acres north and east of Teshekpuk Lake until 2018 and on another 1.6 million acres in the far northwest part of the National Petroleum Reserve–Alaska until 2014. After conducting additional NEPA analyses, the BLM finally held the lease sale in September 2008, attracting \$31 million in bids.<sup>22</sup>

### Milford Flat: Utah’s Largest Fire Rehabilitation Project | *By Lola Bird*

On July 6, 2007, lightning sparked a raging wildfire near Milford, Utah, that spread rapidly in cheatgrass, sagebrush, and pinyon-juniper stands. The fire burned on BLM, state, private, and Bureau of Indian Affairs lands. By the time the fire was contained on July 19, it had burned more than 363,000 acres. It became Utah’s largest recorded fire and subsequently led to the largest fire rehabilitation effort in Utah’s history.

Once the fire was controlled, managers knew that immediate action was needed, so stabilization and rehabilitation planning efforts began right away. Because burned areas had mixed land ownership, many people were involved in this effort. State and federal agencies came together under the umbrella of the Utah Partners for Conservation and Development (Utah PCD) to design and implement stabilization actions for the entire burned area regardless of land ownership. An implementation team, led by the BLM, was formed with members from each entity in the Utah PCD as well as county commissioners and private landowners.

Land management agencies conducted postfire assessments of the burned areas and determined that stabilization and rehabilitation efforts were needed on 202,000 acres (more than 300 square miles). A rehabilitation effort of this magnitude required more than 1.7 million pounds of seed at a cost of approximately \$17 million for the seed and application. Seed mixes consisted of both native and nonnative species, including western wheatgrass, Indian ricegrass, bottlebrush, sand dropseed,

and prostrate kochia. Beginning in October 2007, treatments were applied using four different methods: aerial seeding, drill seeding, single chaining, and imprinter seeding. In addition, the implementation team treated noxious weed infestations, replaced 74 miles of burned fence, constructed 78 miles of new fence, and developed 315 sediment basins.

Once the treatments were completed in spring 2008, monitoring began, using existing range monitoring sites and newly established sites. First-year monitoring focused on recording what was implemented on the ground. Second-year monitoring focused on the effectiveness of the applied treatments and how well they met stated objectives. Additional monitoring was conducted using remote sensing and big game habitat trend data from the State of Utah. Soil stabilization (dust) and impacts on avian populations were monitored as well.

The project was extremely successful because of the support and contributions of all partners involved. The State of Utah handled all the procurement of treatment contracts and contract administration oversight. The BLM arranged for all of the equipment, and all entities provided labor and support. This daunting task was complicated by size, complexity, seasonal and climatic limitations, and budget but was completed ahead of schedule because of the dedication and cooperation of all the partners involved.

*Lola Bird* is a public affairs specialist in the BLM Utah State Office. She has been with the BLM since 2001.



Results from single chaining method.



Results from drilling seeding method.

## Congress Passes the Energy Policy Act of 2005

The Energy Policy Act incorporated many of the National Energy Policy Development Group's recommendations. Congress passed the act in August 2005 after a tumultuous 5-year battle on Capitol Hill. Among its provisions was an amendment to the Energy Policy and Conservation Act (EPCA) of 2000, which required the BLM and other agencies to inventory oil and natural gas resources on 99 million acres of public lands and examine impediments to development of those resources.

The first EPCA report, released in 2003, addressed five areas. In 2006, an expanded report (phase II)

that addressed 11 areas encompassing 99 million acres superseded the first report. The 2006 report found about one-half of the oil and one-quarter of the gas in the areas inventoried closed to leasing. As directed by the Energy Policy Act of 2005, the report also examined impediments to development created by "conditions of approval," restrictions the BLM attaches to drilling permits, such as a prohibition against drilling in areas where elk and deer range during winter months.<sup>23</sup>

Oil and gas operators had been complaining about delays in the permitting process for years. An industry report released in 2003 claimed, for instance, that the average time for the BLM to approve applications for permits to drill had risen

from 84 days in 2001 to 175 days in 2003, despite language in the agency's oil and gas regulations and procedures suggesting that the permitting process should take 30 days.<sup>24</sup> The report came out during a dramatic rise in industry interest in oil and gas development on public lands, challenging the field managers to balance the uses of multiple resources.

This increased interest and activity created bottlenecks in the required NEPA analyses, resulting in longer lead times to get an application approved. NEPA analyses grew more complex, and more members of the public were participating and commenting on all oil and gas activity, from planning to leasing and permitting. Reasonable foreseeable development analyses formed the basis for the NEPA analyses, which quickly rendered them obsolete because the level of actual activity extended far beyond the activity analyzed. In many cases, the BLM had to conduct new (often court-ordered) NEPA analyses, leading to delays in overall processing times. Still, from 2003 to 2004, the number of applications for permits to drill approved by the BLM increased more than 50 percent. Nevertheless, the backlog of permits filed by industry in the Powder River Basin and other areas with intense production activity grew to the thousands. Coalbed natural gas permits were a large share of the drilling permit activity, and the permit numbers soared; later, industry shifted to shale gas and oil.

The White House issued an Executive order in May 2001 encouraging federal agencies to take steps to expedite energy projects. The BLM implemented a variety of mechanisms to address the permitting shortfall. In March 2007, the BLM issued its first revision to "Onshore Oil and Gas Order Number 1," which had governed permitting and leasing since

## Powder River Basin Resurveys: 20 Years—16,000 Monuments | By Joel T. Ebner

In October 1988, I walked into BLM's Gillette Project Office in Wyoming, which is in the heart of the mineral-rich Powder River Basin. I had been hired as a land surveyor to conduct dependent resurveys and had just stepped into the office of the most intensive resurvey project ever undertaken by the BLM. I was there to help the BLM fulfill its cadastral survey duties, which descended directly from the United States General Land Office.

The Powder River Basin is defined by a geological structure encompassing all of Campbell County and portions of seven other counties in northeastern Wyoming. The terrain is dominated by sagebrush prairies and open rolling grasslands punctuated by red, rimrocked buttes and deep sandstone canyons that drain into the Powder River. Wildlife in the area includes antelope, mule deer, coyotes, foxes, rabbits, and rattlesnakes. But because of its vast quantities of coal, oil, and gas reserves, the Powder River Basin is best described with one word: hydrocarbons.

Most of the surface in the basin (approximately 70 percent) is privately owned, but significant portions of the subsurface minerals were retained by the federal government when the lands were patented. In addition, in every township, two sections (16 and 36) were reserved as school sections for the State of Wyoming. The result is a mixture of mineral ownership, with the minerals in any given 40-acre parcel (lease unit) being privately, federally, or state owned.

The energy crisis of the 1970s made developing domestic energy resources a priority, and to the Powder River Basin, an area identified as having the largest onshore federal mineral reserves in the United States, that meant boom time. So the boom was on, but because of antiquated surveys that were monumented with sticks and stones, reports of difficulties locating lease boundaries on the ground began pouring in from private surveying firms, landowners, and industry representatives. BLM managers soon became concerned that these high-risk boundaries were being incorrectly located.

Through the support of BLM district and state managers, Wyoming's congressional delegation, and private industry, the Gillette Project Office was established. The office was opened on April 1, 1986, with the goal of resurveying 107 townships—an effort that encompassed some 2.5 million acres—in the Powder River Basin.

The office was staffed with a project manager, assistant project manager, six land surveyors, a geodesist, and a staff assistant. Eighteen temporary employees (three per crew) were hired to assist the land surveyors. Each of the surveyors was assigned the task of resurveying one full township at a time, and it typically took around 3 months to complete a township. Normally, a surveyor could complete two townships in a field season, which generally ran from the first week of April to the middle of October. The winter months were spent producing the official returns (field notes and plats) of the surveys.

From 1986 through 1994, the number of field crews and level of production remained consistent, 80 townships were resurveyed, and approximately 11,000 monuments were set. After 1994, due to a combination of declining funding, changing priorities, a slowdown in oil exploration, and the completion of much of the work, production levels gradually tapered off.

But the resurveys of full townships continued, with another land surveyor and I carrying on the project through the 2006 field season. On May 25, 2007, I walked into the office for the last time, after 20 years of surveying in the basin; my main task for the day was closing the door and turning out the lights on the Gillette Project Office. Mission accomplished! In all, we completed the resurvey of 111 townships comprising more than 2.5 million acres, ran nearly 8,000 miles of survey line, and monumented approximately 16,000 corners.

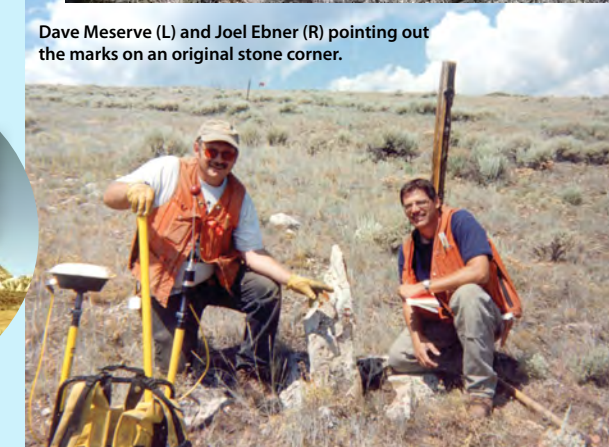
Today the Powder River Basin is the nation's preeminent coal producer, with the top ten producing mines in the country all located here, and Wyoming has led the nation in coal production since 1986. The Powder River Basin is also a major oil producing area, with 9.7 million barrels produced from wells on federal estate in 2009. But perhaps the biggest payoff from the resurvey project has occurred in recent years. Intensive drilling for coalbed natural gas began in 1998, and as of 2012, nearly 27,000 wells had been drilled (each needing to be located in its proper 40-acre lease unit). Current plans allow for another 51,000 wells to be drilled in the future.



Dave Meserve measuring the position for a survey corner using GPS.



Leonard Mardikian (L) and Kane Hellebust (R) preparing to set an iron post survey monument.



Dave Meserve (L) and Joel Ebner (R) pointing out the marks on an original stone corner.



Kurt Schenk (L) and Mike Whitmore (R) preparing the total station to begin a traverse.



Oil rigs near the Wind River Mountains in Wyoming.

October 1983. The revision incorporated language from the Energy Policy Act of 2005 mandating that the BLM render a decision on permits within 30 days of receiving a complete permit application.<sup>25</sup>

Meeting permit deadlines continued to challenge the BLM, but permitting rates improved. An internal 2007 report found, for example, that the rate improved 3 years in a row in seven “pilot offices,” which were established by the Energy Policy Act of 2005 to improve the efficiency of permit processing.<sup>26</sup> The seven pilot offices initially issued about 80 percent of all BLM oil and gas permits; as development expanded and activity became concentrated in nearby offices, the pilot offices issued closer to 60 percent of the permits.

The amended onshore order addressed another growing controversy as well. The Stock Raising Homestead Act of 1916 divided millions of acres of western land so that private citizens owned the surface estate and the federal government owned the subsurface mineral rights. Ranchers complained for years that drilling operations, over which they had no veto power, had fouled their property. The revised order required oil and gas firms to communicate more with surface landowners on plans to develop subsurface federal mineral rights. In addition, if no “good faith” agreement was reached, operators had to post a surface owner protection bond to protect against possible damages.<sup>27</sup> The BLM developed guidance to better mitigate these split estate issues as more homeowners awakened to find that they did not own the minerals; these issues especially affected ranch owners as well as people who purchased a second home or retirement home in areas with ongoing growth in oil and gas exploration.

The amended order also encouraged operators to adopt “best management practices,” such as drilling multiple wells from the same drill pad, to mitigate against potential environmental harm from production activities.<sup>28</sup> Hydraulic fracturing, plus longer and more prevalent use of horizontal drilling and completion technology, pushed the BLM to keep up with industry advances. The horizontal technology enabled the BLM to work with industry to creatively condense the development footprint, apply best practices, reduce habitat fragmentation, and drill a large number of wellbores from the same drill pad.

### Reform Efforts Result In Protests and Litigation

Despite the attempts at reform, environmentalists employed various legal remedies to reverse the Bush administration’s efforts to open vast swaths of public land to development. Protests—which must be resolved prior to issuance of a lease—were filed on only 1 percent of all parcels offered at auction in 1988, but by 2009, nearly half of all parcels were being protested.<sup>29</sup> Oil and gas field activity received greater scrutiny from a larger public audience that monitored the data and information the BLM posted on the Internet. The BLM hoped to restore order to the process in 2005 by promulgating a policy that required the filing of protests 15 days prior to a lease sale.<sup>30</sup> But it was another 5 years before the BLM attempted a more thorough overhaul of the system.

NEPA became the tool of choice for environmental advocates as they filed protests claiming inadequate resource analysis or consideration of impacts. In 2004, the Natural Resources Defense Council and others filed suit against the BLM, saying an RMP that authorized drilling of up to 10,000 new wells

in New Mexico’s San Juan Basin violated the law and would harm tribal lands, recreational activities, and ranching operations.<sup>31</sup> The Southern Utah Wilderness Alliance and others sued in 2004 to stop a plan to allow seismic exploration surveys for oil and gas in Utah’s Nine Mile Canyon.<sup>32</sup> The State of New Mexico filed suit in 2005 over a plan to lease a parcel in the Otero Mesa grassland, claiming potential harm to wildlife habitat and ground water.<sup>33</sup> Earthjustice and others sued in 2008 to block issuance of \$114 million worth of leases on Colorado’s Roan Plateau, decrying the potential damage to wildlife and streams.<sup>34</sup>

The suits had mixed results, with the courts dismissing cases in which they deemed the BLM’s NEPA analysis adequate, and requiring the BLM to conduct additional reviews before leasing or development could proceed in other cases.



### The Legendary Roan Plateau | By Jamie Connell, with David Boyd

The story of the management of the Roan Plateau in western Colorado really begins nearly 100 years ago, when the Taft administration began designating naval petroleum reserves and naval oil shale reserves to ensure the U.S. Navy would have adequate oil resources. The 35,000-acre Naval Oil Shale Reserve (NOSR) Number 1 was designated on the southeastern edge of the Roan Plateau above the town of Rifle. The adjacent 22,000-acre Naval Oil Shale Reserve Number 3 was designated below the rim of the Roan Plateau.

It’s rather ironic that what would become a national debate about how to manage the NOSRs around the Roan Plateau would center on whether or not to develop the mineral resources, given that the area was specifically held in reserve for its mineral development potential. In the 1990s, the debate had mostly centered on the Department of Energy drilling its own oil and gas wells below the rim of the plateau. The land was not actually leased, so it was not subject to the Mineral Leasing Act. All the revenue from the 24 natural gas wells went straight to the federal government rather than being split with state and local governments. The question arose, “Do we lease the NOSRs for oil and gas and keep the lands in public hands or do we sell the NOSRs for private oil and gas development?”

Congress’ answer to the question came in 1997 with the transfer of jurisdiction from the Department of Energy to the Department of the Interior: Lease the lands already in production within 1 year, lease the rest as soon as practicable, and manage it all for multiple uses. That answer might seem straightforward, but by the time I arrived in Glenwood Springs as the field manager in 2003, which coincided with the beginning of the largest natural gas boom in decades, people were expressing diverse opinions as to what “as soon as practicable” and “manage for multiple uses” really meant. It soon became my job to help sort this out when the BLM amended the Roan Plateau Resource Management Plan in 2004.

The NOSRs on and below the Roan Plateau were known to have *a lot* of natural gas underneath them. The federal recoverable reserve was estimated at 8.9 trillion cubic feet. The NOSRs are also well known locally for their big game hunting opportunities. In addition, the area holds some of Colorado’s genetically pure cutthroat trout and several rare plants. While not pristine in the never-touched-by-humans sense, the Roan has retained some pristine qualities because it is so remote.

Most of the controversy leading up to the release of the draft Roan Plateau resource management plan amendment in 2004 had focused on managing the top of the plateau rather than the lands below the rim. We had looked for an innovative way to provide protections for sensitive resources while still following our interpretation of congressional direction, which was to lease the NOSRs as soon as practicable.

The draft plan amendment analyzed a range of alternatives, but offered a unique approach as its preferred alternative: Make the lands below the rim available for leasing immediately, but defer leasing on top of the plateau until 80 percent of the anticipated

wells below the rim had been drilled. In that time, which might be more than a decade, drilling technology should improve, thereby reducing impacts to the top.

After a 120-day public comment period on the draft, the BLM had received nearly 100,000 comment letters. One of the concerns with the preferred alternative was that concentrating development below the rim would concentrate development in key wintering areas for big game that summered on top of the plateau. Amid almost daily media coverage from local as well as national outlets in 2005, the BLM met with its cooperating agencies for six all-day work sessions to hammer out a new compromise plan.

To our knowledge, nothing like what we came up with had been tried: Lease the top all at once and require the leaseholders to form a unit prior to drilling the first well. Operators could then determine how they would meet requirements for highly coordinated development focusing on existing roads, one ridge at a time. No more than 1 percent of the land on top could be disturbed at any one time, creating a strong incentive to effectively reclaim disturbed lands in a timely manner. The number of roads on top was reduced and then capped. Well pads could be no closer than one-half mile apart. Development would largely be contained to the roads on top of the ridges, away from the sensitive canyons. Development would occur only on the ridgetops, thus protecting sensitive canyon and stream resources. Drilling locations would be constructed on one ridge at a time to reduce the impacts to wildlife and recreation.

The final record of decision was signed in early 2008. The parcels on top and the unleased lands below the rim totaled about 55,000 acres and were leased for \$114 million—the highest amount ever generated from an oil and gas lease sale in the lower 48 states.

The decision was challenged in court, and in 2012, a judge set the decision aside and remanded it back to the BLM for further action. Regardless of the outcome, the partnerships created by this effort and the creative solutions generated by the team of dedicated public servants will have a lasting positive impact on the Roan Plateau and other areas in the country where energy assets and sensitive ecologic resources coexist.



*Jamie Connell* is the BLM state director for Oregon/Washington and has also been the state director for Montana/Dakotas. She previously served as the BLM district manager for Colorado’s Northwest District and the field manager for the BLM in Glenwood Springs.

*David Boyd* has been a public affairs specialist for the BLM offices in northwestern Colorado since 2006. Prior to that, he was the public affairs specialist for the Arizona Strip District.

## Interest in Oil Shale Development Increases

In 2006, with demand from Asian economies surging and Gulf of Mexico production reeling from a devastating hurricane season in 2005, crude oil prices rose above \$50 a barrel for the first time.<sup>35</sup> It finally appeared as if it could be economically feasible to renew efforts to harness the billions of barrels of shale oil believed to reside in the Green River Formation of Colorado, Utah, and Wyoming. Armed with authorizing language in the 2005 Energy Policy Act, the BLM tackled the issue on three fronts.

In December 2006, the BLM issued five leases, giving a green light to research, development, and demonstration projects on public lands in Colorado's Piceance Basin. Units of Shell, Chevron, and other firms used the land to test various technologies, both above- and belowground, for mining and processing of the shale formations.<sup>36</sup> In November 2008, the BLM issued rules for commercial leasing of oil shale development rights, including lease size, royalty rates, and timely development of leaseholds.<sup>37</sup> Simultaneously, the BLM completed a programmatic EIS that set aside 1.9 million acres of Green River land for oil shale development.<sup>38</sup>

## Rights-of-Way Provide Pathways to Energy Security

One of the obstacles to traditional and renewable energy development is the lack of transmission capacity to transport the energy from production sites, which are usually in rural or remote locations, to where it is needed, which is typically in urban or suburban areas. In 2008, the BLM and its federal partners completed a final programmatic EIS for



Right-of-way for electric power lines west of Casper, Wyoming.

designation of energy corridors on western federal lands as part of their response to directives in the Energy Policy Act of 2005. The programmatic EIS identified energy corridors to facilitate future siting of oil, gas, and hydrogen pipelines; renewable energy development projects; and electricity transmission and distribution facilities to meet the region's increasing energy demands while mitigating potential harmful effects to the environment. Eighty-two percent, or approximately 5,000 miles, of the corridors identified were located on BLM-managed lands. BLM Director Jim Caswell called the effort "a significant step in addressing some of the critical energy infrastructure issues in the West" that will "help relieve congestion, improve reliability, and enhance the national electric grid."<sup>39</sup>

## States Implement Renewable Energy Standards

During the 2000s, the United States was sitting on a mountain of coal to fuel its powerplants. A 2007 assessment found that BLM lands in the Powder River Basin alone contained 550 million short

tons of coal or enough to power one-quarter of American homes each year.<sup>40</sup>

But with concerns growing over climate change, state governments throughout the United States began mandating generation of a minimum percentage of electricity within their borders from alternative energy sources. Arizona was the first western state to enact a "renewable portfolio standard," requiring that 15 percent of the power in the state be generated from renewable energy by 2025.<sup>41</sup>

The new state standards spurred a "land rush" in the early to mid-2000s, inundating the BLM with applications for rights-of-way to construct wind and solar energy projects on public lands. The BLM's California office received 17 new applications for wind energy rights-of-way in fiscal year 2003, the year following California's enactment of a renewable portfolio standard to acquire 20 percent of its power from renewable energy sources by 2017. The Nevada office received 25 new applications the same year. The number of pending wind energy right-of-way applications on public lands in the western states grew to more than 150 applications by fiscal year 2007.



Wind energy right-of-way in California.

## Just How Big Is That Right-of-Way Grant? | By Tom Hurshman

As a national right-of-way (ROW) project manager, I am used to dealing with big projects and big resource conflicts on big areas of public land. The BLM has approved ROW grants for many different kinds of energy generation and transmission projects on public lands, including wind and solar development projects.

Interest in solar projects began to grow, when in 2002, the State of California established a renewables portfolio standard requiring energy companies to obtain 20 percent of their power from renewable sources by 2020 (it has since been increased to 33 percent by 2020). In 2005, Congress approved the Energy Policy Act, which set a goal of producing 10,000 megawatts of renewable energy by 2015. In 2009, Interior Secretary Dirk Kempthorne signed Secretarial Order 3283, "Enhancing Renewable Energy Development on the Public Lands." As a result, BLM field offices in the desert regions of California, Arizona, and Nevada were deluged by a virtual land rush of ROW applications for large-scale solar projects. The applications in California alone affected over 1 million acres. The scale of many proposals covered 5 to 10 square miles or more.

As applications came pouring in, BLM offices could hardly keep up with checking land records, verifying land status, establishing serial numbers, and sending out preliminary agreements for payment for processing the applications. Multiple ROW applications for the same public land tracts began piling up, requiring the BLM to consider those that were first in line before those that were second or third. The BLM had little policy for processing large-scale solar applications and no clear direction on what information needed to be included with a solar project ROW application. The continual influx of new applications left little time to think about processing the applications already on hand.

I was the first BLM project manager assigned to process one of these commercial-scale solar ROW applications in 2007. I was used to dealing with natural gas pipeline and electric transmission companies that knew what BLM wanted in an application. They understood the process of gathering data for an EIS and inventorying for threatened and endangered species and cultural resources. These new applicants were different. Most of the applications were from upstart renewable energy companies with a smattering of venture capital investors that had never heard of the BLM or a ROW grant, let alone the National

Environmental Policy Act (NEPA), Endangered Species Act, or National Historic Preservation Act. They wanted detailed explanations for every piece of information we asked them to provide. They did not understand why we needed an actual preliminary project design versus an artist's rendition of their project. Special interest groups jumped into the mix. Broad-scale support for renewable energy was countered by NIMBY ("not-in-my-back-yard") opposition from vocal and quite polarized interest groups.

The first large-scale solar applications wound up on the "Fast-Track" list. Compressed timelines were established, and never in the ROW program had so much emphasis been placed upon completing an analysis on time. NEPA documents and decisions were prepared, double checked, reviewed by multiple solicitors, and signed at the highest level within the Department of the Interior.

When I visited the site of a proposed commercial solar plant, I thought I understood the scope of the area that would be used and impacted. I'd wave my arms around saying the solar fields will extend from here to well beyond that transmission line way over there and then over to this little knob. However, when the bulldozers and earthmovers started rolling, and I saw tractors, pickups, and fencing crews, all accompanied by an army of biological monitors way off in the distance, I realized, "Man, this is bigger than I thought." I walked around the first solar field as it was being fenced, which was less than one-third of the total area that was approved under the ROW grant. I walked for 2½ hours before I was back to where I started, and I was not walking slowly. It had been a 5-mile hike. There were two more solar fields, each slightly larger than this one, that were going to be cleared next.

Within the principles of multiple use, the mandate to use public land for renewable energy development is clear. BLM's decisionmaking processes, as well as time, public sentiment, the economy, and perhaps the courts, will tell us how many big solar developments will be built on public land in the future. At a groundbreaking ceremony, Secretary of the Interior Ken Salazar stated, "We made believers out of skeptics." I admit I was a bit skeptical that the project would break ground, but I am proud to have been a part of this step toward energy independence taking place on our public land.

*Tom Hurshman* was a national right-of-way project manager with the Washington Office, stationed in Montrose, Colorado. He joined the BLM in 1979 and worked in the lands and realty program in field offices, district offices, and the Washington Office.



Solar panels in California.



Solar block installation in eastern Riverside County in California.



Fence installation for a solar energy project in California.

The BLM received the first solar energy right-of-way applications for the public lands in 2004; the number of those applications increased to more than 200 by fiscal year 2007. The majority of the applications received were for public lands in California, Nevada, and Arizona that had wind and solar energy resource potential and were closest to the power load demands for electricity in southern California. Eight western states had enacted renewable portfolio standards by 2012, and California had accelerated its standard to 33 percent renewable energy by 2020.<sup>42</sup>

With the National Energy Policy of 2001 directing the Department of the Interior to review restrictions on energy production on public lands, the BLM undertook a series of moves designed to promote siting of renewable energy projects. In 2003, the agency began work on a wind energy programmatic EIS that was completed in 2005. It would amend 52 land use plans in 11 western states to provide for expedited permitting of wind energy projects on some 20.6 million acres of the public lands with wind energy potential.<sup>43</sup> In 2004, the BLM issued its first policy guidance

to field offices on the processing of right-of-way applications for solar energy projects proposed in their planning areas.<sup>44</sup> The BLM initiated a solar energy programmatic EIS in 2008.<sup>45</sup> In 2007, the BLM launched a programmatic EIS that eventually opened 190 million acres to geothermal energy development and, in keeping with the National Energy Policy, worked towards eliminating the backlog of pending geothermal lease applications.<sup>46</sup>

### The President Launches the Healthy Forests Initiative

Following the massive wildfires early in the spring and summer of 2002, President Bush, accompanied by Secretary of the Interior Gale Norton, Secretary of Agriculture Ann Veneman, BLM Director Kathleen Clarke, and BLM Oregon State Director Elaine Brong toured the Squires Fire in the BLM's Medford District to view the impacts. While in Medford, the President launched "Healthy Forests, An Initiative for Wildfire Prevention and Stronger Communities," also known as the Healthy Forests Initiative. The initiative had three goals:

- To significantly step up efforts to prevent the damage caused by catastrophic wildfires by reducing unnecessary regulatory obstacles that hinder active forest management.
- To work with Congress to pass legislation that addresses the unhealthy forest crisis by expediting procedures for forest thinning and restoration projects.
- To fulfill the promises of the 1994 Northwest Forest Plan to ensure sustainable forest management and appropriate timber production.

### Initiative Addresses Hazardous Fuels and Rehabilitation

The President directed the Secretaries of the Interior and Agriculture, together with the Chairman of the Council on Environmental Quality, to improve regulatory processes to reduce the risk of catastrophic wildland fires. In response, the BLM and the U.S. Forest Service developed two new categorical exclusions under NEPA. They allowed the agencies to implement high-priority



Fuels reduction project at Muddy Mountain Environmental Education Area near Casper, Wyoming.

of Appeals for the Ninth Circuit declared the Department of Agriculture's categorical exclusion for hazardous fuels reduction invalid, and in March 2008, the BLM discontinued use of the Department of the Interior's similar categorical exclusion for decisions within the jurisdiction of the Ninth Circuit.<sup>48</sup>

Another key provision of the Healthy Forests Initiative addressed the requirements for interagency consultation under section 7 of the Endangered Species Act. New guidance directed the U.S. Fish and Wildlife Service and the National Marine Fisheries Service to balance the short-term impacts of fuel treatments on listed species against the long-term benefits to species and the long-term harm to species that could result from taking no action, a provision that remained under litigation as of 2012.

### Stewardship Contracting Becomes a Land Management Tool

Stewardship contracts were included in the Healthy Forests Initiative and authorized in the Consolidated Appropriations Resolution of 2003 as tools to improve ecological health and provide local economic stimulus.<sup>49</sup> Agencies permitted private companies, tribes, nonprofit organizations, and others to keep and sell forest and rangeland products in exchange for performing services that improved forest and rangeland health. Because the BLM could issue long-term contracts—for up to 10 years—community enterprises felt more secure in investing in the equipment and infrastructure needed to accomplish the work. The stewardship services generated forest products, including woody biomass and sawlogs, used to make specialty products or to produce biomass energy.

### BLM's Innovative Approaches to Renewable Energy Development in Arizona | By Kathy Pedrick

As interest in renewable energy heightened in the early 2000s, the BLM experienced something akin to the gold and land rushes of prior centuries. Developers, utility corporations, and get-rich-quick promoters descended on southwestern deserts to file claims for a piece of solar pie. In Arizona alone, more than 450,000 acres of land were under application by 2008. Southern California and southern Nevada saw similar levels of activity.

In response to these staggering numbers, the BLM initiated a solar programmatic environmental impact statement (EIS) to address common issues, analyzing high-potential solar areas in six western states. The BLM identified three solar study areas in Arizona.

One of the major concerns identified by the public was the vast amount of fragile desert landscape that stood to be impacted by the development of solar energy. In addition to potential land disturbance, the amount of water used by many solar technologies was identified as a serious threat to states struggling after more than 10 years of drought. A common theme at public meetings was concern over using Arizona's scarce water to generate power for export to the energy-hungry West.

In 2009, the BLM in Arizona proposed a project that looked at siting renewable energy projects on previously disturbed or damaged lands and lands with low natural resource sensitivity.

Dubbed the Restoration Design Energy Project (RDEP), the effort was funded from the American Recovery and Reinvestment Act. The BLM initiated an EIS to amend resource management plans in Arizona to allow the siting of renewable energy facilities on these disturbed or damaged lands.

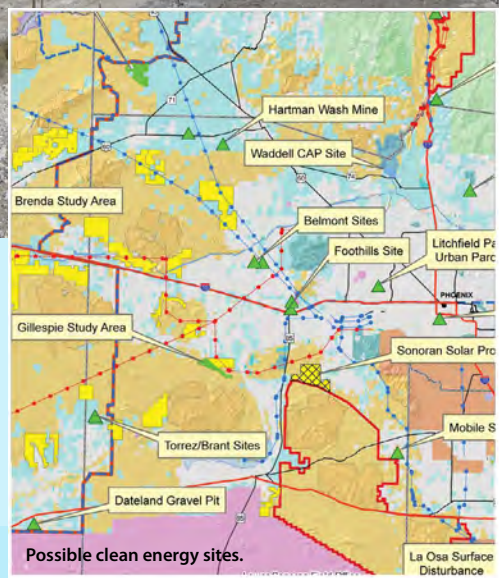
The public, stakeholders, utility corporations, and landowners were asked to nominate disturbed sites to be considered for analysis in the EIS. These sites were used as "case studies" to analyze the disturbance and remediation or restoration a potential developer might expect on different types of disturbed lands such as closed landfills, retired agricultural lands, mine tailings or spoil sites, and sand and gravel pits.

The BLM's goal was to be able to inform the public, policymakers, developers, and landowners where the best areas in Arizona might be for siting renewable energy on disturbed lands. By looking at previously impacted sites, areas of low resource sensitivity, areas without water concerns, and areas close to load demand and transmission lines, the RDEP blueprint targets appropriate public lands for renewable energy development. This approach minimizes the disturbance to Arizona's amazing natural and cultural resources while capturing its abundant sunshine for energy.

*Kathy Pedrick* was a special assistant to the BLM state director in Arizona from 2008 to 2015. Kathy was also the Arizona strategies coordinator and the project manager for the Restoration Design Energy Project as well as the Arizona borderland coordinator for the BLM.



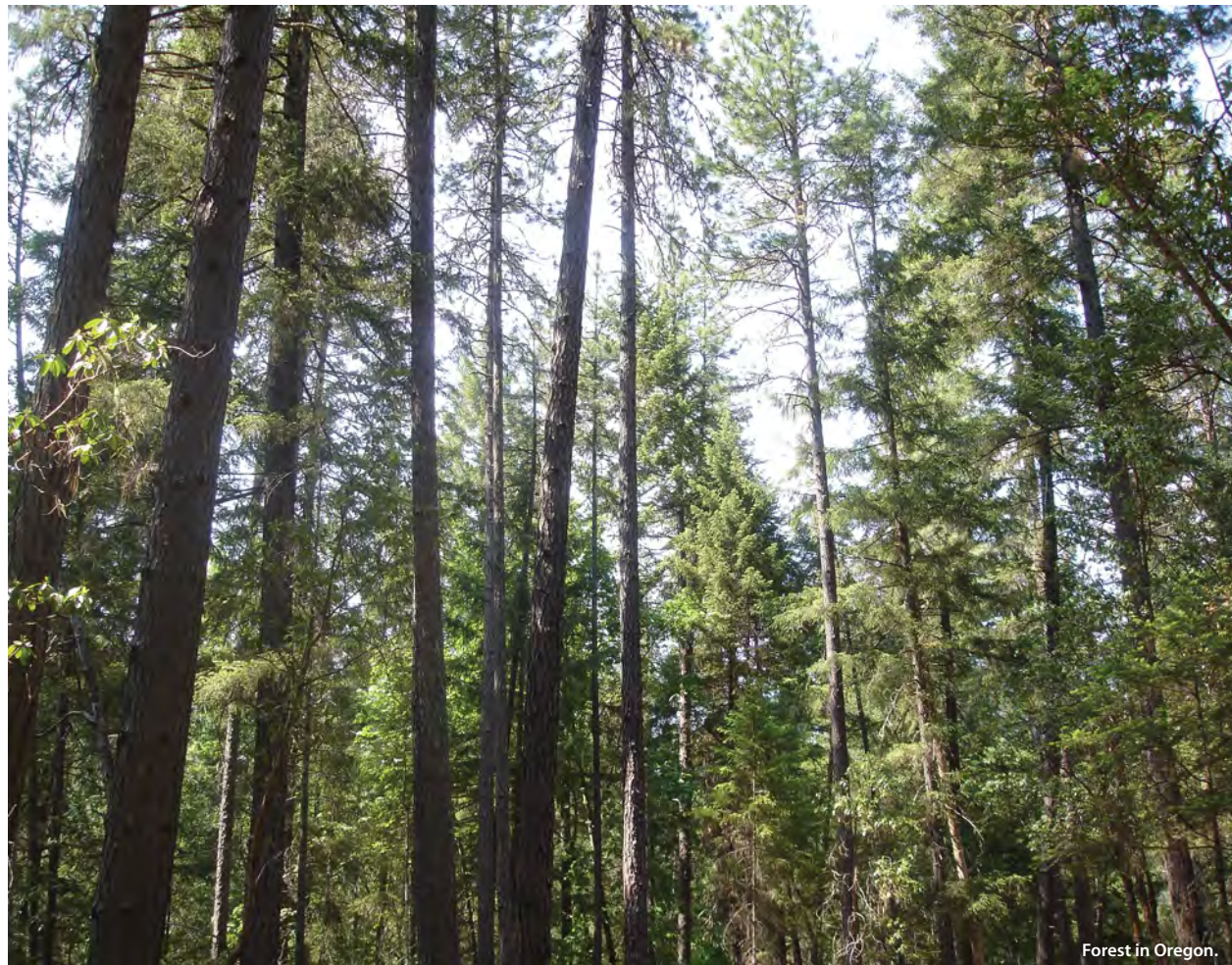
Christmas Mine, a nominated renewable energy site in Arizona.



The BLM moved quickly to put the new authority to use, expanding from 2 contracts on 300 acres in fiscal year 2003, to 22 contracts on 6,100 acres in fiscal year 2004, to 58 contracts covering 15,700 acres in fiscal year 2005. By the end of fiscal year 2006, the BLM had used stewardship contracting authority cumulatively over 3 years for more than 100 projects covering over 35,000 acres of public lands.<sup>50</sup>

Early initiatives such as the Gerber Stew project, which began in 2004 in south-central Oregon,

demonstrated the promise of stewardship contracting. Over 10 years, the project would treat 10,000 acres to improve forest and woodland health, improve rangeland health, reduce hazardous fuels in the wildland–urban interface, improve wildlife and fisheries habitat, and enhance riparian areas. In its first 3 years, with 1,500 acres under contract, the project resulted in the sale of 750 million board feet of timber and 15,000 tons of biomass for energy development.<sup>51</sup>



In Cañon City, Colorado, the BLM awarded stewardship contracts in 2005 that reduced fuels on the wildland–urban interface, improved forest health, and enhanced wildlife habitat. Additionally, the contracts produced 3,000 tons of biomass and 235,000 board feet of saw timber, providing woody biomass to Aquila Power and logs to local sawmills. The Aquila plant had generated 730 megawatts of electricity in 2004 using woody biomass and hoped to expand their use of biomass to 10 percent by 2015.<sup>52</sup>

### The Bureau Revises Its Western Oregon Plans

Overall, timber sales were still in decline during the 2000s. On the O&C lands in the Northwest, the BLM was not meeting the timber harvest goals of the Northwest Forest Plan because of continued litigation over timber sales. Consequently, in 2001, the American Forest Resource Council, the Association of O&C Counties, and organized labor filed motions to advance a suit against the BLM that they had initially filed when the Northwest Forest Plan became final. In 2003, a settlement agreement required the BLM to revise its six RMPs for western Oregon, replacing the Northwest Forest Plan as it pertained to BLM-managed lands. The BLM was to complete the revisions by the end of 2008 and include alternatives that complied with the *Headwaters, Inc. v. Bureau of Land Management* decision by the Ninth Circuit Court of Appeals in 1990. At least one alternative was to consider no reserves except as needed to protect listed species under the Endangered Species Act.

Concurrent with settlement negotiations, the BLM completed an evaluation of the 1995 Northwest Forest Plan-based RMPs. That evaluation revealed

that the BLM was failing to meet the 1995 RMP goals in that the sustainable timber harvest fell considerably below projections and the economic benefits were lacking. The BLM agreed that the RMPs needed revision.

The six plan revisions covered some 2.6 million acres of public lands in a 25-million-acre area spanning 18 counties. The majority of these BLM lands were timberlands interspersed in a checkerboard pattern with other land ownerships. The O&C Lands Act of 1937 covered most of the BLM-managed lands.

The BLM convened an interagency team to oversee the plan revisions. The team helped create GIS spatial models at regional scales to help establish plan alternatives and monitoring protocols. The BLM involved resource specialists, scientists, legal experts, and several cooperating agencies, including four federal agencies; the Coquille Indian Tribe; 17 O&C counties; and 10 Oregon state agencies in one of the most comprehensive planning efforts in BLM history. The BLM completed the Western Oregon Plan Revisions on schedule in December 2008, weeks before the change in administration.

The plan revisions adjusted late-successional and riparian management areas, primarily decreasing them, based on the latest recovery planning efforts and critical habitat designations for the spotted owl and aquatic species. The comprehensive GIS data, coupled with sophisticated models, allowed the scientists to design northern spotted owl management areas that had a higher probability than those in the Northwest Forest Plan of providing suitable habitat in the future. The record of decision for the plan revisions identified a timber harvest level of 502 million board feet (as compared



to 203 million board feet under the Northwest Forest Plan). It protected the majority of significant older and structurally complex forests within late-successional management areas. It also deferred timber harvest from most of the remaining older forest (stands older than 160 years) through 2023 to support owl recovery efforts and allow time for scientists to study the interaction between the northern spotted owl and the invasive barred owl.<sup>53</sup>

Within a month of the BLM's release of the Western Oregon Plan Revisions, conservation groups filed suits alleging that the BLM failed to consult adequately with the U.S. Fish and Wildlife Service and National Marine Fisheries Service over its plan revisions as required under section 7 of the Endangered Species Act. The BLM had determined that the plans would have no effect on listed species and that consultation would take place at the project level, where it could analyze site-specific effects. The timber industry also challenged the Western Oregon Plan Revisions in court, saying that they did not comply with procedural acts and the O&C Act of 1937. By this time, a new administration had taken office, which added yet another chapter to the story of western Oregon forest management in the BLM.

### The Secretary Announces the Healthy Lands Initiative

Interior Secretary Dirk Kempthorne announced the Healthy Lands Initiative in 2007 to “improve the health and productivity of public lands in today’s fast-changing West,” where “demand for public land uses and resources is at an all-time high.”<sup>54</sup> The initiative primarily focused on areas where energy development intersected with important wildlife habitat.



That year, Secretary Kempthorne allocated \$3 million for immediate on-the-ground restoration work. The Department leveraged its Healthy Lands Initiative funding with millions of dollars' worth of in-kind and monetary contributions from state and local governments, the Natural Resources



Interior Secretary  
Dirk Kempthorne

Conservation Service, private organizations, and the energy industry, enabling the BLM to carry out landscape-scale conservation work in key areas. The effort helped restore millions of acres throughout the West by capitalizing on ongoing, locally driven, collaborative efforts tailored to local needs.

One of these locally driven efforts was Restore New Mexico, which the BLM launched in 2005 to reduce invasive and noxious species and allow more desirable plants to flourish on the state's landscapes. Utah's Watershed Restoration Initiative,

a collaborative effort of the Utah Partners for Conservation and Development, which includes 14 state and federal natural resource agencies and a wide complement of private groups, also benefited from Healthy Lands Initiative funding, as did the Wyoming Landscape Conservation Initiative. Additionally, the Healthy Lands Initiative funded partnerships in Colorado, Idaho, Oregon, and Nevada. This work started to build a foundation for a new approach to managing vast landscapes across jurisdictions.

### Restore New Mexico: A Model for the Nation | By Jesse Juen

Seven years ago, a program was launched that would change the history of land management in New Mexico and the nation. A *vision* to work with partners in restoring degraded landscapes across the state became *action* and, with 2 million acres restored since 2005, *results* on a historic scale.

Partners under the Restore New Mexico initiative started with an ambitious goal: to pool their resources to restore hundreds of thousands of acres of land each year within priority watersheds, regardless of land ownership, leading to the restoration of landscapes to their full ecological potential. By "restoration" we mean soils, native vegetation, groundwater supplies, and wildlife habitat, not to mention the fabled landscapes of the American West, the special places that give us our sustenance and spirit.

Truth be told, we didn't know if this vision was doable on the scale we had hoped for. The bottom line was that we wanted to make a difference; everyone interested in restoring land was, *and is*, welcome to join us. It's only because of the many partners involved in this effort—the BLM, Natural Resources Conservation Service (NRCS), and other federal and state agencies, local communities, soil and water conservation districts, ranchers and other individuals, the energy industry, and conservation groups—that we have restored so much land.

As fate would have it, in 2006 the NRCS was piloting an effort to allow the use of Environmental Quality Incentives Program funds on federal lands in Arizona and New Mexico, provided that these funds were matched by the agencies and private landowners within grazing allotments. By 2012, we had

leveraged almost \$10 million in contributions toward these efforts with more than 350 partners.

Our motto has always been "Git R Done!" We have made tremendous strides in the amount of acreage treated, however, the restoration is not always immediate—sometimes it takes 3-6 years to see results. And there are still another 3.5 million acres in New Mexico that could use some sort of restoration work, such as thinning of overgrown forests; reductions in mesquite, creosote, and salt cedar; and reclamation of abandoned oil fields.

Energy companies are implementing voluntary conservation measures and best management practices in their operations. In 2009, the BLM and the U.S. Fish and Wildlife Service pioneered the use of cooperative conservation agreements on public lands leased for oil and gas development or livestock grazing to implement conservation measures for the lesser prairie-chicken and sand dune lizard, which are both candidates for listing under the Endangered Species Act.

So, what does the future hold? We will continue to expand restoration and reclamation efforts and recruit partners to join us. Our ground rules are simple: we're not playing a blame game, identifying which group was responsible for damaging what landscape. Neither is Restore New Mexico an ideological or political undertaking; it is a historic effort that will continue for the long term because of the substantial benefits it creates for the citizens of New Mexico and the nation.

*Jesse Juen* retired as the BLM's state director for New Mexico in 2015. Prior to that, he was a wildlife biologist, a field manager, and the group manager for national conservation areas and national monuments within BLM's National Landscape Conservation System office in Washington, DC.



Before mesquite treatment near Roswell, New Mexico.



After mesquite treatment in the same area.

### Habitat Assessments Take a Landscape Approach

As it was addressing landscape-level restoration efforts, the BLM also began looking at habitat conditions across entire landscapes. The approach emphasized conservation activities that could reduce the effects of widespread habitat stressors that crossed jurisdictional boundaries, such as invasive species or climate change.

These activities required working closely with partners, and the BLM strengthened its ties to many partner organizations, including state fish and game agencies. States completed their state wildlife action plans, which Congress requested to outline the steps needed to conserve wildlife and habitat before they become more rare and more costly to protect. The BLM staff worked with the states to implement measures on public lands.

### Protecting Species at Risk Becomes a Priority

Increasingly, large numbers of at-risk species depend on public lands for crucial habitat. During the early 2000s, the BLM continued developing conservation plans for such species and their habitats. The most visible of these efforts was the BLM's cooperative effort to conserve the greater sage-grouse and the sagebrush habitats it relied upon. Although the greater sage-grouse once lived



Lewistown Field Office employees tagging fences to make them more visible to greater sage-grouse.

in 10 western states, by the early 21st century, it occupied only about half of its historic range. Almost three-quarters of the remaining sagebrush habitat occur on lands managed by federal or state agencies; the BLM manages about half of the remaining sagebrush habitats in the United States.

The greater sage-grouse has experienced extensive habitat loss throughout the 20th century. More recently, habitat loss and fragmentation has occurred from energy development (both oil and gas and renewable energy projects), roads, transmission lines, and other human-made structures; invasive plants such as cheatgrass; and wildland fires.

In 2002, the BLM launched a national habitat conservation strategy for the sage-grouse, focusing on research to better understand the threats to the species and partnerships to maintain, enhance, and restore its habitat. Under the umbrella of the Western Association of Fish and Wildlife Agencies, the BLM worked with the U.S. Fish and Wildlife Service, U.S. Forest Service, and state wildlife agencies to develop the "Greater Sage-Grouse Comprehensive Conservation Strategy," which was used to coordinate habitat conservation efforts from regional to local scales. In addition, the BLM made sage-grouse conservation a priority in its fire program and the Great Basin Restoration Initiative.



White fence markers help greater sage-grouse avoid collisions with fences. Photo by Tom Koerner, USFWS.

### Wyoming Develops a Strategy for Sage-Grouse Conservation and Energy Development



Greater sage-grouse hen.

Wyoming became the focus of concerted conservation efforts for sage-grouse in light of increased energy development and the fact that the state supported about 40 percent of the entire population of greater sage-grouse. The BLM managed about 8 million acres of key habitat while also managing the development of vast federal energy resources in much of the state.

In 2006, Wyoming Governor David Freudenthal met with BLM and Department of the Interior representatives to discuss sage-grouse conservation throughout the state. Governor Freudenthal established a team that included representatives from the U.S. Fish and Wildlife Service, the BLM, landowners, industry, and conservationists to gather information on the species and develop a strategy to conserve it.

The strategy, implemented by an executive order from Governor Freudenthal, identified priority habitat areas that would provide high-density breeding, brood-rearing, and other seasonal habitats. The goal within these areas was to maintain current populations of sage-grouse by limiting or prohibiting activities that could cause habitat loss or fragmentation.

The scale of this effort was historic, according to the BLM's Wyoming State Director, Don Simpson, who noted that the approach would protect more than 80 percent of sage-grouse in the core areas. The BLM's Wyoming State Office subsequently adopted the state's plan in support of the state's management objectives.

## Looking Beyond the Strutting Grounds: Changing the Way the BLM Manages Wildlife Habitat | *By Dale Tribby*

Historically, when BLM biologists assessed impacts to wildlife from oil and gas authorizations on public lands, they rarely look beyond the local impact an individual action had on a particular species or habitat. Most mitigation measures had likewise been designed and applied well by well. Cumulative impacts were assessed no further than the border of the field, and mitigation was rarely applied across a landscape, such as an entire oil and gas field or wildlife home range.

At the turn of the 21st century, in the Powder River Basin, coalbed natural gas development was rapidly progressing from Wyoming into Montana. BLM biologists were beginning to question the effects of coalbed natural gas development on wildlife, and in particular, on sage-grouse. This was based on a known decline of sage-grouse populations throughout their range, and BLM biologists had documented a greater rate of decline of sage-grouse populations in and around areas of oil and gas development.

In the Energy Policy Act of 2005, Congress designated several BLM “Energy Act” pilot offices, including the Miles City (Montana) and Buffalo (Wyoming) Field Offices. These offices received significant funding for analysis, permit processing, research, and monitoring. The funding came at a time when the sage-grouse population in the Wyoming portion of the Powder River Basin was in decline, and the Buffalo Field Office sought to investigate relationships between energy development and the sage-grouse population.

With little development having yet occurred within the Montana portion of the Powder River Basin, the Miles City Field Office saw an opportunity for a more holistic look at the impact of energy development throughout a landscape. The Montana portion of the Powder River Basin had little BLM surface acreage, and although a large portion of the mineral estate was federally owned, all sites had little existing wildlife resource data. How was the BLM going to gather all the needed wildlife data, and once this information was collected, how was the development going to be managed?

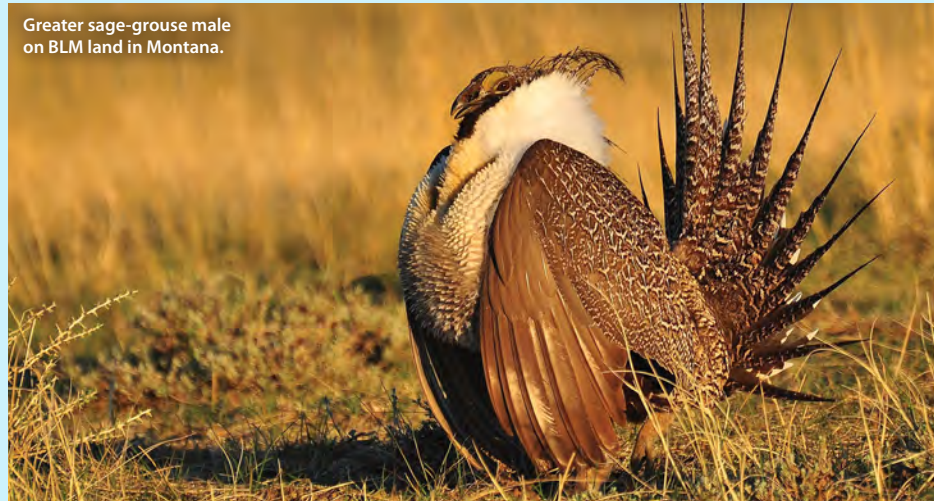
Existing resource management plans (RMPs) provided inadequate protections for sage-grouse, especially at what was quickly being recognized as a species in need of landscape-level management. As greater sage-grouse populations were declining across their range, there were petitions to list the sage-grouse as endangered, and the public was becoming increasingly aware of the sage-grouse’s plight.

The BLM’s Miles City wildlife biologist, Larry Rau, along with the former BLM Montana/Dakotas wildlife program lead, Roxanne Falise, pursued the idea of a landscape-level look at energy development. They recognized the need for a new set of oil and gas stipulations because the existing stipulations were not providing adequate protections. Concurrently, the BLM’s Buffalo wildlife biologists, Larry Gerard and Thomas Bills, were looking for partners to research energy impacts on sage-grouse. There was little support for this until the U.S. Department of Energy offered funding opportunities for agencies to evaluate impacts of energy development. Rau submitted an application for \$300,000 with the hope of taking a “landscape” approach. This approach had not been tested previously, and in the view of many, the age-old approach of looking at impacts project by project was sufficient.

Undeterred, the proponents pursued their landscape-level idea and contacted Dr. David Naugle, a new professor at the University of Montana. Naugle had experience studying landscape-level impacts on grassland birds in South Dakota. Intrigued by the BLM’s idea, he expressed interest in the project and ultimately used science to help formulate solutions. Two Ph.D. students, Brett Walker and Kevin Doherty, joined the team.

Although building a coalition progressed slowly, BLM wildlife biologists in both Montana and Wyoming saw the value and the implications of this research. Eventually, other agencies joined in, as did several industry and nongovernmental organizations. Naugle was an expert at leveraging limited funds needed to meet the financial demands of research of this magnitude. Through Naugle’s work, his students, and personnel from the BLM, support and understanding started to build. Naugle and his students rarely missed an opportunity to tell their story. The research clearly illustrated that impacts to sage-grouse populations must be analyzed at a much larger (landscape) level than the traditional well-by-well approach. Presentations and peer-reviewed papers explained the landscape needs of greater sage-grouse and the subsequent need to manage species at a landscape level.

This initial effort in the Powder River Basin spawned a new understanding and approach to wildlife research. In addition, the approach for managing sage-grouse habitats, as well as other wildlife habitats such as crucial big game winter ranges, has changed. Land use planning documents today reflect landscape-level management. The knowledge about impacts to greater sage-grouse has progressed from looking at the basic biology of the birds to research at a landscape level. Using this science and incorporating geographic information system technology, the BLM, in cooperation with its many partners, has moved toward identifying priority habitat for greater sage-grouse and other species of concern.



Greater sage-grouse male on BLM land in Montana.

*Dale Tribby* was the lead wildlife biologist in the Miles City Field Office in Montana until his retirement in 2015. Previously he served as the assistant field manager for renewable resources.

## New Plans Protects Aquatic Species

The BLM also aligned its fish habitat conservation program with the “National Fish Habitat Action Plan,” a nonregulatory, locally driven cooperative effort to focus on fish habitat throughout the nation. The plan evolved out of the National Fish Habitat Initiative, created in 2001 through the

Sport Fishing and Boating Partnership Council, and the BLM modeled it after the “North American Waterfowl Management Plan.” The BLM joined the Federal Caucus to develop and implement the action plan and became an active participant in at least nine partnerships, including those for desert fish, western native trout, and southwest Alaska salmon. In 2008, the BLM joined the

Aquatic Nuisance Species Task Force and its Western Regional Panel to address aquatic invasive species threatening BLM-managed waters. BLM state and field offices worked with their respective state agencies to address local concerns, provide educational materials, implement comprehensive state plans, and take on control projects such as eradicating the bullfrog in the Yellowstone River.



Fishing the Delta River in Alaska.



Boating recreation on Lake Havasu in Arizona.



Fishing pier at Mesquite Bay on Lake Havasu.



Lake Havasu volunteers helping BLM improve fish habitat.

### Lake Havasu Fisheries Improvement Program 1992-2011 | By Lori Cook

The lower Colorado River region is a unique desert environment. Over the past century, this environment has been influenced by dams, canals, agriculture, suburbia, and a water-oriented recreation industry that rivals others throughout the country.

Lake Havasu is a 25-mile-long reservoir that filled in 1942. It forms the border between Arizona and California and is a primary water distribution source for 25 million Americans. The lake created a treasured sport fishery that began to decline in the 1970s. As communities grew, so did fishing pressure. Good shoreline fishing became harder to find, and native fish were disappearing.

Around 1990, the Lake Havasu community began searching for long-term solutions. The BLM, as the administrator of the majority of the shoreline and the reservoir bottom, recognized the need for a solution and assembled stakeholders. Since 1992, the BLM has led a group of seven Department of the Interior, state, and private partners, assisted by hundreds of volunteers and other interests, in implementing the Lake Havasu Fisheries Improvement Program. The program aimed to improve and sustain the productivity and diversity of the fishery and enhance public access to it. The partners set three fundamental goals: (1) install 875 acres of artificial aquatic habitat structure in 42 separate coves, (2) construct at least six barrier-free public shoreline angling facilities, and (3) augment the populations of two endangered fish species by 30,000 fish each.

The partners implemented a 10-year plan at an estimated cost of \$28.5 million. They developed and equipped two independent shoreline worksites at opposite ends of the lake. Volunteers built a variety of “reef” structures composed primarily of construction-grade plastics or recycled wood products with concrete bases for anchors.

These structures were installed from the deck of a large pontoon boat, giving a whole new meaning to the term “range improvements.” Crews began filling Arizona and California coves with habitat structures, working toward the middle of the lake. This adaptive process was geared toward optimizing the durability, performance, and cost-effectiveness of bass, crappie, bluegill, and catfish habitat.

As work progressed, public docks with amenities were constructed. All sites were barrier free, fully accessible, and free of charge. Typical amenities included parking, interpretative signs, landscaping, restrooms, and benches. Marine and Navy reservists constructed several of these facilities. Their work

saved partner funds while providing hands-on, military-related training. Multiple generations now use these facilities regularly. Fishing season never ends in this water! The bounty has since entertained and fed countless Americans, while giving them a deeper appreciation for our priceless aquatic resources.

Meanwhile, the partners pioneered the art of rearing endangered fish and stocking them in native waters. The endangered razorback sucker and bonytail chub are two fish endemic to this dramatically altered river system. Both are known as big river fish, reaching lengths of 2 to 3 feet at maturity. They were historically the most abundant fish in this system. Federal and state cooperators stocked these species for many years, but mature specimens were never recovered, likely due to heavy predation. The task for the partners was to raise these fish to 12 inches in length to minimize predation. Through trial, error, and refinement, they eventually discovered a method that was successful.

Program goals were met between 2001 and 2004, with positive social, economic, and environmental results. Lake Havasu angler use and satisfaction increased substantially, and fishing remains the top tourist attraction. The lake now has one of the largest razorback populations in the river basin. Environmentally, the fish serve as our most efficient water-quality monitor.

A 2001 economic survey concluded that sportfishing on Lake Havasu was worth more than \$38 million per year to the local economy. Ultimately, program goals were accomplished at a cost substantially below the estimated cost, and local annual fishing revenues have brought in essentially double what the program costs. Volunteers have contributed nearly 250,000 hours.

Yet, the local population, which has doubled over the past two decades, continues to grow, and user demands have increased proportionally. Stress on the system is difficult to measure. Invasive species have added a new wrinkle to managing the system.

The BLM continues cooperative leadership with its partners, volunteers, anglers, and lake users to satisfy a mutual conservation mission. Volunteers continue to contribute an average of 9,000 hours each year. A former program leader used to say, “This is not so much a fish program as it is a people program.” The vast majority of stakeholders are pleased and proud of what the Lake Havasu Fisheries Improvement Partnership has accomplished.

*Lori Cook* was a public affairs specialist for the Yuma Field Office in Arizona prior to her retirement. She began her BLM career in 1989 and worked as a staff assistant, purchasing agent, and budget analyst.

### The Bureau Implements Plant and Soil Conservation Efforts

After the severe wildfire seasons at the start of the century, the BLM faced huge restoration and rehabilitation challenges requiring massive amounts of seed and native plant materials. In 2001, Congress directed the BLM to develop a long-term program to manage and supply native plant materials for various federal land management agencies. As an outgrowth of this directive, the

BLM entered into a partnership with the Kew Royal Botanic Gardens of the United Kingdom in 2001 to collect, conserve, and develop native plant materials for stabilizing, rehabilitating, and restoring lands in the United States.

The program, called Seeds of Success, quickly expanded to include botanic gardens, arboreta, zoos, and municipalities all over the United States. Seeds of Success teams collected seeds from across the country, sharing a common protocol and

coordinating seed collecting and species targeting efforts. Seeds of Success became a vital part of the BLM’s Native Plant Materials Development Program.

To further its plant conservation efforts, the BLM also launched the Conservation and Land Management Internship Program with the Chicago Botanic Garden in 2001. Interns worked on a variety of botany- or wildlife-related projects, including Seeds of Success projects.



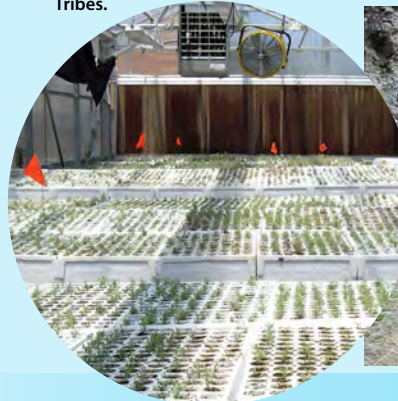
Collecting Sandberg bluegrass (*Poa secunda*) in Wyoming.

# SEEDS



# OF SUCCESS

Native plant materials and greenhouse facilities developed in partnership with the Shoshone-Bannock and Shoshone-Paiute Tribes.



Student Conservation Association team collecting spiny greenbush seed in Oregon.



Grass raised from seed in the Columbia Basin by Benson Farms, which now produces over 90 ecotypes of grasses and forbs annually.



Standard rangeland drill reengineered by the Truax Company to improve planting technology for rugged western terrain.

## The Native Plant Materials Development Program and Seeds of Success | By Peggy Olwell

The BLM is the largest native seed buyer in the Western Hemisphere, purchasing more than 11 million pounds of native seed between 2004 and 2008 for fire rehabilitation, reclamation, and restoration projects. Due to inadequate supplies of commercially available native seed, often the BLM must also use nonnative seed, purchasing 6.6 million pounds during the same time period. There is a critical conservation need to develop sources for native plant materials for use in the American landscape, and the BLM is uniquely situated to lead this effort.

Good stewardship of our land is closely connected to the diversity of native plant communities in healthy ecosystems that function to support wildlife and enhance the quality of life for many people. Native plant communities are being affected not only by climate change, but also by wildfire, urban expansion, recreation, energy development, and nonnative plant invasion.

The Native Plant Materials Development Program (NPMDP) was created by Congress in 2001 after the severe wildfire seasons of 1999 and 2000. In fiscal year 2001, the House of Representatives' conference report tasked the BLM with developing an interagency, long-term program to manage and supply native plant materials for federal land management agencies. The Plant Conservation Alliance, a consortium of 10 federal agencies and more than 285 nonfederal partners, coordinates this effort. The NPMDP's mission is to ensure that sufficient plant materials are commercially available to maintain the natural landscapes on federal lands, which includes ensuring that enough native seed is available for emergency stabilization and rehabilitation after severe wildfire seasons. To this end, NPMDP works to build capacity among federal agencies and private sector partners for 1,000 native species in the form of ecologically appropriate native seed.

Native plants, like food crops, take an average of 10–20 years to develop as consistent, reliable, commercially available species. There are many steps in the process of developing a stable crop from wild species. This process consists of native wildland seed collection, evaluation and development, field establishment, and seed production by

private growers. The BLM is also working to increase seed storage capacity so that native plant materials are ready for restoration and rehabilitation projects. Additionally, higher seed storage capacity helps to stabilize the native seed market so that bulk purchases may be made and stored in advance of unanticipated events such as large wildfires.

Since wildland native seed collections are the foundation of native plant materials development, the BLM has taken a leadership role in creating the Seeds of Success (SOS) program. SOS, the United States' national native seed collection program, is collecting seed from native wildland populations across the entire geographic ranges of the species to maximize the genetic diversity available in the native plant materials development process. SOS started with just the BLM in the western states and later expanded its partnerships across the country, with more than 60 teams making about 15,000 native seed collections since 2001. Seeds collected through SOS are divided into two groups for storage with the Agricultural Research Service in the U.S. Department of Agriculture. One part of the seed is in short-term storage and is used as a working collection for current research in the development of native plant crops. The other part of the seed is in long-term conservation storage for future use, if necessary.

Seed collection is just the beginning of a challenging development process. The complexity and large scope of work requires that the development of native plant materials be a cooperative effort involving federal, state, and tribal agencies; the commercial seed industry; and the plant research and restoration communities. Sharing knowledge, skills, and resources through partnerships is key to the success of NPMDP. Because of this, the BLM works with over 500 partners, including 118 private industry partners and 22 tribal agencies. The ultimate goal is to provide quality native plant materials for restoring native plant communities.

All land managers want to maximize the chances for successful restoration and minimize the possibility of putting materials into a project site where they would have deleterious effects. By promoting all the steps of the process, the NPMDP is ensuring that native plant communities continue to thrive on all public lands.

## The Bureau Focuses on Healthy, Sustainable Rangelands

As the new century dawned, Secretary Babbitt looked back at "Rangeland Reform '94" in an address to the resource advisory councils and noted that he did not harbor "any illusions that we've, once and for all, reached a grand consensus about an issue that has been plagued with controversy for the last century." "Yet," he added, "Look at the successes, where we've really made a visible difference, and just ask yourself, 'Can't we make

the success the standard everywhere?' If we could do that all across the country, with your efforts, I think we'll be able to look to the people in the United States and say: 'You know, grazing is good for communities; it's absolutely compatible with the health and diversity of the western landscape.'"<sup>55</sup>

The incoming Bush administration likewise believed that grazing was fully compatible with the health and diversity of the public lands and that it was important to the viability of western communities and the nation's economy. The new

administration realized, however, that greater flexibility would be required to allow ranchers to play a broader role in range management decisions, particularly with respect to conservation objectives.

## The Secretary Proposes a New Grazing Rule

In early 2003, under the banner of "Sustaining Working Landscapes," the BLM launched a two-pronged approach to changes in grazing management involving both administrative policy changes and more fundamental regulatory



Cattle grazing in San Simon Valley, Arizona.

Peggy Olwell is the plant conservation program manager for the BLM in Washington, DC. She is also the chair of the Plant Conservation Alliance's Federal Native Plant Committee.

changes. Then, in December 2003, Interior Secretary Norton unveiled a proposed new grazing rule that would reverse or amend some of the changes made under “Rangeland Reform ‘94.” While the new rule provided greater flexibility for ranchers’ participation in range management decisionmaking, it kept Secretary Babbitt’s land health standards and the role of the resource advisory councils in place.<sup>56</sup>

The BLM continued to focus on working with ranchers to meet, or make progress toward meeting, the land health standards developed in consultation with local resource advisory councils. Standards addressed watershed function, ecological processes, water quality, and threatened and endangered species habitat. The BLM attempted to assess the condition of 160 million acres of rangelands (154 million acres in grazing allotments), a time-consuming process. Interdisciplinary teams assessed the biological integrity, soil stability, and hydrologic functioning of uplands and the proper functioning condition of riparian areas. The focus was on trends and sampling; the BLM did



Measuring grazing utilization.

not inventory every acre. There was no national template for an allotment. The BLM could permit hundreds of thousands of acres to one individual or, as was more likely in its checkerboard ownership pattern, could divide 40,000 acres into 100 allotments for 100 individual ranchers.

By the end of 2005, the BLM had evaluated almost half of all allotments, and 78 percent were meeting all rangeland health standards. About 17 percent were not meeting at least one standard because of current livestock grazing management, and the BLM made adjustments on most of those allotments. The remaining 5 percent of allotments were not meeting at least one standard due to other factors.

In 2006, the BLM completed a 3-year review of the proposed new grazing rule, during which it considered 8,000 public comments, along with concerns expressed by the U.S. Fish and Wildlife Service over potential impacts to fish and wildlife species and habitat. The BLM published final grazing regulations in July and they took effect in August.

Soon after the regulations took effect, the Western Watersheds Project and a coalition of groups led by the Idaho Conservation League filed lawsuits in U.S. District Court in Idaho, claiming that the rulemaking process violated NEPA, the Endangered Species Act, and FLPMA. The court ruled in favor of the plaintiffs on the NEPA and Endangered Species Act claims. Based on the court’s decisions, the BLM directed field offices to continue to use the 1995 regulations, with the exception of conservation use permitting provisions.<sup>57</sup> The Wyoming District Court enjoined these provisions in 1996, and the Tenth Circuit Court affirmed that

ruling in 1999.<sup>58</sup> A subsequent appeal to the Ninth Circuit Court filed by the Public Lands Council and American Farm Bureau Federation resulted in the district’s judgment being vacated and remanded for further consideration of the FLPMA claims.<sup>59</sup>

Thus, the court’s decision prevented the BLM from using the tools provided by the 2006 regulations to administer grazing permitting. However, in late 2007, to reduce the processing time needed to authorize grazing use where grazing is compatible with maintaining healthy lands, the BLM established a new provision (known as a categorical exclusion) that exempted continued livestock use of such lands from detailed NEPA analysis.<sup>60</sup> This, too, led to a Western Watershed Project lawsuit, which claimed that use of this categorical exclusion to satisfy NEPA requirements was illegal. To help settle that lawsuit, the BLM discontinued use of the categorical exclusion in 2009.<sup>61</sup>

### Permit Backlogs Converge with Other Stresses

The BLM authorizes livestock grazing on public lands through a permit system and renews grazing permits issued under FLPMA every 10 years. The BLM usually averages about 2,000 renewals in a typical year; however, from 1999 through 2000, about 7,200 of the 18,000 total permits came due. This flood of permit renewals converged with a change in policy that required preparation of NEPA documents to analyze site-specific grazing effects and the initiation of land health evaluations, creating a crushing workload.

The BLM was unable to issue all of the permits in a timely manner, and a backlog soon developed. The BLM devoted much staff time to addressing the backlog and Congress provided administrative

relief, but the backlog continued throughout the decade, despite significant progress. The BLM had to direct resources toward addressing the permit backlog instead of devoting them to range health issues.

For ranchers, the permit backlog stress compounded the stress from an extended drought that resulted in reductions in grazing use in many areas from 2002 through 2004. In fiscal year 2005, due to drought and fires, livestock operations used about 6.8 million of the 12.7 million animal unit months of forage available under their permits.

During this time, the BLM continued to work toward a more streamlined approach to permit administration while focusing attention on promoting healthy sustainable rangelands.

### The Wild Horse and Burro Program Reaches a Critical Crossroads

The challenge presented to the BLM with passage of the Wild Free-Roaming Horses and Burros Act of 1971, which seemed formidable even then, had only grown more daunting in the intervening years. By the year 2000, the overall wild horse and burro population had grown from 25,345 in 1971 to more than 48,000, far exceeding the upper limit of the appropriate management level of 27,379.<sup>62</sup> The BLM launched a 4-year strategy to remove more horses, with the goal of reaching the upper limit of the appropriate management level by 2005.

Emergency gathers to rescue animals from drought and wildfires and a continued decline in adoptions resulted in a sharp increase in the number of animals in holding. The lack of facilities to hold more animals forced the BLM to revise its

targets and set a new goal of getting midway to the appropriate management level by 2006. In 2007, the BLM managed 33,100 wild horses and burros on 199 herd management areas. By 2008, the BLM had nearly reached its goal of bringing wild horse and burro populations into balance with the appropriate management level.<sup>63</sup> It estimated herd populations to be only about 1,000 animals over the target.

The strategy of accelerating gathers resulted in removing more than 74,000 horses and burros from the range between 2001 and 2008. Adoptions were still in decline, likely due in part to a long-term drought and increased hay prices. The BLM only adopted or sold about 46,400 animals, and by 2007, adoptions were down by 36 percent from the levels of the 1990s.<sup>64</sup> From 2001 to 2008, the number of animals being held in facilities increased by more than 9,000 to a total exceeding 30,000.<sup>65</sup>

In October 2008, the Government Accountability Office issued the findings and conclusions of an extensive review of the BLM’s wild horse and burro program. The report countered the continuing charges of some wild horse activists that the BLM was ignoring the welfare of the animals.

“BLM has implemented multiple controls to help ensure the humane treatment of wild horses and burros, including standard operating procedures, random checks on adopted horses, and agreements with buyers to help prevent slaughter. For gathers, it has established standard operating procedures and reporting systems to help ensure humane treatment,” the report stated.<sup>66</sup>

The Government Accountability Office determined that the BLM had also made significant progress toward achieving appropriate management levels.

However, the report noted that declining adoptions and limited alternatives for dealing with the growing number of animals being removed “have resulted in the agency managing almost the same number of animals off of the range as they manage in the wild.”

“Within the program’s existing budget, BLM cannot afford to care for all of the animals off the range, while at the same time managing wild horse and burro populations on the range,” the Government Accountability Office stated.

The report presented a series of recommendations to the Secretary of the Interior. One of the recommendations was that the BLM issue the “Wild Horses and Burros Management Handbook” it had drafted to standardize policy for setting appropriate management levels. The report also recommended that the BLM continue to develop and employ methods of estimating herd populations; maintain a central database on the number of animals killed or harmed during gathers; and consider ways to



BLM specialist working with a wild horse at the Wyoming Honor Farm.

## Terror Comes to the High Desert: BLM Wild Horse and Burro Corrals Are Firebombed | *By Joseph Fontana*

The BLM's Litchfield Wild Horse and Burro Corrals, constructed shortly after passage of the Wild and Free Roaming Horses and Burros Act, are nestled in a quiet and remote sagebrush-covered plain at the base of the Skedaddle Mountains in California's Lassen County. It's a peaceful setting in the high, cold desert along the California-Nevada border, yet it has been rocked over the years by attacks from those who violently oppose the BLM's management of wild horses and burros.

BLM wranglers, who each day care for up to 1,000 animals, have been resilient in dealing with the aftermath of these attacks, which have included fence vandalism and arson. An incident in the fall of 2001, only a month after the devastating terror attacks of September 11, was different. This time, the attack had the signature of an ecoterror organization.

On the morning of October 15, the crew was heading back to Litchfield after spending the weekend near California's state capitol, where about 4,000 Californians attended a BLM festival celebrating the 30th anniversary of the Wild and Free Roaming Horses and Burros Act. Nearly 80 mustangs and burros were adopted. Festivalgoers posed for photos with trained wild horses and burros. They enjoyed music, games, and food. It was a true family festival, a rousing success, and the BLM crew started the 200-mile drive home in high spirits.

The morning phone call quashed the mood: The corrals were on fire. The highway was closed. Law enforcement was on the scene.



BLM's Litchfield Wild Horse and Burro Corrals in California.

Hours before the wranglers hit the road, members of a cell affiliated with the Animal Liberation Front (ALF), an organization connected to the Earth Liberation Front (ELF), had been at work at the corrals. Under the cover of a dark Sunday night, and using knowledge gained in their earlier surveillance at Litchfield, five ALF members planted four gasoline-fueled firebombs and set simple electronic timers. They cut several perimeter fences. In the predawn hours, one of two devices in the huge haystacks detonated, and flames ripped through more than 200 tons of hay and into the dry wooden rafters of the pole barns.

As dawn broke, firefighters from multiple agencies arrived to fight what looked like a routine haystack fire. They quickly retreated upon discovering three 5-gallon buckets filled with gas and fitted with flares and timers. The devices were near the office, the hay, and under the personal pickup truck of a BLM employee.

As a wrangler moved through the corrals to keep horses from running through several cut perimeter fences and onto a busy highway, agents from the Federal Bureau of Alcohol, Tobacco, and Firearms; the Federal Bureau of Investigation; and local law enforcement arrived. Some were on scene; others were in constant phone contact.

A news helicopter from a Sacramento TV station orbited, its pilot unaware that the chopper was spooking the horses that had, after all, been gathered by helicopter. BLM's wrangler was "spooked" as well as he hustled to keep the horses from bolting through the gaps in the fences. California Highway Patrol officers barricaded U.S. Highway 395, a major route linking the Pacific Northwest to Nevada and southern California, and kept the road closed for most of the day while investigators determined how to deal with the incendiary devices.

An answer to who may have set the fire came on November 5 in a "communiqué" from the ELF. While the date of the fire was incorrect and Litchfield was incorrectly identified, the message said the fire was set and fences cut to free animals from captivity and in opposition to "the Bureau of Land Management's continued war against the Earth."

Because it occurred as the nation reeled from the September 11 attacks, the story quickly gained national attention. It became clear that the Litchfield incident was related to other ELF/ALF actions in the West, including attacks on energy facilities, tree farms, car dealerships, federal government installations, meat packing companies, and other facilities.

The FBI continued its nationwide investigation in an effort dubbed "Operation Backfire." Indictments on charges ranging from terrorism to arson were handed down in 2005 against a group of conspirators in these attacks, including the five alleged to have attacked Litchfield.

In June 2007, three Litchfield conspirators were sentenced to prison for their roles in the Litchfield arson and other attacks. In 2011, two other suspects who admitted participating in the Litchfield attack entered guilty pleas to arson attacks that occurred at the University of Washington during the fall of 2001.

*Joseph Fontana* is the public affairs officer for the BLM's Northern California District, which stretches from the western edge of the Great Basin to the ancient Redwoods on the California coast. He worked in community journalism before taking the public affairs position in the BLM.

improve public access to information on animals gathered, maintained in holding facilities, and adopted. In addition, the report recommended that the BLM develop cost-effective alternatives to long-term holding and seek legislative authority for those alternatives.

A final recommendation of the Government Accountability Office report concerned a far more politically sensitive aspect of the wild horse and burro program:

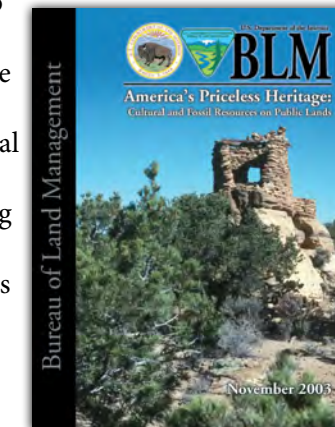
"BLM has committed to caring for these animals, even though the law requires their humane destruction or sale without limitation and the cost for their care off-the-range is now overwhelming the program. The program is at a critical crossroads. Within the program's existing budget, BLM cannot afford to care for all of the animals off the range, while at the same time managing wild horse and burro populations on the range. Resource limitations are forcing BLM to reconsider all available management options, and a workable solution must be developed to bring BLM into compliance with the act."<sup>67</sup>

To resolve this dilemma, the report recommended that the BLM discuss options, with Congress and other stakeholders, for complying with the law or changing the law and for disposing of excess, unadoptable animals through unlimited sale or "humane destruction." The BLM's position was not to use its authority for such disposal methods, as they do not represent the public's preferences for wild horses. The BLM continues to work on a strategy to address the issue in a more acceptable way.

## Cultural and Paleontological Resources Take the Spotlight

The "Preserve America" Executive Order signed by President Bush in 2003 put cultural resources in the national spotlight and changed the culture of the Department of the Interior. "Preserve America" established a policy that federal agencies would actively advance the protection, enhancement, and contemporary use of historic properties owned by the federal government. It instituted new accountability standards and promoted preservation through heritage tourism. The initiative also instituted new recognition programs for preservation projects and history teachers. Interior Deputy Secretary Lynn Scarlett cochaired the Preserve America Steering Committee with John Nau, III, chair of the Advisory Council on Historic Preservation. BLM Director Jim Caswell partnered with the advisory council to administer the Preserve America Stewards component of the program, which recognized volunteer preservation organizations.

In November 2003, the BLM's cultural heritage program released "America's Priceless Heritage." According to the report, volunteers and partnership agreements were adding the cash equivalent of \$3 million per year to the BLM's cultural heritage program. The BLM also obtained outside, nontraditional funds through state lotteries and gambling profits in Colorado and Arizona as well as funds from national sources such as the



Save America's Treasures program, grants from the Transportation Equity Act for the 21st Century, and "green sticker" funds paid by off-highway vehicle riders. The BLM sponsored site steward programs to enlist volunteers to record, patrol, or monitor sites in a number of states.



Rock art in Ojito Wilderness in New Mexico.

The BLM also instituted innovative approaches to meeting requirements of the National Historic Preservation Act. For example, in 2008, the BLM Carlsbad Field Office signed the Permian Basin Memorandum of Agreement, representing a fundamental change to compliance under section 106 of the act for one of the busiest oil and gas fields in the United States. Inspired by the Fruitland project in the Farmington Field Office, the BLM developed the agreement through a partnership with the New Mexico State Historic Preservation Officer, Advisory Council on Historic Preservation, New Mexico's professional archaeological and energy production communities, and through consultation with Native American tribes and pueblos.



A bone bed at the Cleveland-Lloyd Dinosaur Quarry near Price, Utah.

Lucy Kuizon was the national paleontologist for the BLM in Washington, DC, until her retirement in 2012. Her federal career spanned more than 30 years, including 16 years with the BLM, 9 years with the Bureau of Mines, and 8 years with the U.S. Forest Service.

## Paleontological Resources Preservation Act of 2009 | By Lucia Kuizon

The Omnibus Public Land Management Act signed on March 30, 2009, protected millions of acres of public lands, designated thousands of miles of trails, and gave permanent status to the National Landscape Conservation System. A less known section of the law enacted the Paleontological Resources Preservation Act (PRPA). More than 10 years in the making, this law provides enhanced legal authority for managing paleontological resources on public lands. It addresses both fossil collection that requires a permit and casual collection without a permit. It recognizes that some fossil finds are “national treasures” and that many have immense scientific value. In light of this, the law authorizes keeping some locations confidential and provides for prosecution for fossil theft and vandalism.

Fossils are scattered throughout BLM-managed lands in the West. Many extraordinary discoveries have been made on these lands, including one of the largest dinosaur bone beds in the world at the Cleveland-Lloyd Dinosaur Quarry in Utah, the first North American Jurassic ankylosaurian dinosaur (*Mymoorapelta*) from the Mygatt-Moore Quarry in Colorado, and one of the most unique dinosaur localities along the Colville River area on the North Slope of Alaska. Such discoveries are of interest not only to scientists, but also the public, and some, such as the *Therizinosaurus* dinosaur discovered in the Zuni Basin area of west-central New Mexico, along with the *Zuniceratops*, have been featured in the Discovery Channel’s “Walking with Dinosaurs” program.

Before the PRPA was passed, the BLM and other agencies charged with managing fossils on federal lands were challenged by a lack of adequate authority to prosecute for fossil theft and vandalism. Until 1974, federal agencies had authorized vertebrate fossil collection permits under the Antiquities Act of 1906. In 1974, the United States Ninth Circuit Court of Appeals declared that the term “objects of antiquity” was unconstitutionally vague and lacked a definition (*United States v. Diaz*). As a result, in 1978, the DOI proposed to redefine “objects of antiquity” and announced its policy to continue to protect vertebrate paleontological resources under the Antiquities Act until further notice of either separate “protective legislation or administrative actions under the existing statute.”

In 1982, the BLM proposed regulations for managing geologic and hobby collecting on public lands, including the collecting of fossils. South Dakota Senator Larry Pressler placed a “hold” on the regulations and requested that the National Academy of Sciences (NAS) report back to Congress on the issue of paleontological collecting on federal lands. The NAS formed a committee of scientists, federal and state government representatives, mining representatives, and commercial collectors.

The final NAS report, “Paleontological Collecting,” was published in 1987 with 10 recommendations regarding managing and protecting federal paleontological resources, including the commercial collection of vertebrate fossils. But administrative attempts to develop regulations to protect paleontological resources were challenged by the public’s concern about regulations on commercial collecting.

In 1990, the *Tyrannosaurus rex* known as “Sue” was found in South Dakota, which set off the 20th century “bone wars” between professional paleontologists and commercial collectors. The debate focused on the sale of scientifically important fossils before they could be properly documented and studied. In 1991, a scientifically significant *Allosaurus* discovery (“Big Al”) in Wyoming was inadvertently almost lost to science by an unauthorized excavation on public lands. “Big Al” was the first articulated (i.e., intact and almost complete) skeleton of an *Allosaurus* found in Wyoming and is featured in the Discovery Channel’s “Allosaurus: A Walking with Dinosaurs Special.”

Because of these cases and the controversy surrounding the development of proposed regulations, Montana Senator Max Baucus introduced legislation in 1992 to protect paleontological resources with scientific value and prohibit commercial collection of vertebrate fossils while allowing hobby collecting without a permit. However, the bill had no cosponsors and, therefore, died in committee.

In the late 1990s, however, a series of studies by the National Park Service and U.S. Forest Service revealed shocking statistics on the theft of fossils from federal lands. In 1998, Congress asked the Secretary of the Interior to consult with other agencies and report back on “the need for a unified Federal policy on the collection, storage, and preservation of these fossils.” The final report, “Fossils on Federal and Indian Lands,” was issued in 2000 and recommended that future legislation or agency policy for paleontological resources be guided by seven principles:

1. Fossils from federal lands are a part of America’s heritage.
2. Most vertebrate fossils are rare.
3. Some invertebrate and plant fossils are rare.
4. Penalties for fossil theft should be strengthened.
5. Effective stewardship requires accurate information.
6. Federal fossil collections should be preserved and available for research and public education.
7. Federal fossil management should emphasize opportunities for public involvement.

Meanwhile, the BLM continued to develop its paleontological resources program during the 1990s, focusing on permits, planning, confidentiality, and mitigation. By 1993, the BLM had hired four regional paleontologists to support the program and, in 1998, had issued new policy for paleontological resource management. All of these activities proved instrumental in supporting the successful efforts in Congress to protect the nation’s irreplaceable paleontological resources.

The memorandum of agreement is a voluntary mitigation program that uses GIS technology and offsite mitigation to address cumulative impacts to archaeological resources. It allows energy companies to use resources intended for individual, sometimes redundant surveys, to fund development and management of a more comprehensive archaeological record of the 1.1 million-acre-area.<sup>68</sup> As of 2012, participants had contributed more than \$3 million in pooled resources to build a comprehensive field program, creating a solid foundation for managing the area’s rich archaeological resources.

## Managing a Modern Day Fossil Bone Rush | By Alan L. Titus

Grand Staircase-Escalante National Monument (GSENM) was established by Presidential proclamation in September 1996. The proclamation made specific reference to “world class” fossil resources of the Late Cretaceous age (100 million years to 65 million years ago) in the Kaiparowits Plateau region. This “world class” label was based, at that time, primarily on the tiny fossil bones and teeth of mammals, fish, lizards, turtles, and frogs recovered by researchers in the 1980s and early 1990s. By 1996, the Kaiparowits Plateau had yielded only two largely incomplete dinosaur skulls and very little else in the way of diagnostic larger fossils. There had been no discoveries that compared to other Late Cretaceous dinosaur finds in Canada, Montana, Wyoming, New Mexico, and Texas.

In May 2000, I was hired to manage GSENM’s paleontology program. The basic challenges we faced included obtaining inventory data to define the spatial distribution of high-value resources, educating management and interest groups about the resources, and protecting the resources. My first priority was forming partnerships with institutions having a longstanding intrinsic interest in the monument’s resources. The Utah Museum of Natural History, the Utah Geological Survey, and the Museum of Northern Arizona all became close collaborators in both resource management and research. Combined crews of BLM employees and partners were in the field by early 2001.

Thousands of dinosaur fossil sites have been documented since then, including dozens with soft tissue impressions and numerous new species, proving that the proclamation’s claim of “world class” sites was more than justified. The ever growing list of discoveries includes five new kinds of horned

Paleontological resources were also coming into the spotlight. The BLM’s Cleveland-Lloyd Dinosaur Quarry contained the largest concentration of fossils from meat-eating dinosaurs ever found. Significant fossil discoveries on public lands continued to increase. Since 2000, hundreds of new dinosaur and other fossil species discoveries have occurred within the BLM’s Grand Staircase-Escalante National Monument alone. The BLM entered into partnerships with numerous museums to document and preserve paleontological resources and display fossils or replicas for educational purposes. However, the BLM struggled

with protecting fossils on public lands from theft and vandalism. In 2009, Congress passed the Paleontological Resources Preservation Act as part of the Omnibus Public Land Management Act. The act recognized the scientific value of these resources, enhanced the BLM’s ability to protect them, and allowed for prosecution for theft and vandalism.



Mapping dinosaur bones at a quarry in Grand Staircase-Escalante National Monument.



Dr. Alan Titus at a hadrosaur excavation on the Kaiparowits Plateau.

dinosaurs, including two that made it into TIME magazine in 2010, a new armored dinosaur, two new kinds of bone-headed dinosaurs, two new animals similar to *Tyrannosaurus rex*, four new kinds of raptor dinosaurs, and possibly six new kinds of hadrosaurs. The first Utah remains of the giant alligator *Deinosuchus* (dye-noh-sue-kus) and dozens of turtle, fish, crocodile, mammal, lizard, snake, bird, and flying reptile (pterosaur) species were also found. One of the horned dinosaurs, *Kosmoceratops* (kos-mo-ser-uh-tops), currently holds the record as the most ornate-headed dinosaur ever found. Other new species, like *Hagryphus giganteus* (hag-riff-us jy-gant-tee-us), *Gryposaurus monumentensis* (grip-oh-sore-us mahn-you-men-ten-sis), and *Utahceratops gettyi* (U-tah-ser-uh-tops get-ee-eye), are heavyweights in their class, suggesting that southern dinosaur faunas actually had larger species than their northern counterparts. The significance of the finds made between 2000 and 2010 transformed GSENM’s basic fossil resource inventory and management project into an integrated, multidisciplinary research program that is spurring a renaissance in North American Late Cretaceous paleontology.

The quality and scientific significance of the Kaiparowits fossil resources alone are primarily driving this remarkable modern “bone rush.” However, without the BLM’s active support, particularly in having a field-level paleontologist, the treasures of the Kaiparowits could still be languishing in obscurity. With over a dozen institutions engaged in long-term research projects in the Kaiparowits Plateau region, it is truly exciting to think of what this paleontological frontier will show us in the coming decades.

Dr. Alan Titus has served as the paleontologist for Grand Staircase-Escalante National Monument since 2000. Prior to that he worked for the Department of Energy’s Nuclear Weapons Testing Program and lectured at Washington State University, Snow College (Utah), and the College of Southern Idaho.

## Recreation Management Focuses on Outcomes

In 2003, the BLM also began to shift the recreation program from one that managed for specific recreational activities to one that focused more on “outcomes,” or the physical, mental, and social benefits that visitors would achieve on public lands.

In 2007, the Bureau released a “Unified Strategy to Implement ‘BLM’s Priorities for Recreation and Visitor Services’” (commonly referred to as the “Purple Book”). With this action, the BLM formally implemented benefits-based recreation planning (also known as outcome-based recreation planning).

The strategy provided a philosophy for managing recreation and visitor services on public lands that focused on people by using a customer-driven, outcome-based approach; on places by identifying outdoor settings for recreation; and on partnerships by building relationships to enhance recreation opportunities. Through this strategic approach, BLM employees worked with communities and

local publics to identify beneficial outcomes to affect the quality and kinds of public land recreation opportunities it provides.

In light of increasing demands for recreation on public lands amid tight budgets, in 2004, Congress passed the Federal Lands Recreation Enhancement Act to extend the interagency fee demonstration

program created in 1996, which recognized the need for additional funding to maintain federal recreation sites. The act enjoyed strong support from recreation and tourism interests, largely because it required agencies to use at least 80 percent of the fees collected at local sites to improve visitor experiences at those sites. The BLM charged fees only in areas where it provided

recreation services or facilities. The agency decided to allow sites to keep all of the fees they collected to pay for management, maintenance, or services. In 2010, the BLM collected approximately \$18 million in individual user and commercial recreation fees and rentals.<sup>69</sup>

### Travel Management Is Everyone’s Business | *By Mark Goldbach*

Would BLM lands really be “public lands” without public access? Whether you are a rancher, recreationist, oil and gas operator, surveyor, or an archaeologist, everyone needs access to public lands. Getting to your favorite public lands destination can be half the fun or an adventure in itself. With the tens of thousands of miles of two-track roads on public lands that provide access to a variety of destinations within many different landscapes, the public loves the freedom of travel on BLM lands.

In the late 1970s and early 1980s this freedom of travel led to an increase in unregulated motorized and nonmotorized vehicle use on public lands and soon became a detriment to achieving many resource management objectives. Managing public access, including roads, trails, and areas for vehicle use, quickly became a significant management issue in most, if not all, resource management plans. Accommodating the proliferation of motorized and nonmotorized vehicle use in an environmentally sensitive way became a major goal in these plans.

In Wyoming, starting in the early 1980s, we took the approach of designating (through the land use planning process) the majority of public lands as “limited” to motor vehicle use. We closed sensitive areas, such as areas of critical environmental concern, and designated small “open” areas adjacent to population centers to accommodate the growing number of requests by the public for cross-country travel. Many other states designated the majority of the public lands as “open,” allowing cross-country travel on vast acreage. Regardless of which approach was used, consistency became a public issue.

Implementing comprehensive travel management became an urgent need as well as a major opportunity and challenge for the BLM.

In 2001, the BLM prepared the “National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands,” more commonly referred to as the “OHV Strategy.” The public wanted consistency among states not only in how public lands were designated but also in the use of common terminology for travel management. The BLM’s Executive Leadership Team supported these concepts and an OHV specialist was established within each state. Soon afterwards, a Bureauwide “Trails and Travel Management Team” (TTMT) was chartered. These steps were milestones for the BLM as the agency took a much more aggressive approach to travel management.

In 2006, the Bureau’s recreation and engineering division developed a “Roads and Trails Terminology Report.” This report provided the foundation for commonly accepted definitions for implementing travel management on public lands. Accomplishing this task had major resource management implications and established consistency among both public land managers and users.

The BLM’s desire for good resource management and associated travel management planning continues to be challenging. Establishing effective partnerships at the local, state, and national levels has been crucial to the BLM’s efforts to meet this challenge. A prime example is the collaborative partnership established between state agencies, which license all-terrain vehicles (ATVs), and the BLM, which provides the on-the-ground opportunities for ATV use. Through these partnerships and a flexible management approach, the BLM continues to remain well suited for the difficult task of implementing comprehensive travel management on public lands.

*Mark Goldbach* was formerly the OHV specialist for the BLM Wyoming State Office and the senior outdoor recreation planner for the Washington Office.

### Shelf Road Climbing Area: The BLM and the Climbing Community Scale the Heights of Partnership | *By Mark Hesse*

The Shelf Road climbing area, located approximately 11 miles north of Canon City, Colorado, along the Gold Belt Scenic Byway, is recognized as one of America’s premier sport-climbing areas. More than 30,000 climbers from across the country, as well as a large number of international climbers, visit the area each year to test their skills on the challenging limestone cliffs.

The Shelf Road climbing area was “discovered” by climbers in the mid-1980s. The area now boasts over 800 routes of varying difficulty. Its characteristic bulges, solution pockets, and other uniquely weathered features offer a wide selection of high-quality routes.

Relatively undeveloped, with a mix of public land and historic ranches, the area provides sanctuary from the congestion and noise of the Front Range. It is situated in the protective shadow of nearby Pikes Peak, making it a warm retreat during the winter months when most other regional climbing areas are typically locked in a deep freeze. In addition to having these unique characteristics and recreational values, the area at-large is one of the most interesting geologic sites in the region. The nearby Garden Park Fossil Area is one of the most important Late Jurassic vertebrate localities in North America.

One major characteristic that makes the Shelf Road climbing area so special, as many visiting climbers have noted, is that it is one of the best managed and cared-for rock climbing areas in the nation. Certainly climbers were fortunate to begin with. Apart from private property conflicts at Cactus Cliff (since resolved) and the initial “ethical” debate amongst climbers regarding the use of expansion bolts for protection (a technique that was adopted by European climbers to develop similar limestone cliffs), the area was relatively “issue-free.” And unlike nearby Garden Park, the cliffs at the climbing area (made up of Paleozoic sediments) hold relatively minimal paleontological interest. The site just so happened to be an extremely appropriate location for a “magnet” recreation area.

Working with the BLM in the early 1990s, the climbing community, led by the nonprofit Rocky Mountain Field Institute (formerly the American Mountain Foundation), helped to put in place a world-class infrastructure that now consists of approximately 5 miles of climbing access/hiking trails, two developed campgrounds, and access roads and parking areas. You only need to look at other U.S. climbing areas that lack this infrastructure to appreciate what has been accomplished as a result of this partnership.

There are several key reasons why the partnership at Shelf Road has been so successful. Representatives of the climbing community have participated with the BLM in virtually every stage of the area’s development. And much of the work was done proactively in anticipation of the area’s popularity. Adequate funding is another key to success. The area’s location along the Gold Belt Scenic Byway helped the BLM to secure necessary funds to support the construction of the campgrounds and to support vital trail work. The purchase of Cactus Cliff by the Access Fund in 1999 (the parcel was subsequently transferred to the BLM) opened up public access to one of the most popular cliffs. And, the Rocky Mountain Field Institute’s (RMFI’s) ongoing commitment to the stewardship of the area provides a dedicated volunteer workforce that continues to help maintain the area today. Since 1992, the RMFI has mobilized over 1,200 volunteers from within and outside the climbing community who have in turn contributed over 10,000 hours of “sweat equity.”

The Shelf Road climbing area, however, remains a work in progress, as significant management challenges remain. As it continues to grow in popularity, the area is facing increasing pressures. Despite these challenges, the future of the area is bright because of the strong partnership that remains in place. With this as a foundation, Shelf Road will continue to stand as a testimony of what can be accomplished when a user group works cooperatively in partnership with land managers to achieve a common goal.



Rocky Mountain Field Institute volunteer working on a trail.

*Mark B. Hesse* was the founder and past director of the Rocky Mountain Field Institute, a nonprofit environmental service, education, and research organization based in Colorado Springs, Colorado. He served on the RMFI’s board of directors and consulted on special projects and programs.



## The Lands and Realty Program Tackles Challenges

The BLM's lands and realty program tackled a number of pressing challenges in the new century, from assessing how it appraised land values for increasingly complex land exchanges to authorizing unprecedented numbers of renewable energy and transmission projects on public lands.

### Report Launches Review of Appraisals

By the late 1990s, a decade of audits and reviews had documented some genuine weaknesses in the BLM's lands and realty program. The Bureau faced an ever-growing workload of increasingly complex land exchanges, many with strong and vocal political constituencies, often involving partners with technical and legal resources far exceeding those of the BLM's staff.

In 2002, a land exchange agreement involving BLM-managed lands on Utah's San Rafael Swell became the focus of intense controversy and criticism over appraisal and property valuation practices associated with the exchange. The controversy led to a series of investigations by the Office of the Inspector General, the General Accounting Office, Congress, and others.

An independent audit conducted by The Appraisal Foundation and cited in a later Government Accountability Office (the General Accounting Office was renamed in 2004) audit, concluded that "appraisers at BLM lacked the institutional independence necessary to conduct objective appraisals and faced heavy pressure from their realty managers to conduct appraisals that would expedite land transactions."<sup>70</sup> The BLM ultimately cancelled the San Rafael land exchange and the case

served as a catalyst for positive changes in the lands and realty program.

In response to the report by The Appraisal Foundation, the BLM launched a review of all land exchanges in process or under discussion at that time. "Our decision to begin this review is based in part, on findings in the Appraisal Foundation Report, which was paid for and requested by the BLM in June 2001," said BLM Deputy Director Jim Hughes. "The BLM is committed to ensuring that the land exchange program is impartial, credible, and consistent nationwide, and, most importantly, one that protects the public interest."<sup>71</sup>

Hughes also announced the creation of a working group to conduct a "top-to-bottom" evaluation of the land exchange and land appraisal processes for all four of the land management agencies with exchange authority: the BLM, U.S. Fish and Wildlife Service, National Park Service, and the U.S. Forest Service. Larry Finfer, then deputy director of the Department of the Interior's Office of Policy Analysis, was the team coordinator for the review. The working group analyzed the recommendations that had emerged from the various audits of the program and, in cooperation with The Appraisal Foundation, developed a report with specific recommendations to be submitted to the BLM, the Department of the Interior, other federal agencies, and state government officials familiar with the land exchange process and appraisal activities. In the interim, the BLM submitted its land exchanges to the Department of the Interior for review prior to completion.

The working group concluded that a lack of appraiser independence and inconsistent application of appraisal standards were problematic within all four agencies. They also concluded that

past efforts to address appraisal problems had not succeeded because they had not addressed the issue of appraisers' independence. The group recommended establishing a centralized independent appraisal function under the Department of the Interior's chief appraiser.

In November 2003, each agency transferred appraisers from its realty office to the newly created appraisal services directorate, reporting to the Department of the Interior's National Business Center. Meanwhile, the BLM moved forward to implement other recommendations of the working group: strengthening overall management of exchanges, developing new authorities, enhancing training to advance the skills of lands and realty personnel, emphasizing exchanges with states, strengthening the ability of negotiators to reach agreement on property valuation, and developing guidance for processing congressionally directed exchanges.

### Land Sales Provide for Acquisitions

The Federal Land Transaction Facilitation Act, signed into law in July 2000, established an acquisition account where revenues generated from the sale or disposal of certain public lands would be available to the BLM and other land management agencies for the purchase of land located within federally designated areas. The program, which Congress authorized for 10 years and extended for 1 year, left an extraordinary legacy. Funds from the sales contributed to the acquisition of 28 parcels of land later preserved in landmarks such as the Lewis and Clark National Historic Trail in Montana, Canyons of the Ancients National Monument in Colorado, Hells Canyon Wilderness in Arizona, Zion National Park in Utah, and others.

## New Century Brings New Funding for Land Acquisitions | By David Beaver

When the Federal Land Transaction Facilitation Act (FLTFA) passed in July 2000, the BLM was given authority to dispose of lands through sale and exchange and use the receipts for the acquisition of conservation lands within eligible BLM, National Park Service (NPS), U.S. Fish and Wildlife Service, and U.S. Forest Service-managed units. Prior to FLTFA, receipts generated from the disposal of lands by the BLM were deposited with the U.S. Treasury to meet the general expenses of the government. The FLTFA authority has proven to be a boon, with significant additions to lands managed by all the agencies, and the BLM has accomplished many notable land acquisitions.

### Canyons of the Ancients National Monument, Colorado

This 164,000-acre rugged, eroded landscape and its remarkable cultural resources have been a focal point of explorers and researchers for more than 125 years. The monument contains the highest density of cultural resource sites in the nation, with more than 100 sites per square mile. In some places, more than 6,000 sites are documented and recorded, and an additional 20,000–30,000 sites are predicted.

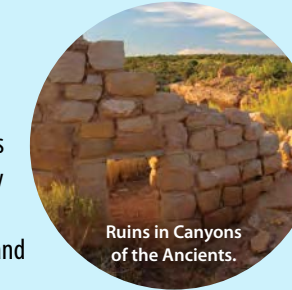
Site types include cliff dwellings, villages, great kivas, shrines, and petroglyphs. Many sites have standing walls; 10 are listed on the National Register of Historic Places, and one is a national historic landmark. The monument is contiguous to three units of Hovenweep National Monument, managed by the NPS. Approximately 45,000 people visit the area annually.

In November 2009, the BLM, after a long and challenging history of landowner differences, received Secretarial approval to utilize \$3.3 million in FLTFA receipts to purchase the 4,573-acre Wallace property. The Conservation Fund and the National Trust for Historic Preservation played instrumental roles in assisting the BLM with the purchase.

At the time, the Wallace property (consisting of seven noncontiguous parcels) comprised about 25 percent of the private lands within the monument. It contains a remarkable array of highly significant cultural resources, including 25 documented and recorded sites. An additional 700 sites are predicted to exist on the property. As a result of this acquisition, Jackson's Castle—one of the most important archaeological sites in the southwestern United States (it was photographed by William Henry Jackson in 1874 and referenced in an 1876 report to the Secretary of the Interior)—and the "Skywatcher Site," a one-of-a-kind, 1,000-year-old Ancestral Puebloan solstice marker, now contribute to the monument's interpretative legacy. Publicity generated by the BLM's purchase of the Wallace property and a stagnant farm and ranch real estate market triggered neighboring property owners to contact the BLM regarding the potential purchase of their private landholdings within the monument.

### Hells Canyon Wilderness, Arizona

This 9,900-acre wilderness preserves a scenic portion of the Hieroglyphic Mountain Range. Prominent 3,000-foot peaks



encircle the area, effectively isolating it from the surrounding countryside. The wilderness is noted (and named) for a deeply incised and rugged desert canyon with perennial flowing water supporting an important Sonoran Desert habitat, a rare juniper woodland/saguaro cactus ecosystem with thriving bird and mammal populations. It offers the public opportunities to experience primitive recreation within 20 miles of metropolitan Phoenix.

In June 2007, the BLM sold an isolated parcel of public land on the western outskirts of Phoenix at auction. The 272-acre parcel, neighboring an expanding gated residential subdivision and crossed by an electric transmission line, sold to the highest bidder for \$7 million. In December 2008, the Secretaries of Agriculture and the Interior jointly approved using \$2.9 million of these funds to acquire the 640-acre Brooks property within Hells Canyon Wilderness.

After the designation of Hells Canyon Wilderness in 1990, the Brooks property (approved for a four-unit residential subdivision by Yavapai County) was the only piece of private property within this wilderness—the proverbial "donut hole" in an otherwise untamed federally managed landscape. The successful purchase of this single inholding was accomplished following months of complex negotiations between the landowner and The Wilderness Land Trust. Acquisition of the Brooks property will allow visitors to forever experience a feeling of solitude, a cherished hallmark of wilderness.

### Rogue National Wild and Scenic River, Oregon

Originating in Crater Lake National Park, the 215-mile-long Rogue River joins the Pacific Ocean at Gold Beach, Oregon. Forty-seven miles of the river are administered by the BLM as a national wild and scenic river (NWSR). Between 1970 and 1980, with more than \$10 million from the Land and Water Conservation Fund (LWCF) congressional appropriations, the BLM acquired 99 fee parcels and 168 conservation easements on private properties lying within the NWSR boundary to permanently eliminate commercial and residential development.

In May 2007, the BLM received Secretarial approval to utilize \$600,000 in FLTFA receipts to purchase the 32-acre Haas property, the last remaining privately owned parcel within the corridor not covered by the comprehensive acquisition program put in motion 40 years ago. Swift action by The Trust for Public Land in 2006 presented the BLM with the opportunity to consolidate public ownership of the property, requiring an additional \$240,000 of land acquisition funding (provided by the LWCF) to complete the fair market value purchase. The Haas property, locally known as "Winkle Bar," includes a historic cabin originally built by the American author Zane Grey (a former owner of the property), who made this river the basis of his 1929 novel "Rogue River Feud." Acquisition of this property preserves remarkable historic, natural resource, and scenic values for future generations.

*David Beaver* was the national program lead for BLM's LWCF and FLTFA land acquisition programs in the Washington Office from 1991 until his retirement in 2015. Prior to that, he worked for the U.S. Fish and Wildlife Service and was a realty specialist in the Great Divide Field Office and a natural resource specialist in the Casper District Office in Wyoming.



## Reforms Strengthen Cadastral Surveys of Indian Lands

In 2004, Secretary Norton developed a Fiduciary Trust Model to reform the management of Indian trust assets by the Department of the Interior. The

Department implemented this model in an effort to create a more efficient and effective method for delivering trust services. The model implemented four components pertaining to cadastral survey: the BLM Indian Land Surveyor Program, a cadastral-based GIS, a Certified Federal Surveyor Program,

and modernization of the Public Land Survey System within Indian Country. An effort derived from these initiatives was the BLM's Cadastral Indian Program, funded by the Bureau of Indian Affairs, which prioritizes boundary determination needs on Native American lands.

### Alaska Land Transfer | By Ramona Chinn and Christy Favorite

Statehood came late to Alaska—it entered the Union on January 3, 1959. About 10 years later, the discovery of huge oil reserves on the North Slope prompted a call for development. Before development could commence, however, Congress had to address the Alaskan Native land claims.

On December 18, 1971, the Alaska Federation of Natives convened in Anchorage to vote on the proposed Alaska Native Claims Settlement Act (ANCSA). The federation set up a phone link between the convention hall and the White House. The delegates voted 511 to 56 to accept the bill and informed President Nixon of the outcome. The delegates waited quietly. Finally, the President spoke: "I want you to be among the first to know that I have just signed the Alaska Native Claims Settlement Act."

By October 21, 1976, the BLM in Alaska was inundated with land title applications to adjudicate. Under the Alaska Native Allotment Act of 1906, Alaskan Natives could acquire title to up to 160 acres of nonmineral land, and approximately 16,000 parcels of land required field examination, adjudication, and survey. Almost all of the 105 million acres granted to the State of Alaska under the Statehood Act, and the vast majority of the 46 million acres mandated for conveyance to Native corporations pursuant to ANCSA and to individuals under the Native Allotment Act, also remained to be adjudicated and surveyed. The state and the Alaskan Native corporations were allowed to select land simultaneously, and much land was selected by more than one entity, village corporation, or regional corporation as well as the state. Thousands of individual Native allotment claims survived ANCSA's repeal of the 1906 act, and many claims were amended, causing much change in land status. The repeal of settlement claim laws by the Federal Land Policy and Management Act of 1976, as well as the legislative approval provision, affected the many settlement claims that were still pending. In 1980, the selection period for the Alaska Statehood Act was extended to 1994 by the Alaska National Interest Lands Conservation Act.

ANCSA was a complex settlement to a complex situation—implementing ANCSA alone would have been far from simple, but the simultaneous need for adjudication of Native allotment claims together with overlapping state

selections created additional complications. Myriad appeals, lawsuits, and disparate legal interpretations among the state, the corporations, the public, and the Department of the Interior all contributed to delayed conveyance. New regulations, policy changes, case law, and legislative amendments resulted from such disputes, sometimes causing further delays as they were interjected into the process over time during the adjudication of overlapping selections and claims.

In 2002, the executive officers of the ANCSA corporations met with the Secretary of the Interior and expressed frustration with the pace of conveyance, particularly for claims under the Native Allotment Act. No less frustrated than its constituents, the BLM worked with the state and the corporations to identify and seek solutions. They established an ambitious goal of sunseting the land transfer program, which required federal legislation so that the ANCSA, the Statehood Act and the Native Allotment Act could be worked more in concert. To that end, Senator Lisa Murkowski sponsored the Alaska Land Transfer Acceleration Act, which was passed in 2004. It gave the BLM tools such as the authority to amend title for conveyed land claimed by allotment applicants and set deadlines for selection priorities

Almost all of Alaska was unsurveyed on the date of statehood. Unserved lands were conveyed to the state and the Native corporations through tentative approvals (TAs) and interim conveyances (ICs), respectively. While TAs and ICs transfer all right, title, and interest of the United States, the law requires survey and confirmation by patent. By 2012, approximately 96 percent of ANCSA and state entitlements had been transferred under a combination of patent and ICs or TAs as appropriate. Approximately 98 percent of the more than 16,000 parcels filed in the Native allotment program are patented or closed, while approximately 38 percent and 43 percent remain to be patented to the Native corporations and the state, respectively.

It is through the creativity and dedication of BLM employees and partnerships with land transfer clients that completion of land title transfers in Alaska is realized.

### Stones and "Bones" Set by William (Billy) Octavius Owen in Wyoming | By J.D. "Sam" Drucker

In November 2000, while helping to create the BLM's geographic information system (GIS) base layer, termed the Geographic Coordinate Data Base (GCDB), I stumbled upon a General Land Office survey plat that fascinated me. It was drawn from work conducted by William (Billy) O. Owen in March and April of 1881 in southern Wyoming.

Noted on the plat is a line of section corner monuments labeled as "Mastodon Bones." The idea of relocating and collecting some of these "bone" section corners was intriguing. I mentioned my intent to John Lee (cadastral chief, Wyoming State Office) and learned that his staff had first brought the idea to paleontologist Laurie Bryant in 1999. I soon realized that finding these corners was also interesting to others within the BLM.

Through research at the Albany County Courthouse, we found that some of the fossil corners did, in fact, monument the location of federal lands. Dr. Danny Walker, the assistant state archaeologist, suggested that we contact Brent Breithaupt of the University of Wyoming's (UW's) Geological Museum for information concerning the history and the types of fossils discovered in the survey area. Breithaupt introduced the potential for finding not mastodon, but dinosaur fossils, and excitement for the project grew. Beth Southwell, Breithaupt's assistant, began preliminary research in the American Heritage Center on the UW campus and located a partial autobiography written by William O. Owen (Owen 1930) that made reference to the survey of the area and described what happened early in April 1881:

We had our team and wagon with us, and it was our custom, when possible, to load in the necessary number of stones at any favorable place and haul them along with us against the frequent happening that no corner material could be found when we have to have it. There was no sign of a stone near our corner point so I ran on north half a mile hoping to find a supply near the quarter-section corner. But in this we were disappointed. . . . Tom Hale, my old side-partner, was my cornerman and in our extremity he pointed to the east where, about half a mile distant, lay two hillocks where, in his opinion, might repose the material we needed.

Two of the boys jumped into the wagon and off they set for the hillocks. . . . After some time they started back and as they drew near I could tell they had considerable of a load. . . . 'We've got something,'

said Tom, 'but God knows what it is - I don't. It's harder then h\_\_\_\_\_ and every piece weighs a ton!' Now, what do you suppose those boys had in that wagon? Fossil bones of a dinosaur!

Upon reading this, the anticipation of discovery buzzed in the office, and soon a date was set for our long-awaited field trip. After acquiring GCDB coordinates for selected corner locations and inputting them into a hand-held global positioning system (GPS) unit, we began preparing for the field work.

On May 31, 2001, Lee, Mike Whitmore, and I, from the BLM cadastral staff, BLM paleontologist Dale Hanson, and Marty Griffith, from the BLM Wyoming State Office, set off for a day of investigation. Breithaupt and Southwell joined us in Laramie. We visited the site of the Bone Cabin Quarry to give us an idea of the type of material that Owen's crew probably collected for corner material.

Our search began at the closing corner on the north boundary of the township. Whitmore was the first to see the corner stone, and almost in a daze of exhilaration, we photographed and chattered ecstatically about the piece of Sauropod fossil leg bone situated in a fence line. Sauropods were very large, plant-eating dinosaurs. The *Apatosaurus* (formerly known as the *Brontosaurus*) is one of the best-known sauropod dinosaurs.

Following our projected section lines and using GPS coordinates, we continued our search for one-half mile south of this corner stone and found the next quarter-section corner. This position had been monumented with a portion of a large fossilized *Apatosaurus* tail vertebra that, to our amazement, was plainly marked with "1/4" on the upper right corner. Owen had stated that these stones were too hard to scribe, so finding one that was marked only added to the historical significance of the original survey. It is possible that we were the first people to see this particular monument in 120 years. This fossil corner was collected and replaced with a BLM brass cap. It is currently housed at UW. Although we located several more bone monuments, there are several more we have yet to locate.

As we gather more information on the life and times of Owen, it seems fitting to call him a long-lost friend and comrade, a surveyor from the past, but one we all feel akin to. His accounts of surveying the high plains, deserts, and mountains of Wyoming convey the enthusiasm Billy must have had for life, his work, and adventure.

J.D. "Sam" Drucker has nearly 20 years of experience as a surveyor. He has worked for the BLM as a seasonal archaeological technician in the Lander Field Office, as a cadastral surveyor in the state office, and for the last several years, as an archaeologist and paleontological coordinator in the Pinedale Field Office in Wyoming.



Surveying land for conveyance in Alaska.

Ramona Chinn is currently the resolution chief and has been the deputy state director for the Alaska Lands and Cadastral Division. She moved to Alaska to work in the lands program in 1974 after beginning her career with the U.S. Army Corps of Engineers in Seattle, Washington. In 2008, Ramona was recognized as the National Public Lands Manager of the Year by the Public Lands Foundation. Ramona is also an award-winning quiltmaker whose work has been featured in numerous publications.

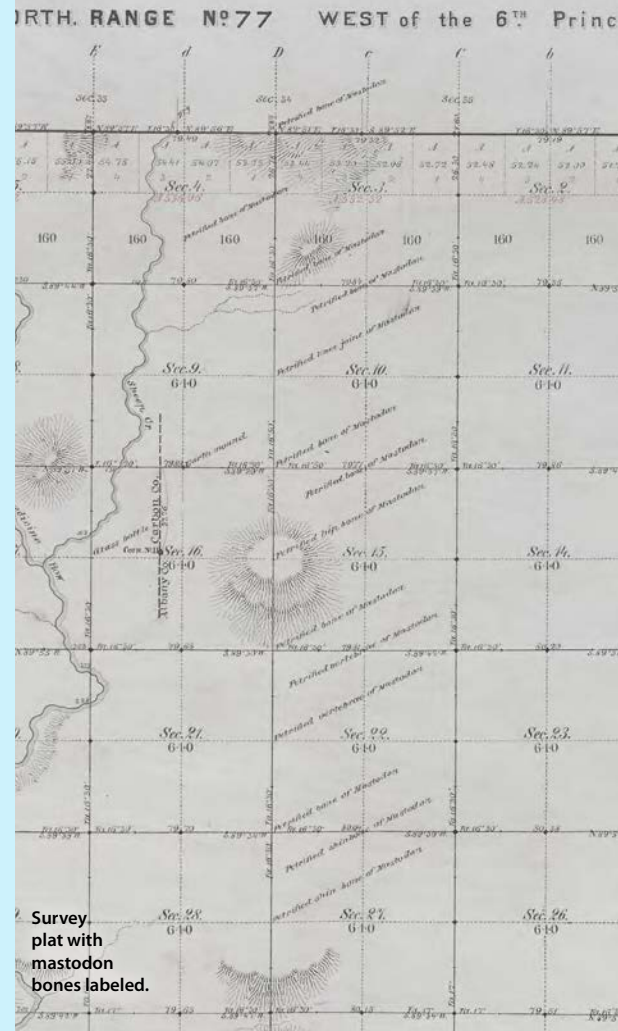
Christy Favorite started with the BLM in 1977 and became the coordinator/clearinghouse for ANCSA issues. Christy, who has been an Alaskan since before statehood, is the mother of two children and a bead and fiber artist.



Cast of one of the dinosaur fossils used as a monument.



Billy Owen.



## The Southern Nevada Public Lands Management Act Demonstrates Success

The first 10 years under the 1998 Southern Nevada Public Lands Management Act far exceeded expectations. Bidders at land sale auctions drove final purchase prices far above the appraised fair market value. In 2006, the program allocated more than \$1 billion for expenditure. By 2008, the program had brought in approximately \$3.2 billion—the interest alone was \$294 million—and had disposed of approximately 34,500 acres for community expansion in the greater Las Vegas metropolitan area. In 10 years, the BLM, U.S. Forest Service, National Park Service, and U.S. Fish and Wildlife Service had acquired more than 50,000 acres of environmentally sensitive land throughout Nevada.

The revenue generated also provided for much needed capital improvements such as rebuilding aging infrastructure at the Red Rock Canyon National Conservation Area, Lake Mead National

Recreation Area, and Desert National Wildlife Refuge, as well as numerous campgrounds and visitor facilities managed by the BLM, U.S. Forest Service, National Park Service, U.S. Fish and Wildlife Service, and Bureau of Reclamation. The funds provided for almost 100 conservation initiatives, including research, habitat restoration, abandoned mine closures, and many other programs. Approximately \$300 million went to projects at Lake Tahoe. The agencies developed nearly 170 parks, trails, and natural areas. The revenue funded several multiple-species habitat conservation plans for sensitive and endangered species. A subsequent amendment to the act provided for hazardous fuels reduction and fire prevention projects to support the BLM's Eastern Nevada Landscape Restoration Project.

Under the Southern Nevada Public Lands Management Act, the BLM worked with the Department of Housing and Urban Development on the sale of land for affordable housing, using land discounted by up to 95 percent of fair market

value. This provision allowed for the development of a senior citizen housing project and family apartments, both in the Las Vegas area. In 10 years, the BLM reserved more than 1,000 acres in and around Las Vegas for future affordable housing.

## Law Enforcement Collaborates with Local Partners

The BLM law enforcement program continued to evolve into a corps of law enforcement professionals focused on natural resource issues and public safety.

Even with growing support for the law enforcement mission and a restructuring in 2009 that improved communications and accountability, this relatively small program faced an outsized task, with each ranger patrolling on average more than 1 million acres of public lands. To effectively cover such a large area, BLM rangers depended on strong working relationships with county sheriff's departments and other state, federal, and tribal agencies. These law enforcement personnel

complemented the BLM's efforts by providing additional eyes and ears on vast stretches of public lands.

These invaluable partnerships provided critical backup to rangers in remote areas as well as insight into local issues and concerns the public had regarding management of the public lands. The BLM established more than 100 cooperative agreements with county sheriffs, covering such issues as deputizing rangers for state peace officer authority and collaborating on dispatch services and high visibility patrols on public lands by county deputies.

BLM law enforcement rangers and agents commonly investigated both civil and criminal violations pertaining to the Archaeological Resource Protection Act, Paleontological Resources Preservation Act, fire trespass, drug cultivation and manufacturing, illegal off-highway vehicle travel, cattle trespass, timber trespass, illegal trash dumping, and many other violations specified within the U.S. Criminal Code and the Code of Federal Regulations.

A growing challenge for BLM law enforcement officers was keeping the peace during activities that draw large crowds. The BLM-managed

Imperial Sand Dunes Recreation Area in southern California, for example, was drawing upwards of 200,000 off-highway vehicle enthusiasts per weekend during the winter months. While off-highway vehicle use predominated during the daylight hours, nighttime brought a completely different experience to the dunes.

Alcohol and drugs fueled stunts by a predominantly young crowd of spectators that was sometimes out of control. The crowd trapped unsuspecting motorists in ditches of fire, dragging them from their vehicles and beating them, while strippers performed under the light of huge pallet-fueled

## Special Agents Work with Resource Specialists to Uncover Fraud and Theft | By Joe Nardinger

In June 2008, special agents, who were with the BLM's Office of Law Enforcement and Security and assigned to Alaska, received information from a confidential source who provided the name of a commercial outfitter and guide believed to be operating illegally on BLM lands in Alaska. The BLM acted on this information, and during the course of a lengthy investigation, agents linked the illegal outfitter to the theft of paleontological and archeological resources from public lands.

An additional suspect determined by investigation to be linked to the illegal outfitter was also identified, and a federal search warrant for the suspect's residence was granted. Agents, assisted by the paleontologist from BLM's national office, located and seized both paleontological and archeological evidence from the suspect's home.

In addition to the stolen artifacts, agents recovered other documentary evidence in support of the BLM investigation and contraband in the form of child pornography. Discovery of the child pornography resulted in a comprehensive and complex secondary investigation by the Federal Bureau of Investigation.

Further investigation by BLM special agents resulted in the identification of two additional fraud schemes involving the outfitter and an associate. Cooperative investigations were initiated with the National Science Foundation, Office of the Inspector General, and the State of Alaska Permanent Fund Fraud Division. These felony level investigations resulted in the recovery of thousands of dollars

fraudulently obtained from both the National Science Foundation and the State of Alaska.

Through the testimony of the assigned case agent, the Assistant United States Attorney assigned to Fairbanks, Alaska, presented a portion of the BLM case to a federal grand jury seated in Anchorage, Alaska, on August 18, 2010. The testimony resulted in a successful two-count felony indictment alleging theft of government property and conspiracy to steal government property and to violate the Paleontological Resources Preservation Act of 2009.

As of 2012, this case had resulted in two felony convictions and one misdemeanor conviction specifically relating to the BLM's investigation. Criminal fines of \$130,000 were assessed; a fine of \$100,000 levied against one suspect was the single largest criminal fine ever imposed in a paleontological resource case investigated by the BLM. All contraband in the form of paleontological or archeological resources identified by investigators was forfeited to the BLM.

This case is significant because it is the first successful criminal prosecution and conviction citing the Paleontological Resources Preservation Act. It is also significant because it represents what can be achieved when dedicated BLM resource staffs cooperate and share their expertise with law enforcement special agents to aid in the successful apprehension of resource violators. BLM paleontologists, archeologists, geographic information system specialists, and recreation specialists all provided valuable assistance during the course of this investigation.



*Joe Nardinger* has been a BLM special agent in Fairbanks, Alaska, a law enforcement ranger at the BLM's Upper Missouri Breaks National Monument in Montana, and a special agent in Billings, Montana. Joe has worked for the Montana Department of Fish, Wildlife, and Parks; the U.S. Forest Service; and the U.S. Navy.



Las Vegas Valley from undeveloped land.



Aerial view of burned areas near Parma, Idaho.



August 14 fire as Special Agent Gandiaga saw it upon arrival.



Origin of August 2 fire.



Baja MTZ tire track at Shuckin Fire's origin (L) and tire on suspect's truck (R).



Suspect's Ad Tec boot (L) and footprint left at the site (R).

### BLM Investigative Work Leads to Arson Convictions | *By Kyle Gandiaga*

On July 10, 2007, a fire was started on public lands northeast of Parma, Idaho. It was followed by another fire on July 16, which was reported by a man who gave specific directions to the fire's location but did not identify himself. On July 23, the same man reported a grass fire at a specific location but, again, did not identify himself. These three fires were followed by four more fires on July 25 and August 2, 10, and 14. The Parma Fire Department (PFD) and BLM firefighters were dispatched to all seven fires.

During the 5 weeks following the first fire, investigators identified a pattern—all seven fires were started at the same time of day and all were within a 5-mile radius. The BLM increased its patrols of the area. BLM investigators gathered physical evidence at each fire, including casts of unique tire and boot prints, and worked with the FBI crime laboratory in Quantico, Virginia, to determine the make and model of the impressions:

- Tire prints found at the July 25 fire were found by the FBI laboratory to be consistent with Big O Big Foot A/T (all-terrain) tires.
- FBI analysts concluded that tire prints found near the origin of the August 2 fire were made by a Mickey Thompson Baja MTZ tire—a specialized, extremely rare, and expensive off-road truck tire.
- Tire prints found at the August 10 fire also matched Baja MTZ tires. Investigators also found boot prints, which the FBI later identified as Ad Tec boots.

Although investigators obtained physical evidence, they initially could not link it directly to an individual until the August 14 fire. On that day, a BLM special agent was conducting surveillance and encountered a red Ford F-150 stepside pickup traveling off road in the opposite direction. The agent saw the driver as they passed, and they waved to each other. Then the agent noticed heat waves in the distance. In the area where the man in the truck had just been, the agent found a small fire and tire impressions similar to the Baja MTZ tire prints. The agent attempted to catch the pickup truck but was unsuccessful. He returned to the scene to protect the evidence until fire investigators arrived.

The agent reported the fire and identified the suspect vehicle, which another special agent later found parked at the PFD. That agent observed

Mickey Thompson Baja MTZ tires on the truck. The owner was a 23-year-old male volunteer firefighter with the PFD, one of the people called to fight the fires. Two BLM special agents interviewed the suspect later that evening. He denied having any involvement or even being in the area that day.

On November 28, 2007, BLM agents and rangers, along with a detective from the sheriff's office, served a federal search warrant on the suspect. The officers recovered a pair of Ad Tec boots and a Baja MTZ tire from his Ford truck. Agents shipped the boots and tire, along with the casts of the tire and boot prints found at the fires, to the FBI for further comparison.

On June 11, 2008, a BLM special agent testified before the federal grand jury in Boise, Idaho. The grand jury returned a seven-count indictment for violations of title 18 of the United States Code, section 1855, titled "Timber set afire."

On June 13, 2008, BLM agents and rangers and U.S. deputy marshals arrested the suspect at his residence. He appeared in U.S. district court and pled not guilty to all seven counts of arson. He was released on his own recognizance with electronic monitoring and other conditions set by the court, including a prohibition from working for the PFD.

Meanwhile, special agents learned the suspect often drove a Ford Ranger when his other pickup broke down. Agents found the Ford Ranger at a family member's residence. On December 15, 2008, BLM special agents and deputies from the sheriff's office served a federal search warrant at the residence, recovered a Big O Bigfoot A/T tire from the Ford Ranger, and shipped it to the FBI.

In January 2009, the case was presented to a jury in U.S. district court in Boise. Testimony during the 4-day trial linked the suspect to the fires through physical evidence, which included the tire and boot prints, eyewitness testimony, and cell phone and employment records. At the end of the trial, the jury returned a verdict of guilty on six out of the seven fires.

The defendant was sentenced on May 13, 2009, to 72 months in federal prison and was ordered to pay \$155,881.36 in restitution to the BLM and PFD for firefighting costs; a portion was reserved for the Parma Rod and Gun Club to pay for damages to its property.

*Special Agent Kyle Gandiaga* started his BLM career as a firefighter in 1997 while in college. He was then hired as a law enforcement ranger with the BLM in Pocatello, Idaho, and 4-1/2 years later, he became a special agent in Boise, Idaho.

bonfires and fireworks displays. Fights, rapes, stabbings, and shootings were on the rise at the dunes. Property and vehicles were vandalized and stolen, and roving bands of criminals harassed visitors. Felony Films recorded this lawless behavior to sell reality videos. Urban crime had come to the public lands.

Near the Thanksgiving holiday weekend in 1999, the BLM and other federal, state, and local law enforcement agencies prepared for a record number

of visitors to the dunes. As the weekend wore on, a largely unruly and lawless crowd became defiant over the law enforcement officers' efforts to maintain law and order, and a violent protest erupted. The protest forced law enforcement officers to fall back, regroup, and reevaluate their response.

In 2000, the BLM commissioned a team to study and evaluate the 1999 Thanksgiving weekend events and make recommendations for future events. Beginning in 2002, the Bureau began to

train law enforcement officers in riot control and PepperBall rifle use and added a decal of the law enforcement badge to ranger patrol vehicles. The BLM also began managing the dunes and other major events under the Incident Command System. Imperial County closed Competition Hill at dark and broke up large gatherings of people in the dunes, declaring them an unlawful assembly. These proactive efforts significantly improved public safety at this and other large-scale permitted events on public lands.



Imperial Sand Dunes Recreation Area in California.

## The BLM Meets the Counterculture at the Burning Man Festival | *By Doran Sanchez*



The ritual burning of a sculpture at the end of the event.

Memorialized in print, photography, and yes . . . scandalous rumor, Burning Man is the infamous desert festival of whimsical art and sculpture, interactive architecture, sexual expression, explosive pyrotechnics, outrageous costumes, and for some . . . let-it-all-hang-out nudity. As envisioned, the event is an experiment in community, radical self-expression, and radical self-reliance.

Burning Man began in 1986 as a simple summer solstice bonfire ritual on Baker Beach in San Francisco. Cofounders Larry Harvey and Jerry James and a few friends erected an 8-foot wooden effigy and concluded the ritual by burning it. The ritual increased in popularity and became an annual event.

By 1990, more people had joined in what came to be called the “Project.” Early participants were skilled in construction trades and included members of San Francisco’s Cacophony Society, a group of artists devoted to creating interactive events. The larger-than-life “Man” had evolved to a height of 40 feet.

The Project’s beach evolution ended in 1990 after the Golden Gate police stopped participants from burning the effigy because they didn’t have a permit. Harvey joined Cacophony Society founders Kevin Evans, John Law, and Michael Mikel, who were planning Zone Trip #4—Evans’ unrelated but similar arts-based Dadaist event also culminating with the burning of a temporary sculpture.

Zone Trip was to be held on the remote and largely unknown Black Rock Desert playa about 110 miles north of Reno—a flat, 35-mile-long, 10-mile-wide dry lakebed entirely devoid of vegetation located in northwestern Nevada. (The area is entirely within the Black Rock Desert—High Rock Canyon Emigrant Trails National Conservation Area, designated by Congress in 2000 and managed by the BLM.)

Harvey and friends were among the 250 people who participated in the 1990 Labor Day weekend festival. BLM law enforcement rangers came upon the group and told them they needed a permit to hold their event on public lands.

That didn’t matter. The event was hailed a success, Harvey moved his Project to the Black Rock Desert, and the infamous Burning Man took its name from the ritual burning. The festival occurs the week leading up to and through the Labor Day weekend and has been held on the Black Rock Desert playa every year since the early 1990s.

In 1991, the BLM issued the first permit for Burning Man. The annual festival is the largest special recreation permit (SRP) issued by the BLM, both in terms of number of participants and cost to administer the permit. The permit is reviewed annually to address new resource or environmental concerns, such as the number of “Burners,” which has increased each year from a modest 250 in 1990 to more than 52,000 in 2012. The BLM’s cost to administer the SRP has changed from a \$67,000 flat

fee from 1990 through 1996 to a charge of \$4 per attendee per day from 1998 through 2006, which generated repayments of more than \$800,000, to full cost recovery and commercial use fees (together more than \$1 million) in 2012.

Black Rock City (BRC) is the iconic home of Burning Man, and in 1997, event promoters formed a Limited Liability Corporation (LLC) to address the evolving complexity of regulating the event. The LLC manages the festival and works year-round on the project. Entry fees pay for the SRP and infrastructure supporting the festival.

Law enforcement is a major cost, and the LLC coordinates closely with BLM managers, staff, rangers and special agents, and other cooperators (Pershing and Washoe County Sheriffs’ Offices, Nevada Highway Patrol, Nevada Department of Public Safety—Investigation Division, Pyramid Lake Paiute Tribal Government, and Nevada Department of Health and Human Services) throughout the year to ensure Burning Man is as safe and trouble-free as possible. The level of law enforcement the BLM requires to deter violations and ensure public safety in BRC remains an issue with the LLC.

BRC is a 5-mile-square dot on the playa surrounded by a perimeter fence to keep out freeloading Burners. Within this square, BRC is built in a semicircle using global positioning systems to locate streets, intersections, and significant sites. The wood and neon Man is erected in the center of the city atop a platform often towering 80 feet above the playa surface.

BRC is a pedestrian city that seemingly overnight becomes Nevada’s fourth largest city. The LLC strictly enforces the speed of registered vehicles and bans drugs, fireworks, firearms, dogs, and driving of unapproved art cars. The LLC strictly endorses Leave No Trace principles and pack it in, pack it out practices. After more than 20 years of monitoring and environmental analysis, no significant impacts to the playa have been identified.

Burning Man went airborne in 2002 after the Federal Aviation Administration approved the Black Rock Airport. In 2007, more than 150 pilots from around the world, some flying vintage planes, landed at the airport.

During the event, more than 90 percent of the playa remains open to the general public. The desert can be brutal—subjecting Burners to blistering heat, freezing cold, and windstorms that swallow the city in dust.

Despite potential discomforts, the festival attracts Burners from throughout the United States and around the world. From its simple beginnings 25 years ago, Burning Man has evolved from a do-it-yourself art festival to the premier counterculture arts festival in the world.

## A New West Leads to a Renewed Planning Emphasis

While forays into large-scale ecosystem management and planning characterized the 1990s, during the early 2000s, the BLM renewed its emphasis on multiple use management and strengthening its land use planning to meet 21st century challenges.

The West was changing at a dramatic rate, and with unprecedented population growth came increasing demands for public land use. In 2000, the BLM strengthened its national planning office in Washington, DC. The office launched an evaluation of all RMPs to determine whether they were keeping pace with the new demands in the West and adequately addressing sensitive resources such as endangered species. The BLM presented preliminary results of the evaluation in its 2000 report to Congress, “Land Use Planning for

Sustainable Resource Decisions.” The report stated that 141 out of 162 BLM land use plans were in need of revision—many were more than 20 years old—and that the outdated plans increased litigation risk and hindered the BLM’s ability to adapt quickly to changing conditions.

The report called for immediate and aggressive action and requested substantial, multiyear funding for the BLM to prepare or update land use plans and address other deficiencies in its planning and NEPA programs. The report also outlined a plan revision strategy that would reduce the number of BLM land use plans from 162 to 135 by combining smaller planning areas into larger planning units. In response, Congress increased the amount of funds appropriated beginning in 2001.<sup>72</sup>

Planning priorities in the early 2000s focused on conventional energy development and newly designated units of the NLCS. At that time, the

BLM identified three primary issues challenging land use planning:

- Increasing demand for energy resources and the need to balance the demand with other uses and conservation.
- Continuing growth of populations and communities in the West.
- Ecosystem changes, including drought, weed and insect infestations, wildfire, and other impacts of climate change.

Further refining the BLM’s focus were issues involving critical habitat for species on the federal threatened and endangered species list, fire management concerns in wildland–urban interface areas, and new recreational opportunities such as off-highway vehicle use. The BLM poured its resources into gathering information, particularly to support oil and gas leasing decisions.

## The Bureau Makes Better Use of Assessment, Inventory, and Monitoring Data

The use of GIS technology greatly enhanced the BLM’s ability to map and share data. The BLM collected vast amounts of information to support resource decisions, but it generally housed the data at local offices and did not typically share it. In 2003, the BLM developed the Enterprise Geographic Information System to allow all BLM offices and the public to access and analyze information on public lands resources from a central location. The application helped the BLM integrate geospatial information into land use planning, analyze actions and impacts, look beyond planning area boundaries, and share data.



Public lands near an urban community in California.

*Doran Sanchez* is the Route 66 project lead in the BLM’s Barstow Field Office. Prior to that, he was the deputy state director for external affairs in California, the chief of communications in Nevada, and a public affairs specialist for the California Desert District, where he began his federal career.

In 2004, the BLM embarked on an effort to develop a national assessment, inventory, and monitoring (AIM) strategy to manage the collection, analysis, use, and reuse of data so that the Bureau could apply it across disciplines and share it with the public. This data resource is central to the BLM's ability to support scientifically based decisionmaking, especially on a landscape scale.

In 2007, the BLM deployed ePlanning for new plans. The ePlanning initiative, begun in 2001, integrated GIS technology, content software, comment processing, and analysis tools into planning and NEPA document development. The user-friendly system made it easier for the public to participate in and comment on planning efforts.

As former BLM State Director Elaine Zielinski noted, "The world and its data are moving faster and faster. Our challenge is to be able to respond quicker and more efficiently."<sup>73</sup>



Training course for ePlanning.

### The Pace of Planning Increases

The pace of planning increased considerably during the first years of the new century; between 2001 and 2012, the BLM completed 67 new RMPs, initiated 48 plan revisions, and identified the need for 42 additional planning efforts (including efforts to address its 18 remaining management framework plans). Included were 21 high-priority, time-sensitive plans needing revision or development to meet the nation's energy needs and to protect specially designated areas, such as critical habitat for threatened or endangered species. The BLM also completed 18 major, multiresource amendments to land use plans. The total number of BLM plans changes as plan boundaries are refined; as of 2012, the BLM estimated it had 157 plans.

### New Approaches Take Shape

Plan development became increasingly complex, time consuming, and expensive. By 2009, an RMP could cost millions of dollars and take 4 to 6 years to develop. An RMP/EIS, with its associated appendices, could fill more than 1,000 pages. Many plan revisions experienced significant delays and additional costs because of resource complexity, stakeholder involvement, and shifting priorities. The BLM no longer completed plans and associated EISs in-house; private contractors prepared significant portions of them.

By 2005, a new approach to planning was beginning to take shape—one that would address the constantly changing demands and conditions on public lands. That year, a team of planning veterans joined BLM employees in the Shoshone Field Office in Idaho to revisit the development and implementation of the office's 1986 RMP/EIS and

to guide the office in developing a new plan.<sup>74</sup> The team stated that future RMP documents should be "outcome based" rather than prescriptive in nature, adding that the plan should "accurately describe what the preferred outcome of an alternative should be and should not commit the agency to any specific method of implementation." Additionally, "adoption of this approach should significantly increase the degree of flexibility inherent in the planning process, reduce the need for amending the plan, and permit the adoption of innovative management approaches."<sup>75</sup> The team also stressed that "close coordination and cooperation with stakeholders in the planning process was . . . absolutely critical to the success of any new RMPs." It noted that the planning process had to have "an adequate level of flexibility integrated into it in order to deal with new or emerging issues," which was a clear reference to the need for adaptive management in future planning efforts.<sup>76</sup>

The BLM traditionally encouraged its state and field offices to involve local, state, tribal, and other federal agencies in carrying out NEPA's planning requirements. Its goals for "cooperating agency" relationships included gaining early



Planning meeting with stakeholders.

and consistent involvement of key governmental partners; incorporating local knowledge of economic, social, and political conditions; addressing intergovernmental issues; and building relationships of trust and collaboration for long-term mutual gain.

In 2005, the BLM amended its planning requirements to strengthen these goals and ensure

that staffs at all levels engaged their governmental partners through the cooperating agency relationship whenever preparing or revising RMPs. This relationship went beyond "consultation" to engage other agencies in a working partnership. Agencies shared skills and resources to help the BLM develop RMPs that better reflected the needs and conditions of their jurisdictions and the citizens they represented.

In light of lessons learned, the BLM began moving toward a more dynamic approach by recognizing plan development as only one phase of a planning cycle composed of plan development, implementation, evaluation, and amendment. This approach reduced the need for burdensome plan overhauls, and instead, made land use planning iterative, always ongoing at the field, state, and national level.



Specialists from different agencies touring public lands in Idaho.

## Tribal Consultation | *By James G. Kenna*

Indian tribal governments and the United States government have a unique relationship—one that includes a legal commitment set forth in the Constitution of the United States, treaties, statutes, Executive orders, and court decisions. This commitment has been interpreted and applied as policy across history, sometimes in ways that no one would support today, but more recently, policy has focused on tribal consultation. President Clinton issued Executive Order 13175 on November 6, 2000, emphasizing the government’s responsibilities to establish regular and meaningful consultation and coordination with Indian tribal governments. President Obama issued an Executive memorandum on November 5, 2009, identifying tribal consultation as “a critical ingredient of a sound and productive Federal-tribal relationship.” These documents capture the essence of what is required in any consultation between governments: a relationship and communication.

Laws and policies provide the essential structure and process for consultation by clarifying roles and promoting consistency. But consultation rests on relationships between and among people, most of whom are not lawyers or policymakers. For the Bureau of Land Management, consultation responsibilities center on field managers, who are delegated decisionmakers acting on behalf of the United States within the scope of the agency mission. They know the lands involved in greater detail than other delegated officials and oversee teams of specialists who work in the area. Field managers also have a realistic opportunity to create and sustain relationships with tribal officials through regular contact.

Indian tribes vary greatly in how they approach consultation, but in most cases, consultation primarily involves tribal elected officials with broad responsibilities. Tribes exercise inherent sovereign powers across a range of typical government services and functions, and consultation with federal agencies must be integrated with all other activities of government. It has always been my experience that land uses and land management practices are of great interest to tribes, generally because all lands have attributes that link to cultural traditions, migrations, usual and accustomed uses, stories, history, and sometimes religious practices or treaties. Personal relationships can, and do, form at multiple levels in government-to-government relations, but a positive relationship between field managers and tribal leaders is a huge asset to both parties.

When the Santa Rosa and San Jacinto Mountains National Monument Act of 2000 became law, it referenced an agreement developed a year earlier through consultation with the Agua Caliente Band of Cahuilla Indians. Chairman Richard Milanovich and I signed that agreement after months of consultation with the Tribal Council.

*James (Jim) Kenna* was the BLM state director in California until his retirement in 2015. He previously served as the state director in Arizona; associate state director in Oregon; deputy assistant director for resources and planning in Washington, DC; and field manager in Palm Springs, California. He was also a budget analyst for the Department of the Interior.



Establishing a cooperative relationship with the BLM that integrated management of nationally significant lands was possible, at least in part, because we knew each other well. I credit Chairman Milanovich with the vision to see possibilities and the courage to set precedents.

Because tribal governments vary in their capacity, structure, and priorities, effective ways to organize consultation communications also vary. Some tribes focus their capacity on very specific subjects or geographic areas, while others prefer an expansive range of subjects. Sometimes it is acceptable to fully discuss and resolve certain questions or issues at the staff level, while in other cases, the expectation is to involve the Tribal Council. To resolve any uncertainty, expectations need to be discussed with each individual tribe. In some cases, discussions progress to a formal written agreement. A clear, common understanding about communication protocols is another major contributor to successful consultation.

While consultation with individual tribes is far more common, there are instances when a multiracial forum is the most appropriate approach to consultation. In Arizona, the BLM conducted government-to-government consultation with tribes affected by remediation of contaminated ground water at the Pacific Gas and Electric Topock Compressor Station adjacent to the Colorado River. Tribal safety interests downstream were considered together with cultural concerns about proposed wells that had been addressed through a cultural and historical properties management plan. Though participation among tribes may vary and consensus may not be possible, this instance illustrates that using a fair, open, and honest approach gathers perspectives that better inform and improve decisions.

Strong relationships needed to address difficult subjects during consultation sometimes develop outside of any consultation process, often through a shared project. In one instance, grave markers from a burial site were stolen. The BLM recovered the markers and then engaged the tribe in dialogue about how best to reestablish and protect both the markers and the site. The process of working on this project together improved the relationship and opened up communications for subsequent consultations.

Government-to-government consultation includes consultations required under section 106 of the National Historic Preservation Act, but it is much broader. Given the breadth of interests and issues in which governments engage, it makes no sense to try to force them into a framework designed for making property eligibility determinations. Those determinations, and the section 106 process, are critical to making informed decisions, but it is important to have a relationship that extends beyond projects and not wait until an undertaking is defined. The BLM invited 40 tribes to participate in formulating alternatives for the “Desert Renewable Energy and Conservation Plan.” Not all chose to participate, but many did, and the input was incorporated into the alternatives before a preferred alternative (or an undertaking) for the draft environmental impact statement was identified.

While achieving consensus on highly controversial projects is not always possible, diplomacy, respect, and understanding are. Personal relationships, clear communication protocols, and a relationship founded on more than project proposals can promote success. As consultation based on the latest policies matures, there will be difficult moments, as there are in any government-to-government relationship. But strong relations based on honest consultation are not only possible, they are essential to the Bureau’s mission.

## The Bureau Develops a 21st Century Workforce

The new century inspired the BLM to look not only at its programs and processes but also at its

employees to consider what kind of workforce it would need to meet land management challenges into the future. The BLM’s leaders also considered the projected retirement of many seasoned employees.

## The Changing Face of the BLM | *By Melissa Dukes*

The face of the Bureau of Land Management (BLM) has, from the beginning, reflected the face of the people who use its public lands. In 1953, the BLM emblem consisted of profiles of white men from the primary user groups—logging, ranching, oil drilling, mining, and surveying. Photos from the General Land Office, the Grazing Service, and the early years of the BLM indicate that the emblem accurately reflected the workforce at that time.

The 1960s saw a national conservation movement that impacted all federal land management agencies. In 1961, the BLM hired its first “lady” forester, Elaine Mosher. Though forestry had been dominated by “virile, macho-type males,” according to former Montana State Director Edwin Zaidlicz, what Mosher “lacked in size . . . she more than made up for with tenacity, awesome drive, courage and infectious adaptability.” Mosher changed the face of the BLM by proving that women could perform traditional BLM jobs as effectively as men.

With the passage of the Classification and Multiple Use Act in 1964, BLM’s workforce was expanded to include wildlife, recreation, soil, and water resource specialists to reflect broader responsibilities. Multiple use advisory boards were established to better represent the BLM’s many local and regional constituents. As a result of the act, the BLM hired new types of employees with different ideas about managing public lands. By the end of the 1960s, the face of the BLM had changed even more. It now included men and women who, through education and experience, looked at public land management differently.

The 1970s brought more changes to the BLM. People from around the country were discovering recreational opportunities on BLM lands—lands that were once the playgrounds of local residents. A number of critical pieces of legislation were passed, including the Federal Land Policy and Management Act, which provided the framework for BLM’s multiple use mission. As a result of the new legislation, the BLM’s workforce grew from 4,300 employees in 1970 to 9,700 employees by 1980. Many of these newly hired employees brought diverse racial and ethnic backgrounds as well as diverse expertise to the BLM.

For example, Danny Charlie, a member of the Navajo Nation, was hired by the BLM in the 1970s in response to the requirements established by the National Environmental Policy Act. His job was to ensure that the BLM considered the concerns of local Navajos before resource decisions were made and implemented. Once again, the face of the BLM changed as its mission was expanded.

In the 1980s, two major shifts occurred within the BLM. First, wildland fire management crews, operating out of the Boise Interagency Fire Center and out of Alaska, were expanded throughout the BLM to provide immediate response to fires. The majority of the crew members were hired from the surrounding areas, putting a local face to the BLM fire workforce. Second, in 1982, Interior Secretary James Watt shifted onshore minerals responsibility from the Minerals Management Service (since named the Bureau of Ocean Energy Management, Regulation and Enforcement) to the BLM. With this move, the BLM gained 800 additional employees, including petroleum engineers, geologists, land law examiners, and petroleum engineering technicians. These new employees brought a different focus and a different client base, including major national and international energy companies, to BLM’s workforce.

In the 1990s, BLM managers recognized that additional efforts were needed to ensure the face of the BLM reflected the face of the people for whom the public lands are managed. Since the people who used and cared about the public lands came from around the country, so should the BLM workforce. Managers worked with land grant colleges and universities, associations, and user groups from around the country to encourage their students and members to apply for jobs in the BLM.

During the 2000s, recreational use of the public lands continued to grow, wildfires increased in size and frequency, and interest in domestic and renewable energy resources intensified. The Energy Policy Act of 2005 increased the number of employees responsible for onshore minerals activity as it expanded BLM’s responsibilities in this area.

Erika Miller is one of several people from diverse backgrounds hired in response to the Energy Policy Act. Originally from Illinois, Miller, who is half Hungarian and half African-American, graduated from Illinois State University and then joined the United States Army. She fell in love with recreating on public lands in Colorado while stationed at Fort Carson. After a tour in Iraq, and soon after getting out of the Army, Miller was hired by the BLM in 2007 as a petroleum engineering technician, conducting field inspections on oil and gas wells and helping fight wildfires during the busy summer season.

Today, the BLM’s 10,500 employees come from around the country. The men and women of the BLM reflect ALL citizens of the United States—be they White, Black, Asian-American/Pacific Islander, American Indian/Alaskan Native, or Hispanic.



Elaine Mosher.



Danny Charlie.



*Melissa Dukes* was the human resources officer for the Colorado State Office from 2001 until her retirement in 2014. Prior to joining the BLM in 1993, Melissa worked for the Department of the Navy for 16 years in California, Washington, and Louisiana.

fields of study enabled the BLM to enrich and diversify its workforce. More opportunities opened up for people from all walks of life. The BLM hired Denise Meridith, a Cornell University graduate initially passed over by other agencies who weren't hiring women at the time, and she eventually became the BLM's deputy director, the highest career post in the agency, and was the first female and the first African American to do so.



organizational knowledge. Twenty-five years after passage of FLPMA, the BLM projected that more than 60 percent of its leaders and 40 to 50 percent of its employees would be eligible to retire in 5 years. Concerned with maintaining organizational effectiveness as it faced this anticipated wave of retirements, the BLM developed the Leadership Excellence Program in the 1990s and expanded it in 2005 with a leadership succession plan. This program provided a roadmap for employees to explore and develop leadership skills and identified succession needs for key leadership positions. It also provided a suite of training courses at various levels under the sponsorship of the BLM's National Training Center. Employees could continue the growth and development of their leadership skills

Though the BLM's workforce was becoming more diverse, the agency was at risk of losing valuable

and self-select managerial tracks. The core curricula included the Pathways, Emerging Leaders, and Leadership Academy courses.

Although the predicted mass exodus did not materialize, by 2005 the BLM had become a mix of multiple generations with varied cultural and technical backgrounds working together and, increasingly, working with partners, to accomplish a complex mission.

In 2010, the BLM revamped the Leadership Excellence program and added Leadership Exploration and Development classes to expand leadership training opportunities for BLM employees.

### The Maturing of BLM's Tribal Relationships | *By Cheryle Cobell Zwang*

There are more than 560 federally recognized tribes in the United States, and I am an enrolled member of one, the Blackfeet Nation. I was born and raised on the Blackfeet Indian Reservation in Montana, and I am very proud of my American Indian heritage. I began my federal career as a GS-3 in 1987, and over the years, as I have moved into positions of greater responsibility, I have always strived to enhance federal-tribal relations. Often I have served as a cultural translator, educator, and mediator for both federal and tribal leaders to help avoid missteps or miscommunication. In this role, I have witnessed great patience and perseverance by both tribal and BLM leaders, creating a foundation on which the BLM and the tribes have built and maintained strong relationships.

During my first year on the job, I was fortunate to be introduced to another tribal member in our office. She coached me and helped me to learn and adjust to the federal culture and to share my culture. For me, federal meetings were a lesson in themselves. I learned, for example, that in federal meetings, time is the driver, and when the time is up, the discussion ends. In many tribal meetings, by contrast, the topic drives the meeting, and regardless of the time allocated, a discussion does not end until the attendees decide they are done. In federal meetings, interrupting another person is often tolerated and sometimes even expected, indicating that people are engaged. Generally, in tribal meetings, interrupting another person is viewed as unnecessary, as everyone will have time to speak. Finally, in federal meetings, while decisions are sometimes made by consensus, often the meeting is to brief the leader and the decision is made solely by that person after listening to his/her advisors and staff. At tribal meetings, leaders do not typically operate autonomously. They need to know what the other council members are thinking and reach a majority or consensus before a decision can be made.

During my second year on the job, I was asked to serve as a facilitator/recorder in a meeting between tribal and federal leaders being held at a reservation facility. Early on in the meeting, many cultural miscues took place, and I could see frustration was building for both the federal managers and the tribal officials. I watched as the more senior federal facilitator managed the on-reservation meeting with tribal leaders as he would a federal meeting. For me, it was like watching two teams play a game, with each having a very different understanding of the rules. Luckily, during the morning break, we discussed the situation, the cultural translation was shared with federal leaders, and adaptations were made so that the meeting was ultimately successful. I believe this sort of coaching by Native American staff to federal leaders has often laid the foundation for great strides in federal-tribal relations.

Much has changed over the years. Most tribal governments have natural and cultural resource departments in their organizations, and tribal members and other resource professionals are often working as department heads. These individuals typically understand how federal organizations and processes work. The same is true for federal leadership and staff; we now have a better understanding of how tribal governments operate and how they are organized. Federal agencies have made it a priority for their managers to learn the history of federal-tribal relations and to understand what our unique roles and responsibilities are to American Indian tribes and Alaska Natives today. The BLM is now more diverse and culturally sensitive. Consultation with tribes has progressed from us informing the tribes



A traditional dance group in Alaska with Brenda Takes Horse (back L), an Alaska Native, and Cheryle Zwang (back R), both BLM employees and past board members for the Society of American Indian Government Employees (SAIGE).



Cheryle Zwang (second from L) and Tex Hall (fifth from R), past president of the National Congress of American Indians, with the Youth Track students at the national SAIGE training conference.

of our actions to ongoing government-to-government consultation. In fact, tribes are expressing ever-greater political influence, and with each new administration, elected officials are responding. As a result, President Obama was adopted into the Crow Tribe of Montana. He hosted tribal summits in the Nation's Capital, and his administration resolved the Cobell class action lawsuit resulting in improved management of American Indian trust assets.

Yes, there have been missteps, but superimposed over all of this, I have seen a sincere belief by both federal and tribal leaders in the value and importance of our public lands and resources and a resolute desire to find a way to work together. There is a famous proverb to which I subscribe: "We do not inherit the earth from our ancestors, we borrow it from our children." As a BLM employee, I am able to contribute to the care of the public lands and resources we manage today and to help ensure that they remain a treasure for our children and all those generations yet to come. It is why I encourage other Native Americans to join our ranks, and it is why I so strongly believe in the need for strong federal-tribal relations. It is also why I joined the BLM and the federal family and why I remain here more than 20 years later.

*Cheryle Cobell Zwang* was a special assistant to the BLM Idaho state director and the deputy state director for communications in the Idaho State Office. She assisted BLM leaders in advancing the unique relationship between the federal government and federally recognized tribes and in recruiting talented and diverse individuals to work with the BLM.



A session during the Pathways program.







Eastern States Office in Virginia.



Trailhead managed by the Boise District Office in Idaho.



Lands managed by the Needles Field Office in California.

## Back to the Future: Changes in BLM's Organization in the 21st Century | *By Rebecca Mack and Alexandra Ritchie*

For many years prior to 1995, the BLM had been a four-level line management organization (headquarters office in Washington, DC; state offices; district offices; and field offices). This organization had a logical progression of leadership positions that led to upper level management opportunities. For instance, it was understood—to be a field manager, you needed to be a supervisor with experience in multiple programs; to be a district manager, you first needed to be a field manager; and so forth. It was also understood that you needed to have experience in multiple geographic locations. Leadership succession meant that you held different positions at each level of the organization at various locations.

Beginning in 1995, the BLM organization was significantly streamlined and flattened out. The Bureau went from a three-tier field organization (state, district, and field offices) to a two-tier structure (state offices and field offices). The district level was essentially eliminated, and the emphasis was on work performed by teams rather than a structured organization. The two-tier organization had one level of line authority below the state director—each field office (headed by a field manager) reported directly to the state director. This reorganization was driven by the Department of the Interior's 1994 streamlining plan and supported by BLM's acting director, Mike Dombeck, who wanted more resources sent to the field, especially to implement ecosystem management. A number of states moved directly to a two-tier structure while other states used the guidelines to streamline their organizations.

During this time, the recognized career ladder progression for leadership positions became less clear, especially the requirement for experience at multiple geographic locations with the elimination of the district organizational level. The BLM became concerned about maintaining organizational effectiveness as it also faced a wave of retirements throughout its workforce, including in key leadership ranks, and developed the Leadership Excellence Program.

Two years later, all of the states had made significant streamlining and efficiency moves; however, there was a lack of

consistency throughout the BLM. A team was assembled to address consistency issues and to develop alternatives for the organization and, in 1997, provided the Executive Leadership Team (ELT) with a set of alternatives, which included a two-tier structure.

Almost 10 years later, in 2007, following a series of organizational reviews that included the BLM futuring review and the Washington Office efficiency review conducted in 2006 by members of the ELT, BLM leaders concluded that all of the state organizations, except for the Eastern States organization, should be modified three-tier structures with state, district, and field offices. This structure was expected to result in better service to the public and quality control, reduced duplication of overhead services, and a better career path for the employees. Any deviations from the three-tier organization would be the exception, not the rule.

The district manager in most BLM states is a line officer with a regional focus who both manages and provides zoned services (e.g., public affairs or fire support) to multiple field offices or National Landscape Conservation System units. In some cases, the district is organized exclusively along either functional lines or geographic lines (e.g., the Las Cruces District in New Mexico, which has a large geographic area to administer and no field offices).

The decision to return to the three-tier structure was part of the ELT's long-term strategy, "Managing for Excellence," to make the BLM an effective, efficient, and responsive organization prepared to fulfill its complex multiple use core mission and meet the changing needs of its constituents, customers, and employees over time.

Today, the BLM's field organization represents a hybrid of tiered structures that have been determined to best meet the diverse needs of each state and the local constituents. The BLM has adapted, restructured, downsized, and rightsized over the years to accommodate the changing needs of the organization and its constituencies as well as its increased responsibilities. It surely will continue to evolve in the future.

## The Secretary Designates the National System of Public Lands

As the BLM entered the 21st century, its progression toward a more comprehensive and unified management strategy led to a change in the very name of the assets it administered. On December 16, 2008, the properties under the BLM's management, previously referred to as "public lands," were officially designated the "National System of Public Lands." Those who are unfamiliar with the Bureau or its history might have reasonably concluded that the subtle change

was merely symbolic. But there was much more to the story.

"Calling these lands the National System of Public Lands implies that all of our lands and resources are linked in some capacity," said Jim Caswell, Director of the BLM at the time. "This linkage is at the heart of our landscape approach to land management."

He elaborated further, saying, "The designation will emphasize the interconnectedness and interdependence of the public lands and all who benefit from them; better convey the diversity of

interests and values associated with the public lands and how these are served through balanced, comprehensive, management; and increase the critical importance of enlightened stewardship to the preservation of these lands and to the success of BLM's work on behalf of the American people."<sup>77</sup>

The BLM's advancement toward a holistic and interdisciplinary management philosophy—recorded over the last half century and continuing today—is visible across the landscape and across the Bureau's resource management programs.



Terry Badlands Wilderness Study Area in Montana.

*Rebecca Mack and Alexandra Ritchie* were management and program analysts in the BLM's Division of Evaluations and Management Services in the Washington Office. Rebecca had a long career of federal service. Alexandra came to the BLM in 2006 as a Presidential Management Fellow in public affairs and currently works for the Bureau of Ocean Energy Management.



BLM Director James Caswell.

### A Director's Perspective: 2007-2009 | By James L. Caswell

On a cold January afternoon in 2007, my phone rang. Assistant Interior Secretary Stephen Allred was calling to inquire about my interest in becoming director of the Bureau of Land Management. We were well acquainted and had both worked for Interior Secretary Dirk Kempthorne when he was the governor of Idaho. The prospect was exciting but daunting. The last thing I wanted was to be merely a placeholder during the waning days of the Bush administration. On the other hand, how could I turn down an opportunity to serve as director of the very agency where I had begun my career exactly 40 years before?

In August I was sworn in as the BLM's 16th director. During the confirmation process, I immersed myself in the issues, priorities, and initiatives of the BLM and the Department and talked with people to develop a focused agenda for my time as director. I went to Washington with three goals: 1) complete the initiatives and priorities underway; 2) reach out to employees and build on their ingenuity, creativity, and enthusiasm; and 3) institutionalize the Healthy Lands Initiative. Even with this clarity, I knew it would be difficult to stay on course in the dynamic environment of Washington. I would need to be flexible and adapt to new challenges.

New leadership often brings about new initiatives and policies and, in many situations, reorganizations, including executive personnel moves. I felt strongly that such efforts would be counterproductive, so I resisted making those kinds of changes. Instead, I embarked on a transition process to build relationships and establish credibility with the Executive Leadership Team and the workforce so that we could focus on achieving our most important initiatives and priorities.

A pressing national priority was to implement the Energy Policy Act of 2005. In 2007, oil prices climbed to more than \$100 per barrel for the first time, and the nation was looking for opportunities to increase production from all sources—renewable and nonrenewable. The act came with many mandates for the BLM, most with required timeframes. We made major revisions in conventional onshore oil and gas regulations and leasing and permitting procedures; we updated our best management practices and established oil and gas pilot offices to improve coordination, environmental analyses, transparency, and timeliness. This approach worked so well that we established renewable energy pilot offices by Secretarial Order. We also revised geothermal regulations and completed or initiated wind, solar, and geothermal programmatic environmental impact statements. In addition, regulatory advances were made in oil shale, tar sands, coal leasing, and energy right-of-way corridors.

Competing demands for public land uses and resources were at an all-time high during this period and the BLM faced tough challenges in carrying out its multiple use mission. From these struggles and the public acrimony surrounding natural resource management, the Healthy Lands Initiative was born. This is a long-term collaborative effort to strategically identify, conserve, and restore high-priority aquatic and terrestrial ecosystems while providing for managed development. The concept was in its infancy when I became director, and I assumed a direct leadership role in it. My vision was to fundamentally change how the BLM defines its land-use planning areas, selects priority conservation and restoration projects, and refines monitoring protocols to facilitate adaptive management. We made tremendous progress in institutionalizing this approach Bureauwide. In fact, you will see this approach still being applied in the BLM today, even though it may not be called the Healthy Lands Initiative.

While I was director, I started a director's blog to connect directly with BLM employees, and it was an instant success. Most issues employees raised fell into three categories: 1) workplace and workforce concerns, 2) managing our nation's natural resources, and 3) BLM's future. I visited BLM offices all across the country and heard positive comments regarding the blog's value. I personally read every posting and used the feedback in policy decisions. I regret not having had more time as director to work on more of these ideas.

Much of my time centered around an issue I was not even aware of when I became the BLM director, but one that has been debated for more than 30 years. The effort to give BLM lands a formal name dates back to at least the 1970s when the Federal Land Policy and Management Act was passed. The Public Lands Foundation brought it to my attention, and after looking into it, I became convinced of its merit. I initiated a yearlong process of collaboration with the Office of the Secretary, the Congress, and the administration to finalize a proposal. On December 16, 2008, Secretary Kempthorne signed Secretarial Order No. 3280, designating BLM-managed public lands as the "National System of Public Lands." This provided, for the first time, an official name for the more than 245 million acres under BLM management.

I left Washington, DC, pleased with our accomplishments and satisfied that I did my best to meet my personal goals, advance the administration's agenda, and connect with employees in furthering the BLM's multiple use mission. It was also my honor and privilege to serve Secretary Kempthorne, Assistant Secretary Allred, the dedicated employees of the BLM, and the American people.



Monitoring terrestrial habitat.



Geothermal powerplant at Mammoth Lakes in California.



James L. (Jim) Caswell served as the BLM director until 2009. Previously, he was administrator of the State of Idaho's Office of Species Conservation. Jim spent 33 years in federal service, working for the BLM, Bonneville Power Administration, and Forest Service. He is a Vietnam veteran and graduate of Michigan State University.

### Notes

1. The National Landscape Conservation System was often shortened to NLCS; however, the BLM later moved toward using the term "National Conservation Lands" to refer to the designated lands whenever possible.

2. Entered into the Department of the Interior Manual, Series 02-Organization, Part 135: Bureau of Land Management (135 DM 2), on July 12, 2000.

3. Congress increased the BLM's appropriation by \$11.5 million to help meet the added workloads. Bureau of Land Management, "Information on the National Landscape Conservation System," Information Bulletin 2001-067, January 30, 2001.

4. Bruce Babbitt, *Cities in the Wilderness: A New Vision of Land Use in America*, (Washington, DC: Island Press, 2005).

5. U.S. Department of the Interior, "Interior Secretary Makes Plans to Manage National Monuments," press release, April 24, 2002.

6. Additional legislated NLCS designations included: California's Piedras Blancas Light Station and Florida's Jupiter Inlet Lighthouse Outstanding Natural Areas in 2008, the Old Spanish National Historic Trail on December 4, 2002, and the El Camino Real de Los Tejas National Historic Trail on October 18, 2004. The BLM would also potentially have indirect responsibility for two new designations in the East: the Captain John Smith Chesapeake National Historic Trail designated Dec. 21, 2006, and the Star-Spangled Banner National Historic Trail designated May 8, 2008. Congress designated or expanded 43 wilderness areas between 2002 and 2008.

7. Mesa State College, *Dominguez Escalante NCA Proposal: A Study by the Mesa State College Natural Resources and Land Policy Institute*, 2007, www.mesacounty.us/news/2007/Dominquez-Escalante%20Final%20report%20small.pdf (accessed August 22, 2011).

8. Ken Salazar became Secretary of the Interior in 2009.

9. Catherine Robertson, manager of the BLM's Grand Junction Field Office, in a telephone interview with Elizabeth Rieben on August 22, 2011, and Laurie Sedlmayr, BLM Washington Office, in a telephone interview with Elizabeth Rieben on May 25, 2012.

10. In addition, it was not unusual for one manager to manage two or more units. In cases of joint management, the manager could be from another agency, but it would be a federal manager. National monuments that are managed jointly include Santa Rosa and San Jacinto (with U.S. Forest Service), Grand Canyon-Parashant (with National Park Service), and Craters of the Moon (with National Park Service).

11. U.S. Department of the Interior, "Wilderness Inventory and Study Procedures Handbook," H-6310-1, 2001.

12. *Oregon Natural Desert Association v. Bureau of Land Management*, 531 F.3d 1114 (9th Cir. 2008) and *Southern Utah Wilderness Alliance v. Norton*, 457 F. Supp. 2d 1253 (D. Utah 2006) (November 2003 Utah lease challenge), in which the court found that BLM did not sufficiently consider new information regarding wilderness characteristics as part of an oil and gas leasing analysis.

13. Secretary Dan Glickman, U.S. Department of Agriculture and Secretary Bruce Babbitt, U.S. Department of the Interior, "Managing the Impact of Wildfires on Communities and the Environment: A Report to the President in Response to the Wildfires of 2000" (September 8, 2000). This report recommended funding and Congress concurred in the appropriations.

14. Randy Eardley, interview with Tim Murphy, October 2010.

15. Randy Eardley, interview with Tom Boatner, October 2010.

16. Ibid.

17. Kevin Hyde, landscape hydrogeomorphologist, Collins Consulting, for the U.S. Forest Service Forestry Sciences Lab, Missoula, Montana, provided information for this case study.

18. Energy Information Administration, "Table 3.3a. Petroleum Trade: Overview," *Monthly Energy Review*, www.eia.gov/totalenergy/data/monthly/pdf/sec3\_7.pdf (accessed July 15, 2011).

19. National Energy Policy Development Group, *National Energy Policy* (Washington, DC: U.S. Government Printing Office, 2001), www.wtrg.com/EnergyReport/National-Energy-Policy.pdf (accessed July 18, 2011).

20. Matt Spangler and Gerald Karey, "ANWR Push Fails Again, Likely to Resume Next Year," *Inside Energy* (New York: Platts, December 26, 2005) 1.

21. Matt Spangler and Cathy Landry, "BLM Declines to Change Parameters of NPR-A Lease Sale Set for September," *Inside Energy* (New York: Platts, August 26, 2006), 7.

22. Bureau of Land Management-Alaska State Office, "National Petroleum Reserve-Alaska (NPR-A) Oil and Gas Lease Sale Generates \$30,961,806 in Revenue," news release, September 24, 2008, www.blm.gov/ak/st/en/info/newsroom/2008/09/09-24-08\_npr-a\_oil-gas\_leasesale\_generates\_30961806\_dollars.html (accessed July 25, 2011).

23. Bureau of Land Management, "New Study Measures Restrictions on Oil and Gas Development on Federal Lands," news release, November 28, 2006, www.blm.gov/wo/st/en/info/newsroom/2006/november0/0611\_1.html (accessed June 28, 2011).

24. Matt Spangler, "BLM to Issue Rule Tweaking Drilling-Permit Timeline," *Inside Energy* (New York: Platts, July 12, 2004), 1.

25. Bureau of Land Management, "Final Update of Federal Oil and Gas Regulations Will Improve Energy Development on Public Lands," news release, March 7, 2007, www.blm.gov/wo/st/en/info/newsroom/2007/march/NR0703\_1.html, (accessed June 28, 2011).

26. Ibid.

27. Ibid.

28. Ibid.

29. Bureau of Land Management, “BLM Energy Reforms: Questions and Answers” in “Interior Finalizes Onshore Oil and Gas Leasing Reforms,” news release, May 17, 2010, [www.blm.gov/wo/st/en/info/newsroom/2010/may/NR\\_05\\_17\\_2010.html](http://www.blm.gov/wo/st/en/info/newsroom/2010/may/NR_05_17_2010.html) (accessed May 3, 2012).

30. Matt Spangler, “BLM: Lease-Plan Protests Must Come in Writing 15 Days Before Auction,” *Inside Energy* (New York: Platts, July 4, 2005), 11.

31. Bill Loveless, “BLM Approval of 10,000 Wells in N.M. Draws Challenge from Ranchers, Others,” *Inside Energy* (New York: Platts, February 9, 2004), 13.

32. Matt Spangler, “Court Clears Approval of Seismic Plan for Work on Nine Mile Canyon in Utah,” *Inside Energy* (New York: Platts, July 26, 2004), 11.

33. Matt Spangler, “BLM to Lease Otero Mesa Tract Despite N. Mexico’s Suit to Stop Drilling There,” *Inside Energy* (New York: Platts, June 13, 2005), 12.

34. Mark Jaffe, “Suit Targets Roan Drilling,” *The Denver Post*, September 30, 2008.

35. Energy Information Administration, *Annual Energy Review 2009* (Washington, DC: U.S. Government Printing Office, 2010), 318, figure 11.7, [www.eia.gov/totalenergy/data/annual/archive/038409.pdf](http://www.eia.gov/totalenergy/data/annual/archive/038409.pdf) (accessed July 6, 2011).

36. Bureau of Land Management, “Interior Department Issues Oil Shale Research, Development and Demonstration Leases for Public Lands in Colorado,” news release, December 15, 2006, [www.blm.gov/wo/st/en/info/newsroom/2006/december/blm\\_announces\\_waiver.html](http://www.blm.gov/wo/st/en/info/newsroom/2006/december/blm_announces_waiver.html) (accessed June 28, 2011).

37. Bureau of Land Management, “BLM Finalizes Rules That Could Add Billions of Barrels of Oil to U.S. Supply,” news release, November 17, 2008, [www.blm.gov/wo/st/en/info/newsroom/2008/november/NR\\_11\\_17\\_2008.html](http://www.blm.gov/wo/st/en/info/newsroom/2008/november/NR_11_17_2008.html) (accessed June 28, 2011).

38. Ibid.

39. Bureau of Land Management, “Energy Corridors Designated in Eleven Western States,” news release, January 14, 2009, [www.blm.gov/wo/st/en/info/newsroom/2009/january/NR\\_01\\_15\\_2009.html](http://www.blm.gov/wo/st/en/info/newsroom/2009/january/NR_01_15_2009.html) (accessed April 14, 2012).

40. Bureau of Land Management, “New Report Details Coal Resources on Federal Land in Powder River Basin,” news release, September 5, 2007, [www.blm.gov/wo/st/en/info/newsroom/2007/september/NR\\_0709\\_03.html](http://www.blm.gov/wo/st/en/info/newsroom/2007/september/NR_0709_03.html) (accessed June 28, 2011).

41. Ryan Wisner and Galen Barbose, *Renewables Portfolio Standards in the United States: A Status Report with Data Through 2007*, Lawrence Berkeley National Laboratory, 2008, <http://emp.lbl.gov/sites/all/files/REPORT%20blnl-154e-revised.pdf> (accessed July 20, 2011).

42. Ibid.

43. U.S. Department of the Interior, Bureau of Land Management, *Record of Decision: Implementation of a Wind Energy Development Program and Associated Land Use Plan Amendments* (Washington, DC, 2005), <http://windeis.anl.gov/documents/docs/WindPEISROD.pdf> (accessed July 25, 2011).

44. Bureau of Land Management, “New Policy Encourages Solar Energy Development on America’s Public Lands,” news release, October 21, 2004.

45. Bureau of Land Management, “BLM Initiates Environmental Analysis of Solar Energy Development,” news release, May 29, 2008, updated June 12, 2008, [www.blm.gov/wo/st/en/info/newsroom/2008/may\\_08/NR\\_053008.html](http://www.blm.gov/wo/st/en/info/newsroom/2008/may_08/NR_053008.html) (accessed June 28, 2011).

46. Bureau of Land Management, “BLM Launches Effort to Facilitate Renewable Energy Development on Federal Lands,” news release, June 13, 2007, [www.blm.gov/wo/st/en/info/newsroom/2007/june/NR\\_0706\\_1.html](http://www.blm.gov/wo/st/en/info/newsroom/2007/june/NR_0706_1.html) (accessed June 28, 2011).

47. Lynn Scarlett, Deputy Interior Secretary, testimony before the Subcommittee on Forests and Forest Health, Committee on Resources, U.S. House of Representatives, June 29, 2006.

48. Bureau of Land Management, “Use of the Healthy Forests Initiative Hazardous Fuels Reduction Categorical Exclusion,” Instruction Memorandum 2008-99, March 26, 2008.

49. Public Law 108-7, section 323.

50. Rebecca Watson, Assistant Secretary for Land and Minerals Management, U.S. Department of the Interior, statement before the Subcommittee on Forests and Forest Health, Resources Committee, U.S. House of Representatives, February 17, 2005, <http://naturalresources.house.gov/UploadedFiles/WatsonTestimony02.17.05.pdf>.

51. Implementation of the Healthy Forests Restoration Act, Senate Hearing 109-506, July 19, 2006, Subcommittee on Public Lands and Forests of the Committee on Energy and Natural Resources, United States Senate. Statement of Nina Rose Hatfield, Deputy Assistant Secretary, Policy, Management and Budget, Department of the Interior, <http://www.gpo.gov/fdsys/pkg/CHRG-109shrg31389/html/CHRG-109shrg31389.htm>.

52. Ibid.

53. U.S. Department of the Interior, Bureau of Land Management. “Abstract,” Final Environmental Impact Statement for the Revision of the Resource Management Plans of the Western Oregon Bureau of Land Management Salem, Eugene, Roseburg, Coos Bay, and Medford Districts, and the Klamath Falls Resource Area of the Lakeview District (Portland, OR: October 2008), [http://www.blm.gov/or/plans/wopr/final\\_eis/files/Volume\\_1/Vol\\_I\\_PreMatter.pdf](http://www.blm.gov/or/plans/wopr/final_eis/files/Volume_1/Vol_I_PreMatter.pdf).

54. U.S. Department of the Interior, “Interior Secretary Kempthorne Announces \$3 Million in Immediate Funding for Healthy Lands Initiative,” press release, April 10, 2007.

55. Bruce Babbitt, BLM National Training Center broadcast to resource advisory council members, transcript, November 2000.

56. *Federal Register*, vol. 68 (December 8, 2003), 68451.

57. Bureau of Land Management, “2006 Grazing Regulations Status,” Instruction Memorandum No. 2007-004, October 10, 2006; “Idaho District Court Order Enjoins Grazing Regulations,” Instruction Memorandum No. 2007-137, June 15, 2007; and “Idaho District Court Order and Judgment Enjoins Grazing Regulations,” Instruction Memorandum, No. 2009-109, April 20, 2009.

58. *Public Lands Council v. Babbitt*, 167 F.3d 1287, United States Court of Appeals, Tenth Circuit, February 8, 1999, <http://openjurist.org/167/f3d/1287>.

59. *Western Watersheds Project v. Kraayenbrink*, 08-35359, United States Court of Appeals, Ninth Circuit, September 1, 2010, <http://cdn.ca9.uscourts.gov/datastore/opinions/2010/09/01/08-35359.pdf>.

60. Bureau of Land Management, “Guidance on the Use of a New Categorical Exclusion for Grazing Permits/Leases,” Instruction Memorandum No. 2008-019, October 25, 2007.

61. Bureau of Land Management, “Categorical Exclusions for Fuels Reduction, Vegetation Management, and Grazing Permit Issuance,” Instruction Memorandum No. 2009-199, August 21, 2009.

62. Bureau of Land Management, “Wild Horse and Burro Removal, Adoption, Population, AML Table,” statistical records, [www.wildhorseandburro.blm.gov/statistics/PopRemAdopStats71-05.pdf](http://www.wildhorseandburro.blm.gov/statistics/PopRemAdopStats71-05.pdf) (accessed November 15, 2013).

63. Government Accountability Office, *Bureau of Land Management: Effective Long-Term Options Needed to Manage Unadoptable Wild Horses*, GAO-09-77 (Washington, DC: 2008), [www.gao.gov/assets/290/282664.pdf](http://www.gao.gov/assets/290/282664.pdf).

64. Ibid.

65. Ibid.

66. Ibid.

67. Ibid.

68. Sarah Schlanger, George MacDonell, and Signa Larralde, “Going Big: The Permian Basin Memorandum of Agreement as a Fundamental Shift in Section 106 Compliance,” Society for American Archaeology, *Journal of Archaeological Practice* (Prototype) (January 2011): 1-11.

69. Bureau of Land Management. “Table 4-3. Recreation Permits, Leases, and Passports on Public Lands Administered by the BLM by State, Fiscal Year 2010,” *Public Land Statistics 2010*, (Denver, CO), 202.

70. Government Accountability Office, *Interior’s Land Appraisal Services: Actions Needed to Improve Compliance with Appraisal Standards, Increase Efficiency, and Broaden Oversight*, GAO-06-1050 (Washington, DC: 2006), [www.gao.gov/new.items/d061050.pdf](http://www.gao.gov/new.items/d061050.pdf).

71. Bureau of Land Management, “BLM To Review Land Exchange Program,” news release, October 10, 2002, [www.blm.gov/co/st/en/BLM\\_Information/newsroom/2002/blm\\_to\\_review\\_land.html](http://www.blm.gov/co/st/en/BLM_Information/newsroom/2002/blm_to_review_land.html) (accessed May 7, 2012).

72. Appropriated funding was more than \$25 million in 2001, \$33 million in 2002, and about \$48 million each year from 2003 to 2009. By comparison, in 2000, Congress appropriated just over \$6 million.

73. Elaine Zielinski, personal communication.

74. The “Monument Resource Management Plan” covered 2 million acres in south-central Idaho. It was not a plan for a national monument, but for the area that bordered Craters of the Moon National Monument.

75. Bureau of Land Management, *A Legacy of Land Use Planning—Summary Report on the 2005 BLM Legacy Program* (Denver, CO: BLM National Science and Technology Center, October 2005) 33.

76. Ibid.

77. Bureau of Land Management, “Interior Secretary Formally Designates BLM Lands the National System of Public Lands,” news release, December 16, 2008.

The Great Kiva at Lowry Pueblo, Canyons of the Ancients National Monument in Colorado.



Organ Mountains in New Mexico.

## Chapter 4 | National Concerns Lead the Bureau in a New Direction, 2009–2012

The year 2009 ushered in a change of administration and a new approach to many public land management issues. President Barack Obama campaigned on improving energy efficiency and security while reducing carbon emissions. In the BLM, this translated into a strengthened interest in renewable energy development, the NLCS, and other conservation-oriented programs. As BLM Director Bob Abbey told the U.S. Senate during his confirmation hearing in July 2009, “Most of us want the BLM to place as much value on our nation’s wilderness and cultural resources as we do on mineral exploration and development.”<sup>21</sup>

### America Invests in Jobs

Soon after taking office, President Obama signed the American Recovery and Reinvestment Act (Recovery Act) of 2009 to jump-start an ailing

economy and preserve and create jobs. Through the Recovery Act, the BLM received over \$310 million to help put people to work on more than 650 projects across the country. Many of these projects supported the administration’s broader initiatives in areas such as renewable energy development and habitat restoration. Other projects helped alleviate numerous safety hazards and address major maintenance and construction backlogs.

Recovery Act funding underwrote 66 renewable energy related studies and inventory efforts, including the preparation of a programmatic EIS for potential solar energy development in six states. Recovery Act funding also allowed the BLM’s cadastral survey program to conduct survey and land record projects in areas with the potential for wind, solar, and geothermal energy development and for transmission line corridor planning.

Additionally, the Recovery Act funded a \$2.3 million multistate inventory of national historic trails conducted by the BLM, national trail organizations, and State Historic Preservation Offices.



Habitat restoration projects funded under the Recovery Act addressed a broad range of issues. The act funded research on the use of five different species of biological control insects to stop the spread of invasive plants. Funds also allowed for the employment of young people to help combat the introduction and spread of nonnative species through on-the-ground work in many states.



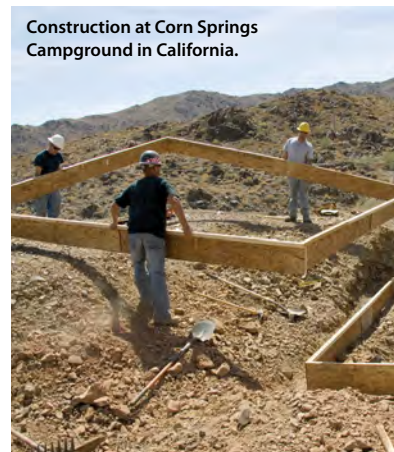
President Barack Obama.



Gyp Springs bridge on Crooked Creek Road near the Pryor Mountains in Montana.



Goat Well erosion-control structure in Arizona.



Construction at Corn Springs Campground in California.



Inventory team identifying an open mine shaft in New Mexico.

Nearly \$50 million in Recovery Act funding supported critical abandoned mine reclamation projects throughout the West. The BLM was able to improve safety around abandoned mines at 77 sites that posed physical safety hazards and were in close proximity to public places and high-use areas. According to a 2011 inventory, more than 7,700 abandoned mine sites had been remediated or had reclamation measures planned or underway. However, these sites represented only 25 percent of the estimated 31,000 sites inventoried, presenting a continuing and daunting challenge for the BLM.

The BLM used Recovery Act funding to improve or build 111,556 miles of trails, 547 miles of roads, and 16 bridges. The BLM also repaired or improved a number of public structures, often incorporating photovoltaic solar energy systems to increase energy efficiency.

### Energy and Minerals Programs Undergo Changes

In July 2008, crude oil reached a record high of \$131.40 a barrel,<sup>2</sup> sending average retail gas prices above \$4 a gallon.<sup>3</sup> With the country in the midst of a recession and jobless rates and energy prices soaring, President Obama named energy independence as a top priority and emphasized a shift toward cleaner energy sources. He supported market-based solutions (“cap and trade”) to reduce

greenhouse gas emissions and environmentally responsible development of domestic supplies of petroleum.

In October 2009, Secretary Ken Salazar pledged to reform the nation’s oil shale program “to answer fundamental questions about water use, power use, and environmental and social impacts of commercial-scale development.” He announced a second round of research, development, and demonstration leases, but with reduced acreage available for development, and he asked the inspector general to look into modifications made to existing research, development, and demonstration leases under the previous administration.<sup>4</sup> In February 2011, the Secretary announced plans to take a fresh look at the oil shale programmatic EIS and leasing rules issued under the previous administration to address the latest research and technologies, water demands in the West, and a fair return to the taxpayers.<sup>5</sup>



Interior Secretary Ken Salazar.

Secretary Salazar also set about to reform the oil and gas leasing program in the wake of a controversial auction in Utah in December 2008 and amidst a record level of protests in 2009, when 47 percent of all parcels were protested.<sup>6</sup> The Secretary launched an initiative in May 2010 to conduct more planning and NEPA analyses of areas proposed for leasing and to provide more opportunities for the public to participate in the process.<sup>7</sup>

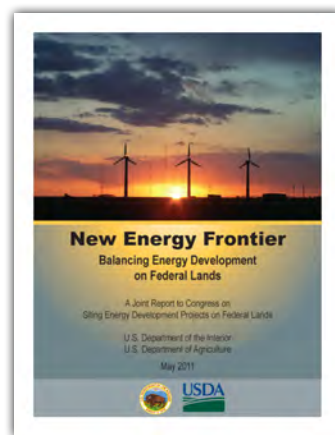
The BLM committed to putting “boots on the ground” to visit parcels as part of the screening

process to evaluate resource concerns prior to posting parcels on a lease sale. The BLM leasing approach became more methodical and deliberate, and protests dropped 35 percent in 2011 and 17 percent in 2012. The public still reviewed and challenged lease sales, but the sales were much more defensible given the added staff time invested in reviewing each parcel.

In 2011, President Obama created an interagency working group to coordinate energy development in Alaska. He directed the Department of the Interior to hold annual lease sales for the National Petroleum Reserve-Alaska to facilitate domestic energy development.<sup>8</sup> From 1999 to 2011, the BLM held seven lease sales in the National Petroleum Reserve-Alaska and various companies drilled 29 exploratory wells, finding oil in four. In 2012, the BLM completed analysis of an industry proposal for development of these resources.

### Renewable Energy Becomes a Priority

Ratcheting up the alternative energy program of the previous administration, Secretary Salazar issued a Secretarial Order in March 2009 that made the development of environmentally responsible renewable energy a priority for the Department. As part of the “New Energy Frontier,” the Department established an aggressive goal of approving projects that would produce 10,000 megawatts of renewable energy projects by the end of 2012.



With the promise of billions of dollars in funding through the Recovery Act and Department of Energy loan guarantees, the BLM announced in June 2009 that it would “fast track” its review of renewable energy projects.<sup>9</sup> The Bureau identified additional priority wind, solar, and geothermal energy projects for processing in 2010, 2011, and 2012. The BLM approved dozens of projects in

October 2010, including the first utility-scale solar energy projects on the public lands. The solar programmatic EIS, completed in 2012, designated 17 “solar energy zones” in six western states where solar development would be prioritized. The BLM sold hundreds of geothermal parcels at auction, generating millions of dollars in revenue. By the end of October 2012, the BLM had approved a total

renewable energy capacity of 12,700 megawatts, exceeding the Department’s goal. This total included more than 8,500 megawatts of capacity on public lands and an additional 4,200 megawatts of capacity from projects on private lands that required BLM approval (for infrastructure facilities on adjacent public lands).



Crescent Dunes Solar Energy Project in Nevada.

## From Alaskan Sourdough to Little Miss Sunshine | *By Linda Resseguie*

Having recently arrived from the BLM in Alaska, I was just beginning to learn the ropes in the Washington Office when Ray Brady, manager of the BLM's Energy Policy Team, invited me to a meeting with the Department of Energy (DOE). The topic: utility-scale solar energy.

The BLM's renewable energy program had dawned while I was still toiling in the land of the midnight sun. President George W. Bush had signed the Energy Policy Act in 2005, which directed the Secretary of the Interior to "seek to approve" 10,000 megawatts of nonhydropower renewable energy (wind, solar, geothermal, and biomass) projects on public lands by 2015.

By the time I sat in on my first solar energy meeting, the BLM had already completed a programmatic environmental impact statement (PEIS) on wind energy development and initiated a PEIS for geothermal energy. Although no utility-scale solar energy development had occurred on public lands, the BLM had received more than 100 applications from prospective developers.

BLM's and DOE's leaders agreed to partner on a PEIS for solar energy development—the BLM had the land and permitting expertise and the DOE had the funding. Both agencies shared similar goals—to facilitate environmentally sound solar energy development through a predictable program of land allocation and best management practices. The basic steps seemed simple: scope the issues, prepare a draft EIS, solicit and consider public comment, prepare a final EIS, address any protests, and issue a record of decision.

Each agency identified a project manager. I accepted the role for the BLM, which earned me the nickname: "Sunshine" from one of my colleagues. We started making decisions that would shape the project. The PEIS would include the six western states with some of the best solar resources in the world. DOE identified solar technologies capable of producing electricity at the utility scale.

One of our initial decisions was that the BLM would continue to process solar applications it had already received, but would not accept additional applications until the PEIS was completed. Many renewable energy advocates believed that our approach would be detrimental to the pace of solar energy development. The decision was reversed, and the BLM continued to accept new applications.

I would not have lasted long in my position without the support and encouragement of the BLM state leads who balanced the day-to-day demands of their own projects and crises with the needs of the solar PEIS. We relied heavily on the BLM state and field offices to provide geographic information system (GIS) shape files for special management areas, plan boundaries, and other state-specific details. Trying to nail down current boundaries for 89 land use plans encompassing 98 million acres of BLM-managed lands in the six-state study area proved time-consuming.

Nowhere was the staff more stretched than in California. California's 33 percent renewable portfolio standard was the most ambitious of the 26 states that had them. Consequently, the State of California took up its own planning effort, the Desert Renewable Energy Conservation Plan, which required the BLM to be an equal and active partner.

In January 2009, as the outgoing administration finalized details of their legacy programs, Interior Secretary Dirk Kempthorne issued Secretarial Order 3283 directing the establishment of Renewable Energy Coordination Offices. A few weeks later, the American Recovery and Reinvestment Act of 2009 offered financial incentives to qualifying renewable energy projects. The projects had to be underway by the end of 2010, which put intense pressure on the BLM and other approving agencies (this timeframe was eventually extended for an additional year).

On March 11, 2009, Interior Secretary Ken Salazar's first Secretarial Order established the development of renewable energy as a priority and directed the identification of renewable energy zones. In July, he announced the identification of 24 potential solar energy zones to be studied in the solar PEIS, along with a second scoping period, greatly expanding the project.

The next 2 years were a blur of meetings. We met on historic preservation and tribal consultations. We met with the U.S. Fish and Wildlife Service on how best to address Endangered Species Act consultation, implement its Eagle Rule, update the Desert Tortoise Recovery Plan, and comply with "save the sage-grouse" initiatives. We met with the National Park Service on how to negate adverse impacts to viewsheds, air quality, and night sky resources. We met with the Department of Defense. We met with county officials interested in economic development and protection of traditional uses such as livestock grazing.

We finally issued our draft document in December 2010. As we went from city to city hosting 14 public meetings, and as the 80,000 comments started to roll in, it was obvious that we had failed to meet all of the great expectations the project had engendered. Improvements and enhancements would be made through a supplement to the draft.

The timeframe was tight, and the work was done quickly. The supplement was published on October 27, 2011. Comments were accepted through January 27, 2012, which, coincidentally, just happened to be my last day with the BLM. I left completion of the final PEIS in the capable hands of Shannon Stewart. The record of decision was signed October 12, 2012, which coincidentally, was Shannon's last day.

The solar PEIS provided a remarkable opportunity to meet and work with dedicated people and to do historic, groundbreaking work for the BLM. Sunlight falling on public lands is now producing electricity for western consumers, and I, "Sunshine" have retired to a quiet corner of Pennsylvania.

## Administration Initiates a Review of Mining Claims and Fees

After focusing on the renewable industry, the Obama administration took a more measured approach to mining activities on public lands. The public raised concerns over an increasing number of mining claims filed because of rising uranium prices, the BLM's processing of a number of uranium exploration projects near Grand Canyon National Park, and the reactivation of a previously approved uranium mine. In response, Secretary Salazar announced a 2-year "time-out" on new mining claims on nearly 1 million acres of public lands in the Arizona Strip and on national forest lands near the park to allow time to evaluate the need for a withdrawal.<sup>10</sup> The ban was extended an additional 6 months in June 2011 (under a separate emergency withdrawal), and the potential for a long-term ban was criticized by the National Mining Association as an arbitrary decision that "has consequences for nearly 300,000 people in Arizona still looking for work."<sup>11</sup>

In January 2012, based on analysis and public comments, the Secretary announced a 20-year withdrawal of the nearly 1 million acres to protect the watershed from potential adverse effects of additional uranium and other hardrock mining in the area. BLM Director Bob Abbey noted that the withdrawal "preserves the ability of future decision-makers to make thoughtful decisions about managing this area of national environmental and cultural significance based on the best information available."<sup>12</sup> The withdrawal did not halt previously approved uranium mining or new projects that the BLM could approve on claims with valid existing rights; it only halted the location of new mining claims in the area. An estimated

11 mines, including the 4 already-approved mines, could proceed under the withdrawal based on valid existing rights (roughly equivalent to the pace of development that occurred in the 1980s with the development of 7 mines and the mining out and reclamation of 3 mines).

Proposals to impose royalty payments on hardrock operations and fees to pay for the cleanup of abandoned mine sites also resulted in warnings that domestic jobs would shift to overseas production. At the same time, China was tightening its grip on the production of rare earths—minerals used in the manufacturing of wind turbines, cell phones, and other devices—that are also found on some public lands. The Asian giant was also seeking to invest in coal production in the Powder River Basin, which by mid-2011 accounted for 40 percent of the coal consumed by the United States.

Though there were remarkable advances made over the decades, at the beginning of this century, the BLM energy and minerals program found itself, in many respects, in the same position it did at the time of the energy crises of the 1970s. The program was still attempting to strike a balance among economic development and environmental

protection, national priorities and local concerns, and rapidly evolving technologies and age-old traditions.

## Initiatives Address Climate Change on Public Lands

The push to increase renewable energy development on public lands was only one of a number of BLM initiatives designed to address climate change. In September 2009, Secretary Salazar issued a Secretarial order that called for changes in how the Department of the Interior managed land, water, fish, and wildlife to address climate change impacts.<sup>13</sup> The order directed Department of the Interior agencies to establish a network of climate science centers and landscape conservation cooperatives to facilitate interagency coordination on climate-change-related activities. It also directed the agencies to consider climate change in planning and decisionmaking and challenged managers to consider natural resources from a broader viewpoint, integrating a landscape perspective with local management efforts. The BLM's response focused on two interconnected initiatives: a landscape approach to land management and rapid ecoregional assessments (REAs).

The BLM had been moving toward more of a landscape approach for several decades. Through experience, the Bureau had found that traditional planning boundaries did not always facilitate addressing landscape-level challenges such as the increase in frequency and severity of wildland fires, spread of weed and insect infestations, growing demand for energy development, and continued urban and suburban growth. In 2009, the BLM began to systematically develop a national program



Coal operation in Wyoming.

Before joining the BLM's Washington Office, *Linda Resseguie* was the senior technical specialist in the BLM's Division of Conveyance Management in Alaska. Originally from Pennsylvania, she and her husband, Phil, spent 28 years in Alaska.

to better support and coordinate field efforts to deal with such large-scale, multijurisdictional issues.

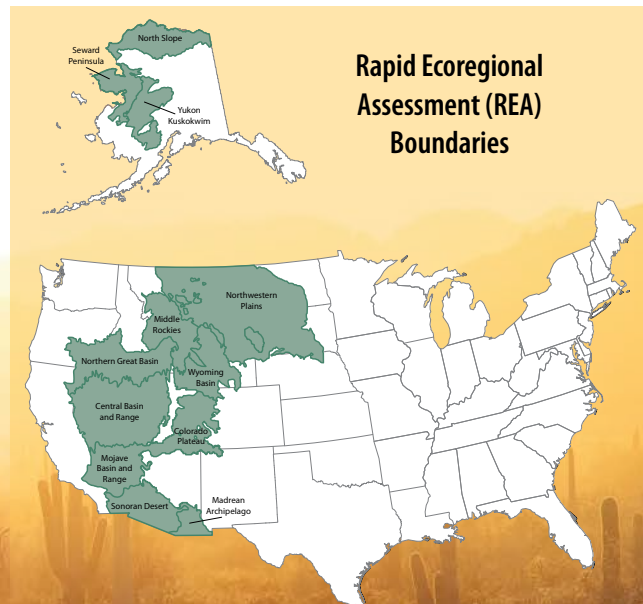
The first step in the BLM's landscape approach was to initiate a series of REAs to better understand conditions across landscapes and to inform future management actions. REAs involve collecting existing information at a landscape scale to assess current ecological conditions and to predict how landscape-scale changes may affect those conditions. The BLM launched ten of these assessments, covering 600 million acres of public and nonpublic lands, in 2010 and 2011, with a plan to complete them in about 18 months.

The information from the REAs, along with input from BLM field offices, other agencies, landowners, conservationists, industry representatives, and other stakeholders, was then used to develop landscape-level management strategies or

ecosystem direction. Through the BLM's established planning and environmental impact assessment processes, the public lands that would be most appropriate for resource conservation, restoration, and development would then be determined.

REAs not only help inform the BLM, they also provide systematic baseline information to a variety of other agencies, entities, and the public, including the landscape conservation cooperatives and their associated regional climate science centers. "REAs help the BLM and its partners predict how resource conditions may change over time and develop shared strategies to address these changes," said BLM strategic planner Kit Muller. "They also provide resource managers a foundation for adaptive management, enabling them to adjust BLM management priorities and approaches in response to new information."<sup>14</sup>

The BLM also studied ways and places to sequester atmospheric carbon dioxide, theorized to be one of the major contributors to global climate change. The BLM's soil, water, and air program studied the ability of soils to sequester carbon dioxide. In 2009, the program gained additional responsibilities for quantifying and reporting greenhouse gas emissions resulting from the BLM's operations under an Executive order declaring the reduction of these emissions a governmentwide priority.<sup>15</sup> The program provided critical support for a Department of the Interior strategy begun in 2010 to respond to the impacts of climate change, which Secretary Salazar termed one of the "signature issues of the 21st century."<sup>16</sup>



Sonoran Desert in Arizona.

## The BLM Takes a Landscape Approach | By Kit Muller and Barry Rose

In the early 1980s, western forests and rangelands were beset by widespread wildfires and weed and insect infestations that could no longer be managed effectively by local offices alone or through traditional management practices. Over the next three decades, scientists, land managers, and stakeholders worked together to understand the wide-ranging impacts of these events, develop shared strategies, and implement collaborative management efforts. Through these collective experiences and partnerships, the BLM developed a landscape approach to support balanced stewardship of the diverse natural resources of the public lands and to address emerging challenges of the 21st century, such as increased energy development, urban growth, and the effects of climate change.

Landscapes are large, connected regions having similar environmental characteristics (for example, the Sonoran Desert or the Colorado Plateau). They span administrative boundaries and typically encompass areas much larger than those managed by individual BLM field offices. A landscape approach involves looking across these larger areas to more fully recognize natural resource conditions and trends, natural and human influences, and opportunities for resource conservation, restoration, and development. This approach helps identify important ecological values and patterns of environmental change that may not be evident when managing smaller, local land areas.

There are five components to BLM's landscape approach. The first component is a rapid ecoregional assessment (REA), which synthesizes the best available ecological information for all lands within an ecoregion. The BLM initiated seven REAs in 2010 and three additional REAs in 2011, covering a total of 600 million acres of public and other lands. The information from the REAs, along with input from partner agencies, stakeholders, and American Indian tribes, is used to identify priority areas for conservation and development and to determine ecological direction, which is the second component of this approach.

The third component of BLM's landscape approach is field implementation. BLM's field offices maintain their central role in managing public lands by preparing land use plans, authorizing land uses, monitoring, and working with partners and stakeholders to develop and implement local management strategies. The broader perspective provided through a landscape approach helps focus and integrate these local management efforts. Monitoring for adaptive management is the fourth component; it involves standardizing the collection and retrieval of data so that it can be easily accessed, compared, and shared. The final component is science integration, which more closely links research and available science information with public land management issues, planning, and decisionmaking.

Partnerships are critical to the success of this approach. At the local level, partnerships develop shared management strategies, foster public awareness and support, and harness the volunteer assistance needed for effective implementation. Partnerships are equally vital at the broader, landscape level, where the diversity of land ownership (federal, tribal, state, county, municipal, and private) can complicate effective responses to widespread environmental issues, including climate change impacts.

Recognizing the importance of partnerships at the local and landscape levels, the Department of the Interior has begun a complementary effort to develop a national network of landscape conservation cooperatives (LCCs). These LCCs are management/science partnerships composed of private, state, tribal, and federal representatives working toward a shared vision of landscape health and sustainability. The LCCs provide science information and tools needed for developing resource management strategies and promote coordinated partnership actions at the landscape and local levels.

Developing and putting an effective landscape approach in place is vital to the BLM's goal to expand, strengthen, and integrate best practices and collective efforts to sustain the health and productivity of America's public lands.



Vermillion Basin, part of the Colorado Plateau landscape in Colorado.

*Kit Muller* has worked for the BLM for more than 30 years, primarily in the Washington Office. He coordinates the BLM's efforts to understand and address landscape-scale changes in the American West.

*Barry Rose* worked for the BLM for 31 years, retiring in 2011 as a senior legislative affairs specialist in Washington, DC, where he focused on climate change and renewable energy issues. Barry was also a public affairs specialist in Boise and the Idaho State Office and in Vale, Oregon.

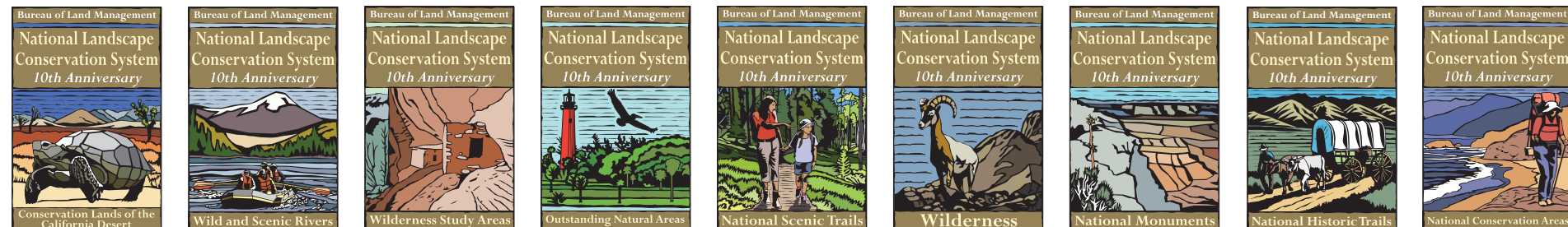
## The National Landscape Conservation System Becomes Permanent

Although established administratively by Secretary Babbitt in 2000, the NLCS lacked congressional designation, and thus, any subsequent administration could dismantle it. The BLM needed congressional action to make the NLCS permanent.

### Congress Passes the Omnibus Public Land Management Act of 2009

In 2007, the House and Senate introduced, but failed to pass, the National Landscape Conservation System Act. They reintroduced the act and passed it in 2009. On March 30, President Obama signed it into law as part of the Omnibus Public Land Management Act of 2009 (Public Lands Act).

President Obama called this act “one of the most important pieces of natural resource legislation in decades.”<sup>17</sup> In addition to codifying the NLCS and its mission to “conserve, protect, and restore nationally significant landscapes,” the law added significantly to the NLCS’s management portfolio: nearly 929,000 acres of wilderness areas, one national monument, four national conservation areas, 362 miles of wild and scenic rivers, and 40 miles of national scenic trails, for a total of 1.2 million acres of new designations.<sup>18</sup> The bill also contained new wilderness and conservation designations for the National Park Service and U.S. Forest Service.



NLCS Summary Table as of December 5, 2012

Category*	Unit Type	Number	BLM Acres	BLM Miles
National Monuments and National Conservation Areas	National Monuments	17	4,833,835	
	National Conservation Areas	16	3,660,017	
	Similar Designations	5	436,164	
Wilderness	Wilderness Areas	221	8,804,972	
	Wilderness Study Areas	544	12,833,877	
Wild and Scenic Rivers		69	1,001,303	2,423
National Scenic and Historic Trails	National Historic Trails	13		5,078
	National Scenic Trails	5		683
<b>Totals</b>		<b>890</b>	<b>About 31 million</b> (some units overlap)	<b>8,184</b>

\*The BLM is evaluating how to incorporate the California Desert Conservation Area (CDCA) into the NLCS in terms of management. The BLM-administered portion of the CDCA (including wilderness areas) totals 10,772,600 acres and includes some multiple use areas not traditionally incorporated in the NLCS.

By the end of 2013, the NLCS included 890 specially designated areas encompassing about 31 million acres as shown in the table above.

### Tenth Anniversary Events Result in a 15-Year Strategy

The year 2010 marked the 10th anniversary of the NLCS. The BLM, working with local communities, held some 90 events—primarily in the West—to celebrate a decade’s worth of accomplishments and to forge a strategy for the future.

These events included a conference held in April at the University of Colorado at Boulder and sponsored by the BLM and the Center of the American West, which brought together prominent writers, artists, and leaders to share their perspectives on the NLCS and its vision for the future. Participants included former Interior Secretary Bruce Babbitt, writers Craig Childs and Amy Irvine, and historian Patricia Nelson Limerick, who helped organize the forum. These discussions led to a larger symposium held in Las Vegas, Nevada, in November. Here, more than 300 BLM

## Owyhee Canyonlands: A Lesson in Perseverance | By Robin Fehlau

The remote desert canyonlands of southwest Idaho have long been a political battlefield. For years, environmentalists, ranchers, and recreationists disagreed on how this fragile beautiful landscape should be managed and preserved. This animosity came to a head in the late 1990s when then Interior Secretary Bruce Babbitt announced the area was being considered for designation as a national monument. The monument proposal was not enacted, but it did spur an unlikely, and initially uncomfortable, group of people to come together.

The group included representatives from The Wilderness Society and Sierra Club, the off-highway vehicle (OHV) community, the Idaho Outfitters and Guides Association, the Shoshone-Paiute Tribe, as well as local landowners, ranchers, and Owyhee County elected officials. They had little to no trust in each other at first, but there was one thing on which all parties could agree: the status quo in the Owyhees wasn’t working, and if something wasn’t done soon, the area would be irreparably damaged.

Growth in the Boise area had resulted in increased visitation to Owyhee County, and unfortunately, many of the new visitors did not understand the fragile nature of the ecosystem. A proliferation of roads and trails resulted in increased erosion. The Native American community began seeing an increase in vandalism of sacred sites, and private property owners were angered by numerous trespasses and trash left on their lands. These problems were a concern to all of the “Owyhee group,” and with this one point of agreement that something needed to be done, they started talking.

The process of finding common ground was slow. There was meeting after meeting. Over time, and over meals, members of the group began to gain some trust in each other. Repeated field trips to the Owyhees helped build and increase that trust. Each side had the chance to have experts speak about the various issues of concern,

and group members found it easier to be frank with each other when they were in the field. Being in the place they all cared about, they began to really listen to each other. Ranchers explained their concerns about range quality, water, and harassment of their animals, while conservationists discussed fears about noxious weeds, reduced sage-grouse populations, and the effects of cross-country motorized travel.

Once a level of trust was established, the group began working on the details of what would eventually become a proposal for how the area should be managed. They called it the Owyhee Initiative. The initiative addressed some of the most sensitive issues in western politics, including cattle grazing, water rights, endangered species, wilderness, wild and scenic rivers, and off-highway vehicle use.

The Owyhee group found a champion in Senator Mike Crapo, who pledged to create legislation for the Owyhees if the group reached an agreement. Senator Crapo believed that the collaborative approach of the Owyhee group could result in legislation that was broadly supported. He also saw it as a model for other groups.

After 8 years of meetings and an amazing amount of give and take, the group did reach agreement, and Senator Crapo did introduce legislation—the Owyhee Public Lands Management Act. While the working group was pleased with the final bill, all felt that it wasn’t the document they would have written had it been up to them individually. While no group got everything it wanted, all groups got something, and they managed to get beyond an unending lineup of litigation.

In March 2009, the Owyhee Public Lands Management Act passed as part of an omnibus lands package. The legislation designated 6 wilderness areas (517,000 acres) and 16 wild and scenic rivers (more than 300 miles) and started a new era for the BLM in southwest Idaho.



Jarbidge Wild and Scenic River, Owyhee Canyonlands in Idaho.

Robin Fehlau has been the recreation, wilderness, and wild and scenic river lead for the BLM Idaho State Office since 2008. Prior to that, she was the travel management lead at the Utah State Office and an outdoor recreation planner in Utah.



employees and representatives from state and local governments, nongovernmental organizations, universities, and other interests gathered to share their ideas about the future of the NLCS.

The result was a 15-year strategy outlining major themes for the NLCS, including emphasizing conservation and science; using a community-based approach to land management and recreational visitor services; raising public awareness through outreach, education, and partnerships; and fully integrating the NLCS into the BLM's organization and mission.<sup>19</sup> The strategy provided an overarching vision for managing the

NLCS that encompasses its conservation mandate established through FLPMA and the Public Lands Act of 2009.

Anniversary events also included a national science symposium held in May 2010. The BLM and the New Mexico Museum of Natural History and Science in Albuquerque, New Mexico, sponsored the symposium, which brought together 130 presenters who described their research on NLCS lands.

Coinciding with the 10th anniversary of the NLCS, Secretary Salazar issued a Secretarial order

on November 15, 2010, that elevated the NLCS to the directorate level. The BLM established the National Landscape Conservation System and Community Partnerships directorate and added an assistant director position to oversee it. The Secretarial order recognized conservation as being equally as important as other land management objectives. It emphasized the integration of science into management decisions and the importance of collaborating with the public and obtaining diverse viewpoints when considering management options. It also required the BLM to manage NLCS units to conserve the values that provided the basis for their designation.<sup>20</sup>



Ojito Wilderness in New Mexico.

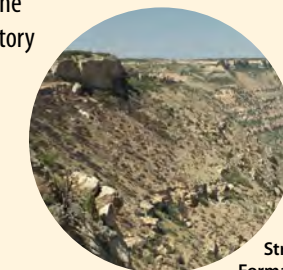
### Celebrating Science in the National Landscape Conservation System | *By Marietta Eaton*

Areas within the BLM's National Landscape Conservation System contain important scientific values, and many were designated principally to conserve these values.

The BLM's first national monument was one such designation. In 1996, Grand Staircase-Escalante National Monument was dedicated specifically for its scientific and historic values. The Presidential proclamation outlined what seemed to some at the time to be hyperbole. The sheer scope of geological, paleontological, biological, historical, and archaeological resources seemed overstated until the BLM and the Utah State Advisory Council for Science and Technology sponsored the first "Learning from the Land" science symposium in 1997 at Southern Utah University in Cedar City. This event revealed the potential extent and eclectic nature of the scientific riches within the monument's expansive 1.86 million acres. The symposium covered topics ranging from Anasazi history to the geocology of hanging gardens and included papers on bighorn sheep, bats, bees, grasshoppers, and plants in the monument as well as the oil and gas potential there.

To expand on what was learned, a generous science budget allowed for research on the paleontology and archaeology of the Kaiparowits Plateau and the monument's hydrology, a complete level 3 soil survey, an inventory of bees (over 600 species, 22 completely new to science) and other insects, and the collection of over 150 oral histories. Partners included the Utah Museum of Natural History, Northern Arizona University, Weber State University, Natural Resources Conservation Service, U.S. Department of Agriculture, U.S. Geological Survey, Brigham Young University, University of Utah, and Utah Division of State History.

More focused research included studies on the coloration of Navajo Sandstone and the origin of iron concretions, called Moki marbles, and their relationship to



Straight Cliffs Formation in the Kaiparowits Plateau in Utah.



Fort Stanton-Snowy River National Conservation Area in New Mexico.

understanding the geology of Mars (University of Utah); northern spotted owl habitat studies (Montana State University); and Paiute and Hopi ethnographies. Rich and rewarding partnerships grew into collaborations that have lasted a decade or more.

The BLM held a second science symposium in 2006 to celebrate a decade of science in the monument, and 4 years later, a national science symposium was held in celebration of the 10th anniversary of the NLCS. "A Decade of Discovery," a symposium celebrating 10 years of science in the NLCS, took place May 24–28, 2010, in Albuquerque, New Mexico. Sponsored by the BLM and the New Mexico Museum of Natural History and Science, the event featured more than 130 presenters highlighting significant research on NLCS lands nationwide.

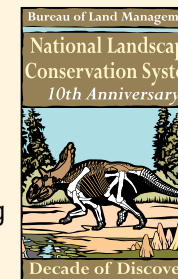
An increasing number of scientists and educators use NLCS lands as outdoor laboratories to study biology, geology, archaeology, paleontology, and ecology. The Canyons of the Ancients National Monument in Colorado, for instance, contains the highest density of archaeological sites in the nation, including kivas, cliff dwellings, rock art, and artifacts. For more than a century, archaeologists have used the area's cultural resources to learn about the lives and traditions of the earliest inhabitants of the West—a history that extends more than 10,000 years into the past. Significantly, the BLM protects these resources while also managing productive oil and gas leases that existed before the monument's designation.

In New Mexico, microbiologists and paleoclimatologists were drawn to Fort Stanton–Snowy River Cave National Conservation Area to study what was considered to be the largest contiguous calcite formation in America, discovered in 2001. Minerals throughout the cave system provide unprecedented clues about the history of climate change in the West while its bacteria, living in the cave's extreme and sunless environment, offer potential new medicines and other modern uses.

The BLM issued the "NLCS Science Strategy" in 2007 to encourage and support the growing academic interest in NLCS science resources. Its major goals were to promote scientific study in the NLCS, apply a standard process for permitting and reporting research, and ensure that new information is communicated both internally and externally. The strategy also sought to apply information gained from research on NLCS units to other BLM public lands.

According to the "NLCS Science Summary Report" of 2008, nearly 300 science projects were being conducted in national monuments, national conservation areas, and other similarly designated areas as of 2007. Most were wildlife projects (96), followed by archaeology and history projects (44) and botany projects (42). Collectively, they represented 20 disciplines.

The result of all these efforts is a culture of science at the core of the NLCS and a passion for knowing the details that led to the designations of various units. This knowledge has been used for making decisions and for interpretation and educational programs, and it is shared in various venues with the public whose lands the BLM is honored to manage.



*Marietta Eaton* is the manager of the BLM's Canyons of the Ancients National Monument and Anasazi Heritage Center in Colorado. She previously served as the science coordinator for the NLCS in Washington DC. She began her BLM career at Grand Staircase-Escalante National Monument, where she served in several capacities over a dozen years, including science program administrator and assistant monument manager. Prior to working for the BLM, Marietta was an archaeologist for 16 years with the USDA Forest Service.

## The Secretary Addresses Transparency

Secretary Salazar named treasured landscapes a top priority in 2009 and vowed to protect and enhance Interior's trove of specially designated lands, including the BLM's NLCS. "As custodians of our Nation's natural, cultural, and historic resources, we have a duty to protect the places that Americans love, and to help all Americans connect with their land and heritage," he stated.<sup>21</sup>

Some people raised concerns that the Obama administration's conservation agenda, with its pro-environment focus, would restrict uses of NLCS lands. Others worried that the administration would add more lands to the system without involving the public. Since the designation of the BLM's first national monument under the Clinton administration, transparency and public support, particularly at the local level, had long been driving concerns.

In 2010, the Congressional Western Caucus cited an internal Department of the Interior document that listed preliminary, prospective national monument designations recommended for "further evaluations" and "assessment of public and Congressional support."<sup>22</sup> The group

expressed concern that stakeholders, local officials, and community residents would not have sufficient opportunity to provide input if designations of the areas described in the memo were proposed. Potential economic impacts of any new designations were also of concern. Consequently, Congress introduced several bills to limit the President's ability to designate new national monuments, but the bills failed without bipartisan support. Secretary Salazar reassured Congress that the memo was simply responding to his interest in hearing his employees' ideas and that the Department would work with Congress and seek others' input and local public support as part of developing any initiatives.<sup>23</sup>

In November 2011, Secretary Salazar issued a report highlighting 18 backcountry areas in nine states where there was significant local support for Congress to protect them as national conservation areas or wilderness.<sup>24</sup> Input from Congress, state and county officials, tribes, and other interested parties provided the basis for the report. The Secretary and Deputy Interior Secretary David Hayes expressed hope that it could serve as a foundation for a bipartisan public lands bill to conserve lands for recreation, protection, and enjoyment.<sup>25</sup>



Sleeping Giant Wilderness Study Area in Montana.

## The Bureau Develops Additional Policy on Wilderness

The change of administration also resulted in a renewed focus on the wilderness program, and the BLM began to address the lack of adequate policy. In December 2010, the Department of the Interior announced its new policy that the BLM would place a high priority on protecting lands with wilderness characteristics (that were not already protected as wilderness or wilderness study areas), designating them as "Wild Lands."<sup>26</sup> In 2011, however, Congress directed the BLM not to implement the policy.<sup>27</sup> Nonetheless, FLPMA requires the BLM to maintain an up-to-date inventory of lands with wilderness characteristics. The BLM released policy that complied with congressional direction related to lands with wilderness characteristics and the underlying requirements of FLPMA in July 2011.<sup>28</sup>

Wilderness policy was not the only policy under development within the NLCS. In September 2009, the BLM issued program policy that included a requirement for NLCS land use plans to protect the values that provided the basis for the unit's designation, clarifying that these values took precedence over other uses in the event of a conflict among them.<sup>29</sup> The BLM also provided policy for interim management of new NLCS units, requiring managers to conduct a baseline inventory of the resources identified in the designating legislation or proclamation.<sup>30</sup> These were temporary measures. In 2011 and 2012, the BLM focused on developing long-term national policy to support national monuments and national conservation areas, wild and scenic rivers, and national scenic and historic trails, in addition to wilderness and wilderness study areas. By the fall of 2012, the BLM had completed 10 new and revised policy manuals.

## Celebrating the Legacy and Centennial of the Iditarod National Historic Trail | By Kevin Keeler

The Iditarod National Historic Trail, America's last great gold rush trail, celebrated its centennial from 2008 to 2012. The 4-year celebration was a commemoration of a vibrant hundred years for the 2,300-mile system of winter trails. It marked the efforts to open the famous overland route from Seward to Nome, from the first scouting trip in 1908 to the crews that worked in the bitter cold to complete the trail in 1910 and 1911 to the thousands of gold seekers who hiked or mushed the trail to the Iditarod gold fields once it was complete. The celebration also marked Alaska becoming a U.S. Territory in 1912 after the gold rush population boom, the trail's designation as a National Historic Trail in 1978, and its contemporary importance for intervillage transportation, access to subsistence resources, and wild land recreation.

The Iditarod National Historic Trail is unique in Alaskan and American history. Once one of the main lifelines between frontier Alaskan boom towns, the ways of commerce and settlement have largely bypassed the trail, leaving it to cross a vast boreal landscape largely abandoned to nature's ways. Though there are "high and dry" sections of the trail that provide access to some of the historic route during the summer (mainly in the mountains of south-central Alaska), much of the trail is bypassed due

to miles of wet tundra, chilly rivers, and voracious mosquitoes. But when the tundra and rivers freeze and snow blankets the land, dog mushers, skiers, snow machiners, hikers, and even mountain bikers take to the trail.

Rural Alaskans use the trail as a snowmobile highway to reach other communities near and far for shopping, visiting, or attending church and civic or sports events. And every February and March, professional and recreational racers put their minds, muscles, and machines to work in epic long-distance winter races along the trail, linking Alaska's largest and smallest communities.

Now, 100 years after its heyday, some variation of the entire Iditarod National Historic Trail is once again open between Seward and Nome. Most of the historic trail is located on public lands or easements managed by the State of Alaska or federal agencies. No one entity manages the entire historic trail—trail management is left up to land managers but is guided by a cooperative, interagency plan coordinated by the BLM. The BLM works with other agencies and dozens of volunteer groups to protect and improve the trail with partnership projects ranging from dedicating easements to building safety cabins and brushing and marking the trail.



Mushing enthusiasts watching the Iditarod Sled Dog Race.

*Kevin Keeler*, the Iditarod Historic Trail administrator at the Anchorage Field Office, has been with the BLM since 2004. Before coming to the BLM, he worked for 20 years on Alaskan public lands and community-based trail projects.

## The President Proclaims a National Monument on Earth Day 2012

On April 20, 2012, President Obama designated public lands in Fort Ord, California, as a national monument under the Antiquities Act. The new monument, a former military base, had broad public support, as it honored veterans and enhanced recreation opportunities in the central California coastal area. The BLM managed about 7,200 acres and the Army planned to transfer an additional 7,400 acres to comprise the monument. This was the BLM's 17th national monument and its first in more than 11 years.



Fort Ord National Monument in California.

## Recreation Demands Continue to Grow

By 2010, the BLM managed almost eight times as many recreation sites as it did 25 years before. BLM public lands were no longer the recreation community's best-kept secret in the West. While the public once considered BLM lands to be the lands nobody wanted, in one generation, they had become the lands everyone wanted.



Family hiking at Kasha-Katuwe Tent Rocks National Monument in New Mexico.

## The Bureau Reaches Out to Veterans

Starting in 2006, the BLM waived recreation-related fees for veterans, military personnel, and their families for Veterans Day and Veterans Day weekends. In 2012, the Bureau expanded its outreach to veterans, and along with other agencies, began offering free annual America the Beautiful passes to encourage military veterans and their families to explore their public lands. The passes provide free access to national parks, wildlife refuges, national forests, BLM-managed sites, and other federal public lands. The BLM also enhanced access to public lands for disabled veterans through agreements with such organizations as Disabled Sports USA, a nonprofit organization started in 1967 by disabled veterans of the Vietnam War. Under the memorandum of understanding, the BLM and Disabled Sports USA planned to pursue projects and activities on public lands appropriate for persons with disabilities and encourage wounded and disabled veterans to participate in the BLM's planning process.



Veterans rafting Westwater Canyon in Utah.

## The Administration Launches New Outdoor Initiatives

In 2010, President Obama launched the America's Great Outdoors initiative through a series of listening sessions with top administration officials and the public to develop a "conservation and recreation agenda that makes sense for the 21st century."<sup>31</sup> The resulting plan called for accessible parks or green spaces, youth conservation corps programs, and adequate funding of the Land and Water Conservation Fund.

First Lady Michelle Obama also launched the Let's Move Outside initiative to encourage kids to get outside to experience nature and be physically active. This initiative complemented the BLM's Take It Outside! program, launched in 2008 to promote children's outdoor activities on the public lands. Between 2008 and 2011, the BLM awarded more than \$600,000 through incentive funding to help its field offices and partners develop projects and programs to get children and families to "Take It Outside!" The BLM's investment leveraged more than \$3.6 million dollars in partner cash and in-kind donations, representing an important investment in future generations.



Environmental camp in California.

## America's Backyard: The Growth of Outdoor Recreation on BLM Lands | By Bob Ratcliffe and David O. Howell

Just a few decades ago, BLM public lands were truly the lands that no one knew—few people were aware of what they offered and they were only occasionally visited by the recreating public. Today BLM lands are widely recognized as some of the most outstanding and unique places for outdoor recreation and special events. BLM lands have become the popular backyard for many in the fast-growing West. Between 1990 and 2010, the nation's population grew by about 24 percent. Eleven of the 20 states with the fastest population growth were in the West where BLM public lands abound. As a result, the number of visitors to BLM public lands has doubled in the past two decades—to nearly 60 million visitors in 2011.

While population and economic shifts resulted in considerable changes in the West, advances in technology, more than any other factor, changed the face of BLM recreation forever. Over the past 20 years, technology has given the nation unprecedented flexibility for people to choose where and how they live—and when, where, and how they play. Consider that during this period, society saw the rise of the World Wide Web and a corresponding growth in flexible work schedules and workplaces, allowing people and businesses to work anywhere. Many people chose the high quality of life and nearby outdoor recreation amenities offered by hundreds of communities across the West. BLM lands and the recreation that occurs on them are now critical to the health of many local and regional economies.

From GORE-TEX to geospatial technologies, mountain bikes to rock-climbing gear, whitewater rafts and kayaks to off-highway vehicles and ultralight aircraft—technology created a whole new generation of outdoor recreation activities. BLM lands offer the perfect places and settings for a wide range of new and popular pursuits and also offer millions of acres of wide-open spaces, mountains, canyons, and rivers for more traditional recreation such as hunting, fishing, hiking, and camping.

The BLM offers unique and incredible landforms, vast and diverse geographic features, and a management mission that can accommodate many uses and events that cannot occur in other places or on other public lands. The BLM's Black Rock

Desert Playa is home to the now iconic cultural event, Burning Man, a weeklong festival for art and self-expression enjoyed by 50,000 people each year. The spectacular Imperial Sand Dunes—some of the largest sand dunes in the world—are visited by up to a quarter of a million people each winter holiday weekend for dune riding and thrill seeking. The BLM is also home for tens of thousands of "snowbirds" each winter who enjoy public lands as an affordable retirement living alternative. BLM is *the* place for a new generation of recreation activities such as rock crawling, river sledging, dune buggy riding, dogsledding, snowmobiling, mountain biking, rocket launching, land sailing, canyoneering, geocaching, speed-trial racing, and many, many more.

The BLM also offers millions of acres of protected areas and wilderness for more self-reliant and human-powered activities. The Bureau manages thousands of miles of long-distance national scenic, historic, and recreation trails, scenic byways, and wild and scenic rivers that have increased in popularity and visitation. More than any other federal land management agency, the BLM allows visitors the freedom to explore and discover, on their own, incredible places such as world-class cultural sites and ancient ruins, ghost towns, historic ranches, lighthouses, high alpine mountains and glaciers, vast desert landscapes, narrow slot canyons, old-growth forests, and remote ocean coasts. The BLM issues special recreation permits for events, such as the Iditarod Trail Sled Dog Race, Oregon Trail wagon train, and Pony Express reenactments, that celebrate cultural heritage through recreation and can only be found on BLM-administered lands. Our unique lands and mission provide a greater diversity of outdoor recreation opportunities than any other public land agency.

The BLM now faces a world very different than the one it faced in 1976 when the Federal Land Policy and Management Act was passed. While recreation was recognized as one of the key resource uses of the public lands, few could have imagined then the depth, breadth, and diversity of recreation occurring today on BLM's public lands.



Rock crawlers at the Wolford Mountain Recreation Area in Colorado.

**Bob Ratcliffe** is the former deputy assistant director for renewable resources and planning in the BLM's Washington Office. Prior to that, he was the division chief and deputy division chief for recreation and visitor services. Bob has also worked with the BLM in Colorado, Idaho, and Oregon in the recreation, wilderness, watershed, and public affairs programs, and as a field office manager. He currently works for the National Park Service.

**David O. Howell** was the BLM's deputy division chief for recreation and visitor services and is now the associate district manager in Salem, Oregon. He has also been a program analyst in the Washington Office Division of Budget and a public affairs specialist and resource coordinator in the Idaho Falls District.

## Partners, Youth, and Volunteers Pitch In

The BLM was dependent upon an array of outside groups and individuals to enhance its management of the public lands and implemented several programs to support such efforts. In 2008, the BLM added the volunteer, education, partnerships, interpretation, and tourism programs under its new Division of Education, Interpretation, and Partnerships.<sup>32</sup> The BLM added the youth program in 2009, and in 2010, these programs became part of the National Landscape Conservation System and Community Partnerships Directorate.

At the local level, community-based partnerships among the BLM and volunteer organizations and friends groups grew and thrived, particularly within the NLCS, where they provided vital and far-reaching assistance to the BLM. In fact, cooperation and partnerships became a more integrated and sought-after way of managing public lands across the BLM. Presidential directives and initiatives reinforced this approach, including

President George W. Bush's 2004 Executive Order 13352, "Facilitation of Cooperative Conservation," and President Obama's America's Great Outdoors initiative, with its emphasis on meaningful community engagement.

The BLM began acknowledging exemplary partnerships through its annual Public Lands Partnership Excellence and Director's Excellence through Stewardship Awards. BLM-led partnerships also received Secretarial Partners in Conservation Awards. In 2010, the agency hired a national partnership program lead to strengthen support for partnerships across the Bureau.

The BLM's efforts to engage youth in land management received a major boost in 2009 when Secretary Salazar established the Office of Youth in the Great Outdoors. The BLM designated a national lead for youth programs, and in 2010, the program received increased funding. The BLM benefitted from the youth "listening sessions" of the America's Great Outdoors initiative and hired

some 4,000 young people in both 2010 and 2011, thanks to an increased emphasis on student hiring programs and expanded partnerships with youth corps organizations. In addition to hiring youth, the BLM's youth program also focused on educating and engaging youth in the outdoors.

For decades, the BLM relied on volunteers of all ages to assist in the work of the Bureau. As budgets tightened, volunteer work became even more essential in helping the BLM perform on-the-ground work such as trail building and repair, campground maintenance, and invasive species removal. Many popular BLM campgrounds relied on volunteer campground hosts to keep them open.

Although the recreation program depended most heavily on their work, volunteers also helped in almost every BLM program area. For example, volunteers documented and helped protect priceless rock art sites, assisted with wild horse and burro adoptions, rebuilt historic cabins, collected native seeds, planted trees, removed invasive species,

installed and repaired fencing, removed trash, and located abandoned mines.

The volunteer program yielded immense benefits beyond the work accomplished, however. Volunteer programs encouraged people to become actively involved in managing their public lands. This involvement helped build a sense of ownership and stewardship among those who live near BLM-managed lands. It also encouraged citizens to get outside and enjoy their public lands. In 2012, National Public Lands Day attracted more than 10,000 BLM volunteers who spent a day caring for their small piece of the vast public domain. These volunteers worked on 218 projects at 137 sites hosted by 89 field offices in 16 states.<sup>33</sup>

Since 2001, volunteers contributed more than 1 million hours of work annually, equal to about 600 full-time personnel. In 2012 alone, the value of the work performed by more than 30,000 BLM volunteers and hosted workers (those sponsored financially by outside organizations) was more than \$25 million.<sup>34</sup>

## Large-Scale Efforts Require a Strategic Planning Approach

The BLM embraced the landscape approach to address a multitude of issues in addition to the effects of climate change, including a number of rapid changes occurring throughout the West and serious, wide-ranging resource issues that crossed planning area boundaries. The BLM needed a process that would help tackle issues at natural scales, and often, these issues were geographically larger than the BLM.

As of 2012, more than 60 million people lived within 25 miles of public lands, resulting in sharply increased demands for use of these lands by competing interests. Public perceptions on proper management of public lands had become increasingly diverse and contentious, leading to an

increase in legal challenges over use of the lands. The BLM needed a more strategic approach to planning to help produce more defensible plans in light of the increasing frequency of protests and litigation.

This strategic approach often involved large-scale planning efforts, such as those dealing with "solar energy zones" and greater sage-grouse conservation. To BLM managers, this was the future of land management—addressing issues at larger scales to fully account for the "big picture." The BLM still made most decisions through the planning process at the field office level, but not without considering all new information available at a landscape scale.

## Wildlife Habitat Conservation Stretches Across Landscapes

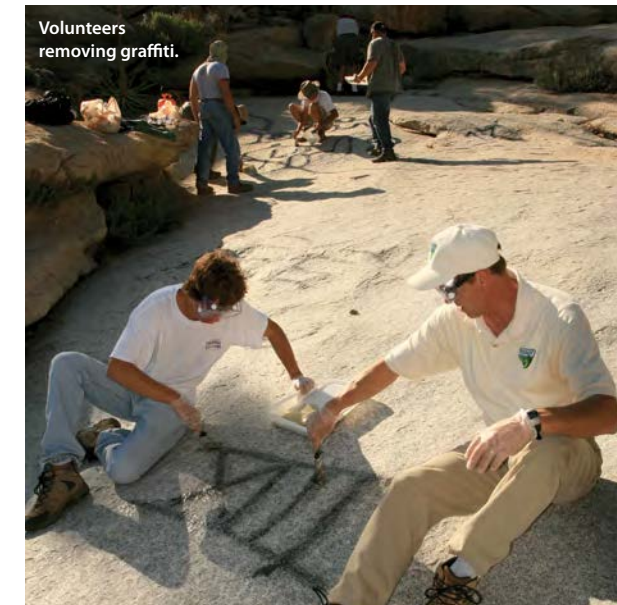
Through the decade, the BLM focused on wildlife habitat management efforts at the landscape scale while looking for ways to better measure progress in habitat conservation. In 2010, the BLM hosted a series of workshops, facilitated by scientists from the H. John Heinz III Center for Science, Economics and the Environment and the University of Nevada, Reno, which focused attention on measuring the results of wildlife conservation activities. In 2011, BLM field staffs worked with the Western Governors' Association and western states to collect and share data to develop the Crucial Habitat Assessment Tool. This tool identified wildlife corridors and crucial habitat on a state and regional scale to help managers make land use decisions.



Volunteers building an enclosure in Oregon.



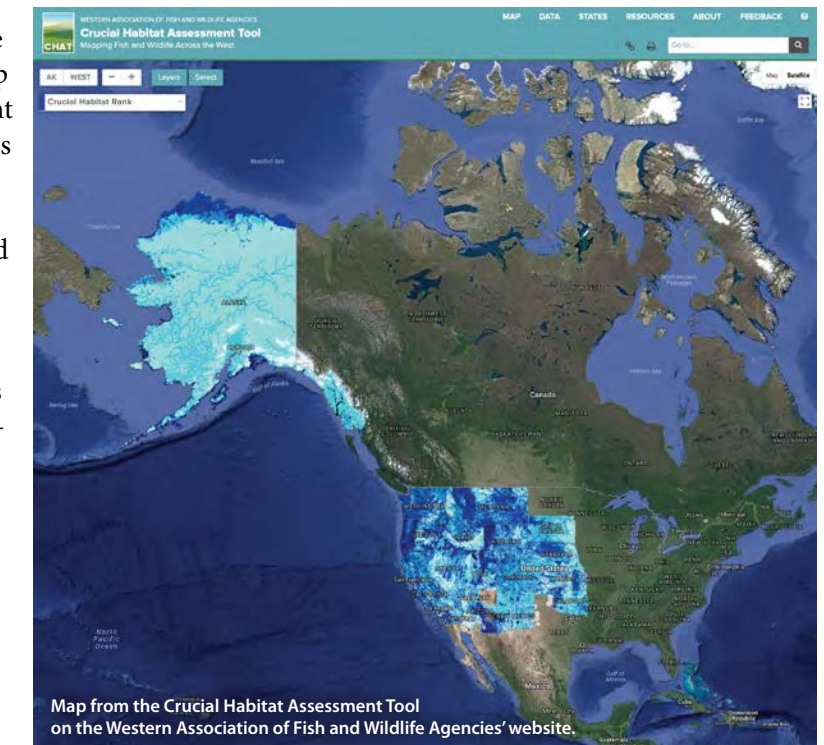
Teaching kids about dinosaur tracks.



Volunteers removing graffiti.



A Reserve Officers' Training Corp volunteering on National Public Lands Day.



Map from the Crucial Habitat Assessment Tool on the Western Association of Fish and Wildlife Agencies' website.

## The Bureau Establishes an Endangered Species Recovery Fund

As of 2012, the BLM managed about 245 species on the federal list of threatened and endangered species. More than 150 of these species depend on BLM-managed lands for a majority of their habitat. In an effort to target limited funding more strategically, the BLM created a special Endangered Species Recovery Fund in 2010 to support key recovery actions for species that are already on or are candidates for the federal endangered species list. The \$1.5 million fund represented a small portion of the BLM's total threatened and endangered species budget (an estimated \$21 million per year) but had significant impacts; for example, the U.S. Fish and Wildlife Service employed inventory and monitoring data generated through this fund in its 2011 decision to delist the Maguire daisy.



Maguire daisy.

## Greater Sage-Grouse Becomes a Candidate Species

In April 2010, the U.S. Fish and Wildlife Service warranted protection to the greater sage-grouse under the Endangered Species Act, but precluded listing the species to address higher priority species. The greater sage-grouse became a candidate species.

In August 2011, the BLM responded to the U.S. Fish and Wildlife Service's determination by announcing that it would evaluate its greater sage-grouse conservation efforts in as many as 98 of its RMPs. The U.S. Forest Service joined the BLM in this effort, considering action on up to 20 national forests. To meet the U.S. Fish and Wildlife Service's judicially mandated 2015 deadline for a final decision on listing the species, the two agencies planned to complete the joint effort by September 2014—an unprecedented timeframe for amending so many land use plans.

This effort built on the foundations of earlier cooperative efforts to improve the conservation of greater sage-grouse, particularly in Wyoming. Wyoming was home to a growing energy development industry while also supporting about 40 percent of the greater sage-grouse population. In 2011, incoming Governor Matt Mead issued an executive order building on the core area approach,



Greater sage-grouse lek in California.

underscoring commitments to sage-grouse conservation made by Governor Freudenthal in 2006.

Working under its partnership with the Western Association of Fish and Wildlife Agencies and others, the BLM completed a sage-grouse breeding bird density map in 2010, displaying crucial breeding areas for greater sage-grouse all across the West for the first time. Scientists and managers, working from this one common map, began to target limited resources to achieve the greatest conservation benefit. As the RMP amendment process moved forward, these maps were refined to delineate priority and general habitat areas for more focused management efforts on behalf of the bird.

The BLM also made the defense of key greater sage-grouse habitat a high priority when suppressing rangeland fires. In July 2010, the Bureau issued an instruction memorandum that outlined fire and fuels management procedures specifically aimed at protecting greater sage-grouse habitat, instructing fire managers to use habitat maps and a set of “best management practices” in making decisions about managing wildfires. This information allowed fire managers to dispatch limited fire crews and equipment to the highest priority areas, which could include key habitat.

## Fire Policy Allows Management for Multiple Objectives

After the fire program policy review in 1995 until 2009, agencies could only manage fires in one of two ways: for full suppression or as a wildfire use incident. Managing a wildfire use incident often meant using minimal resources and tactics to confine a naturally caused fire to a remote area where it did not threaten lives or homes so that it could play its natural role on the land.

By late in the decade, however, fire managers saw benefits to having greater flexibility in managing these large conflagrations. In 2009, fire managers modified policy implementation guidelines to allow multiple strategies on a single fire.<sup>35</sup> These guidelines gave fire managers the flexibility to deploy suppression resources where they most needed them; for example, they could protect homes on one flank of a fire and take limited action merely to confine the fire in less threatening areas on the same fire. The guidelines also opened the door to point-protection and surge operations, allowing crews to provide protection to homes or infrastructure for brief periods as needed and then work elsewhere. The term “multiple objectives” emerged in reference to these new strategies.

While the change in policy implementation was useful in the BLM's more timbered areas, it was less applicable in the vast rangelands, where the spread of cheatgrass and other invasive species made fire management and rehabilitation efforts particularly difficult. These rangeland environments required continued rapid and aggressive suppression efforts.



Wildfire approaching homes in Colorado.



Setting up a portable Remote Automatic Weather Station.

## Technological Changes Enhance Safety, Operations in Wildland Firefighting | By Sheri Ascherfeld

Much has changed in the world of firefighting in recent decades, including the fuels on the landscape, climate conditions, fire policies, and the wildland-urban interface. Technology has changed, too, providing fire personnel with new and improved tools to help them make better informed decisions and enhance safety on the fireline.

Just as computers have proliferated in homes across the country since the 1980s, they have also increasingly found their way into fire camps and are now commonly used for everything from timekeeping and managing financial affairs to modeling weather and analyzing fire behavior. For example, geographic positioning system (GPS) navigational devices aid firefighters in finding the closest water source, navigating rugged terrain, or alerting dispatch centers to the location of a crew, an engine, or an aircraft, providing vital information and an added layer of safety and efficiency. Another example is the Resource Ordering and Status System (ROSS), which can track all tactical, logistical, service, and support resources dispatched nationwide in near real-time to quickly get firefighters mobilized with the support they need.

The online Wildland Fire Decision Support System allows managers to track key decisions and the rationale that influenced them and helps them work with state, regional, and national partners to collaborate on complex decisions, share risks more broadly, and work through processes more quickly. The system includes modeling capabilities in two areas: predicting fire behavior and rapidly assessing values at risk. The fire behavior element predicts the rate, direction, and severity of fire spread based on a broad spectrum of inputs, including weather, fuels conditions, terrain and aspect, and fire history. The risk assessment element works in conjunction with the fire behavior analysis to consider lives, property, and critical infrastructure such as powerlines and roads and cultural, scenic, recreational, and other values that may be affected by a fire's spread. Fire managers can use all of the data and models to make decisions on how best to deploy crews, aircraft, and equipment in the safest, most effective, and cost-efficient manner.

Improved remote sensing capabilities led to the development of the Incident Remote Automatic Weather Station (IRAWS), which plays a critical role in managing large fires. This small, portable unit comes with sensors that monitor wind speed and direction, temperature, relative

humidity, fuel moisture, soil moisture, and smoke. The information is sent to a satellite, making it readily available to help fire managers get a broad, real-time picture of how the weather is changing over an area. Most IRAWS units are deployed by ATV, but are also delivered by helicopter or a helicopter long-line cargo delivery if a landing site is not available, and are then set up and activated on the ground.

Years of research and testing have resulted in new technology for fire shelters that offer improved protection from radiant and convective heat. The new generation of shelters protects firefighters by reflecting radiant heat and trapping breathable air.

New computer-based, online training courses enable fire personnel to acquire training from their homes or home units. There is a broad spectrum of other technological aids to fire training as well. Imagine a smokejumper exiting an airplane, pulling the handle to open his or her parachute, and then steering the square canopy in the variable winds to descend and land in the designated landing zone a safe distance from the fire. Now imagine that this jump doesn't take place near an actual fire nor from the customary altitude of 3,000 feet. Instead, this is a practice jump that takes place inside the smokejumper base at the National Interagency Fire Center in Boise, Idaho. Thanks to a virtual reality simulator, smokejumpers can practice their skills without leaving the ground. With the aid of a harness, visual goggles, and a computer, they practice in a variety of settings and conditions. The smokejumpers still get plenty of live practice jumps, but the simulator can help keep their skills sharp.

A number of other technological innovations are currently being discussed or under development that may be integrated into the fire community in the future. Unmanned aerial vehicles (UAVs) may one day be common reconnaissance equipment for fires. Testing is currently being done on units that would tap into minor electrical currents created by sap movement in trees to power remote weather equipment rather than using small solar panels. "Smart" hard hats are being made with sensors to alert the wearer about certain dangers at construction sites, which may have some future application in the fire community.

Given the pace of change in technology across the board, there may be no limits to how advances are applied in the world of firefighting and fire management.

In 2010, the BLM began ramping up efforts to hire military veterans returning home from deployments in Iraq and Afghanistan. In 2012, the BLM hosted and trained three pilot fire crews composed entirely of veterans in Oregon, California, and Nevada. The long-term goal was to provide crewmembers with a foundation for future job opportunities. As a result of various outreach programs, military veterans made up about a quarter of new BLM employees in 2012, up from about 11 percent in 2011.

### A Task Force Revisits Northwestern Forest Issues

In July 2009, Secretary Salazar withdrew the BLM's Western Oregon Plan Revisions signed in 2008, stating that "the plan cannot stand up in court and, if defended, could lead to years of fruitless litigation and inaction."<sup>36</sup> With the plan revision decisions withdrawn, the BLM was once again operating under the Northwest Forest Plan, which had guided timber sales from 1994 until 2008.

The Secretary convened the interagency Western Oregon Task Force to make recommendations on developing an updated long-term management strategy for the BLM's O&C lands. The task force's July 2010 report observed that the "highly litigious atmosphere" of Northwest Forest Plan implementation caused the agencies to design timber projects, mainly thinning and fuels reduction projects, that could quickly proceed through the Endangered Species Act's section 7 consultation process.<sup>37</sup> The report acknowledged the polarization of views on forest management issues and recognized that the BLM and U.S. Forest Service were avoiding areas with little-known and rare species (known as "survey and manage"

species under the Northwest Forest Plan) due to cost and time constraints. For example, in 2010, the BLM's annual work plans for O&C lands identified thinning projects as generating 90 percent of the proposed timber volume. The report went on to say:

"This opportunistic and risk-avoidance approach results in not implementing projects in areas where they are needed to achieve the full suite of landscape objectives. . . . Some Districts have predicted they will run out of thinning projects and harvest volume in a few years."<sup>38</sup>

The report also recommended that a science team reexamine the Northwest Forest Plan's prescriptions for conserving old-growth species and review existing "survey and manage" mitigation measures in light of new information.<sup>39</sup>

Meanwhile, the timber industry challenged the July 2009 Western Oregon Plan Revision withdrawals,

and in March 2011, the U.S. District Court for the District of Columbia vacated and remanded the July 2009 withdrawal decision. This ruling meant that the BLM would once again operate under the 2008 decisions rather than under the Northwest Forest Plan. In April 2011, conservation groups refiled their challenge to the Western Oregon Plan Revisions in the District of Oregon.<sup>40</sup> In May 2012, the U.S. District Court for the District of Oregon vacated the 2008 records of decision/RMPs for western Oregon BLM districts and reinstated the BLM's 1995 records of decision/RMPs.

Litigation on this issue continued as of 2012. Resolution will ultimately require forging a collaborative solution among the land managing and regulatory agencies, conservation groups, timber interests, local communities, and local timber-dependent tribes.



Prescribed underburn to reduce fuels in a western Oregon forest.

*Sheri Ascherfeld* began her federal career as a firefighter with the Forest Service in 1988 and moved to the National Interagency Fire Center in 1993. There she worked for the BLM in the National Interagency Coordination Center and is currently in external affairs.

## The Rangeland Program Addresses Drought Conditions

From 2010 to 2012, the BLM's management of grazing during drought took center stage. Across the West, the BLM worked cooperatively with local ranchers and others to reduce or stop livestock use or change pasture rotations where forage or water conditions were poor. Nationally, a multiyear cooperative effort with other agencies and academic institutions was bearing fruit. The goal was to develop and employ updated ecological site descriptions that reflected current scientific theory regarding the dynamics of rangeland plant communities. As a result, the BLM, U.S. Forest Service, and Natural Resources Conservation Service published an interagency ecological site description manual and handbook. These documents enabled the three agencies to share a standardized system for defining and describing ecological sites in a coordinated manner across

rangelands where ownerships and jurisdictions were often intermingled.

The BLM also continued to make progress in describing the condition of grassland, shrubland, and savanna ecosystems across ownerships through the development of rangeland data standards, which facilitated the use of this data with geographic information systems. This task was a priority of the AIM strategy. The BLM accomplished it by working with other agencies and the academic community to adopt a set of core indicators and to monitor conditions across private, state, tribal, and nonforested BLM rangeland in cooperation with the Natural Resources Conservation Service's National Resources Inventory Program. The BLM uses the resulting standardized data to both inform the development of ecological site descriptions and help determine whether BLM-managed land is meeting land health standards.

In 2012, culminating 7 years of effort, the BLM initiated a standardized protocol for reporting and mapping achievements in meeting land health standards. Prior to this, reporting was inconsistent and not centrally tracked. With the standardized protocol in place, for the first time, the BLM could more accurately report and map the condition of the land based on land health standards and visually track progress from year to year. This new reporting process also standardized electronic storage of land health information in geodatabases, allowing for easy access to the data.

Through these new rangeland monitoring programs and the larger AIM strategy, the BLM continued its progress in improving and standardizing the collection and reporting of data to support its shift toward a more science-based decisionmaking process in rangeland management.

## The Secretary Develops a New Wild Horse and Burro Strategy

In 2009, the BLM began working closely with Secretary Salazar to develop what would become the Secretary's initiative for healthy wild horses and healthy rangelands.

The Secretary outlined the strategy to key members of Congress in a letter in October 2009.<sup>41</sup> His strategy called for establishing a new set of wild horse preserves located primarily in the grasslands of the Midwest and the East, where forage and water were plentiful. Cooperative agreements with partners would reduce the costs to the government. Certain herds in the West would receive special designation as a means of expanding public awareness of the program and promoting ecotourism that could benefit local communities.

In addition, the BLM would place an increased emphasis on promoting adoptions, stepping up fertility control, and using gender adjustment as tools to maintain stable herd populations. Secretary Salazar said that the measures represented his vision for responding to the direction of Congress and the recommendations of the Government Accountability Office and would provide "a truly national solution to a concern that is not limited to the West."

In June 2010, the BLM presented the strategy with some refinements and invited further public review and comment. The agency received and considered more than 9,000 comment letters and emails and published a final strategic document on February 28, 2011. The strategy, which represented the most detailed long-term management plan ever developed for the wild horse and burro program, included more than 70 specific actions. It also called on the National Academy of Sciences to do an independent technical review of the wild horse

and burro program and reaffirmed the central role that the review would have in the BLM's wild horse and burro management decisions.<sup>42</sup>

In the interim, the BLM proposed removing approximately 7,600 animals from the range annually, 24 percent fewer than the 10,000 per year originally projected, to keep the overall on-the-range population of wild horses and burros under 39,000. This temporary reduction in gathers would allow the BLM to devote additional resources to applying more fertility control, training more wild horses to boost adoptions, and conducting more research.

## Ecosanctuary Proposals Emerge

In March 2011, the BLM requested proposals for private-public partnerships to establish wild horse preserves, called "ecosanctuaries," on non-BLM managed land. The ecosanctuaries, to be publicly accessible with a potential for ecotourism, would

help the BLM feed and care for excess wild horses removed from western public rangelands.

In February 2012, the agency announced it would begin environmental reviews for a potential ecosanctuary that would house 250 horses on a 4,000-acre private ranch in southeastern Wyoming, 30 miles west of Laramie. Two months later, the BLM announced it would analyze a proposed wild horse ecosanctuary on both public and private lands submitted by Saving America's Mustangs, a nonprofit organization formed by wild horse advocate Madeleine Pickens. Under the proposal, the BLM-managed 530,000-acre Spruce grazing allotment would be combined with approximately 14,000 acres of private land in northeastern Nevada to form the ecosanctuary for 900 nonreproducing horses. The Spruce grazing allotment, which overlays portions of three BLM wild horse herd management areas, would remain publicly accessible for a variety of outdoor activities such as big game hunting. The BLM expected the NEPA analysis to take 2 years.

The BLM continued to resist calls to use its legal authorities to dispose of excess horses through unlimited sale or "humane destruction" as being inconsistent with the public's values and passion for America's wild horses and burros.

## The Bureau Strengthens Management of Gathers and Communication

Concurrent to pursuing the agency's new strategy, the BLM began managing many large gathers under the incident command system originally designed to provide a management structure to respond to major wildfires. The system's command hierarchy and integrated organization brought personnel of



Specialists discussing drought conditions in Nevada.



Dishpan Butte Herd Management Area in Wyoming.

various disciplines and resources together so that the BLM could manage a large and complex gather efficiently and effectively.

Also in 2010, the BLM established the National Wild Horse and Burro Communications Team to support BLM field operations during gathers, particularly those drawing greater-than-normal public interest and involvement. The team focused on providing consistent messaging and delivering information through social media in response to interest groups that were using such tools as blogging, Twitter, and Facebook to gain a national audience and follow the gathers. The team created a social media portal and a wild horse and burro Facebook page, which quickly became the most visited BLM site with more than 28,000 “friends” as of 2012. For the first time, the public could follow real-time BLM updates on gathers via Twitter, YouTube, Flickr, Facebook, and the Web. Communication team members also supported large gather operations at the site, which helped relieve the local offices of a major unanticipated workload and counter the distribution of any misleading and inflammatory information.

### **Lands, Realty, and Cadastral Survey Programs Support Bureau Priorities**

The work of the BLM’s Lands, Realty, and Cadastral Survey programs continued to be vital to the functioning of the Bureau.

#### **Cadastral Surveys Provide Secure Legal Title**

Security of legal title to the land is one of the bulwarks of our basic freedoms as Americans and is the fundamental object of the cadastral surveyor’s work. It also is the focus of the BLM’s “Manual of



Surveyor and landowner working together.

Survey Instructions.” All BLM cadastral surveyors use this manual. In 2009, the BLM revised the manual for the first time since 1973. This ninth edition updated the procedures and principles for establishing or reestablishing, marking, and defining the boundaries of tracts of land, incorporating new technical advances of the 21st century.

The Department of the Interior was working to resolve a lawsuit filed in 1996 by Eloise Cobell, a member of the Blackfeet Tribe, who claimed that Indians in many tribes were not receiving appropriate payments for mineral royalties and other uses on lands belonging to either them or their tribes. Congress approved a \$3.4 billion settlement in 2010.<sup>43</sup> It included a \$1.9 billion Trust Land Consolidation Fund and \$1.5 billion in direct payments to class members. The land consolidation piece required the Department and its subsidiary agencies, including the BLM, to develop a plan to purchase various property interests held by Indian tribe members and restore those interests to tribal

trusts to consolidate titles where there were many fractional interests involved. This effort required significant coordination among several Department offices, the Bureau of Indian Affairs, and the BLM. The Cobell case was long and complex and involved many intervening court orders and rulings, including some that required the shutdown of various electronic systems that support the BLM’s work, eventually leading to a just settlement.

The 125,000 parcels identified became part of a massive buy-back program. As part of government-to-government relationships with Indian tribes, the BLM shared mapping information with the 29 tribal governments and identified more than 2.9 million purchasable fractional interests owned by more than 250,000 individuals. The buy-back program allowed interested individual owners to sell their interests voluntarily to consolidate titles for the tribes. Cadastral surveys were an essential component of this groundbreaking program.

### **Lands and Realty Program Supports Conservation and Energy Rights-of-Way**

The Omnibus Public Land Management Act of 2009 required the BLM to complete numerous land exchanges and other land acquisitions and conveyances. The BLM acquired lands to protect resources or add to conservation areas and other management areas. The BLM also transferred lands no longer needed for federal programs out of public ownership to communities and private entities to enhance local developments and community needs.

The renewable energy development program continued to be a high priority within the Department and the BLM. Renewable energy projects involved the BLM’s lands, realty, and

cadastral survey staffs because solar and wind energy development on public lands was authorized as a right-of-way. With proposals for solar projects, principally in the southwestern states, and for wind projects, mainly in Wyoming, requests for authorizations were steadily increasing.

### **Federal Land Transaction Facilitation Act Authority Ends**

During the 11 years (2001-2011) that the Federal Land Transaction Facilitation Act was authorized, the BLM sold 330 parcels of land (27,249 acres) having a total value of \$117.4 million. Over the life of the act, the federal government acquired approximately 18,100 acres of high resource value lands, with a total value of \$50.4 million.<sup>44</sup>

The last use of Federal Land Transaction Facilitation Act funds was on July 28, 2011, when the BLM completed a fee purchase of a 400-acre parcel within the Johnson Canyon Area of Critical Environmental Concern located in California. The BLM purchased the parcel with \$1.2 million of Federal Land Transaction Facilitation Act funds, with assistance from The Conservation Fund. The area of critical environmental concern contains a wide range of important natural resources and exceptional scenic vistas, and it provides important habitat for numerous species listed as threatened or endangered. The area is rich in cultural and historic resources and popular with outdoor enthusiasts. The original authorizations for FLTFA were for 10 years with an extension of an additional year. Although the BLM and others proposed renewals of FLTFA, Congress had not enacted legislation as of 2012.

### **Land and Water Conservation Fund Enables Acquisitions**

From 2009-2012, the BLM received just over \$80 million of land acquisition funding through Land and Water Conservation Fund appropriations. The BLM directed these funds to 24 projects in 9 western states. With these funds (accompanied by an additional \$4.9 million in leveraged funds provided by conservation groups and others), the BLM completed fee and conservation easement purchases of 139 parcels totaling more than 59,000 acres. In keeping with the growing public awareness and appreciation of the National Landscape Conservation System and development threats facing these national treasures, the BLM’s land acquisition focus turned towards prioritizing preservation of these areas.

The size of parcels that the BLM acquired ranged from 2 acres within the California Coastal National Monument to 2,080 acres within the Cascade-Siskiyou National Monument in Oregon. In 2011, assisted by The Conservation Fund, the BLM completed a purchase of 1,855 acres within the Canyons of the Ancients National Monument in Colorado. This purchase followed the earlier purchase of the Wallace parcels in 2009 with Federal Land Transaction Facilitation Act funding. In 2012, with assistance from The Nature Conservancy, the BLM used \$1.6 million from the Land and Water Conservation Fund to purchase 13 private lots in support of the Table Rocks Area of Critical Environmental Concern in Oregon. This area jointly supports the protection of special plants and animal species, along with unique geologic and scenic values, while supporting environmental education opportunities.



Table Rocks Area of Critical Environmental Concern in Oregon.



## Land and Water Conservation Fund Acquisitions | *By David Beaver*

The Land and Water Conservation Fund (LWCF) Act, passed in September 1964, allowed Congress to appropriate funding to acquire lands within specifically designated units managed by the Bureau of Land Management (BLM), National Park Service, U.S. Fish and Wildlife Service, and U.S. Forest Service. Funds for the LWCF come from offshore oil and gas leasing revenues, land sales, and motorboat fuel taxes. Within the BLM, these funds are primarily targeted to units of the National Landscape Conservation System, areas of critical environmental concern (ACECs), and special recreation management areas.

By 2012, the BLM had received more than \$811 million from the LWCF, ranging from \$13,015 for its first land acquisition appropriation in 1970 to \$298.4 million in 1998. Funding received through the LWCF complements funding through other sources, including the Federal Land Transaction Facilitation Act and Southern Nevada Public Land Management Act, and is supplemented by acquisition of lands through donation and exchange. The LWCF has allowed the BLM to make some significant accomplishments in acquiring land for natural resource benefits, including open space, wildlife habitat, and recreation, as described in the examples that follow.

### Upper Snake/South Fork Snake River Area of Critical Environmental Concern/ Special Recreation Management Area, Idaho

Born of snowmelt and springs among high ridges of Yellowstone country, the 43,000-acre Upper Snake/South Fork Snake River project area preserves the scenic viewshed within the Snake River corridor in eastern Idaho. Gliding through mountains, canyons, meadows, and the vast farmlands of the Snake River plains, lined with commanding cottonwood galleries and a lush shrub understory, the corridor sustains a broad variety of plants, fish, birds, and wildlife populations. It is the only home for the federally threatened Ute ladies'-tresses orchid in Idaho; is a world famous, blue ribbon fishery, supporting the largest wild Yellowstone cutthroat trout population outside of Yellowstone National Park; and provides multiple wildlife migration corridors and habitat connectivity. The first World Fly Fishing Championship in North America took place on the South Fork in 1997. The area provides crucial habitat for 126 bird species (the majority of them neotropical migrants), including the majority of Idaho's bald eagle production (with 27 nesting territories), and has been designated as a "Continental Important Bird Area." Diverse recreational opportunities account for over 300,000 recreational visits per year. The project serves as a national model for land conservation, strategically utilizing conservation easements in an effort to preserve the unique values of this area. Since 1991, in an effort to eliminate threats from rural residential subdivision and resort development, the BLM, assisted by The Conservation Fund, The Nature



Bald eagle near the Snake River.

Conservancy, and the Teton Regional Land Trust, has acquired over 9,500 acres for \$24.2 million. An additional 10,200 acres (valued at \$17.6 million) have been protected by active conservation partners.

### Headwaters Forest Reserve, California

The 7,500-acre Headwaters Forest Reserve is an old-growth coast redwood grove located in northern California near Humboldt Bay. In 1999, the BLM acquired the Headwaters Forest property for \$380 million (including \$130 million from the State of California) from Pacific Lumber Company. The reserve was created after a 150-year effort to save the ancient ecosystem (some trees are estimated to be more than 2,000 years old) from being clearcut and to protect and preserve important ecological and wildlife values. Stands of old-growth redwood provide habitat for the threatened marbled murrelet, and stream systems provide critical habitat for the threatened coho salmon. Headwaters Forest, which is the only forest reserve in the United States, is co-managed with the State of California and is managed as a nature reserve within the BLM's National Landscape Conservation System.



Towering redwoods in Headwaters Forest Reserve.

### King Range National Conservation Area, California

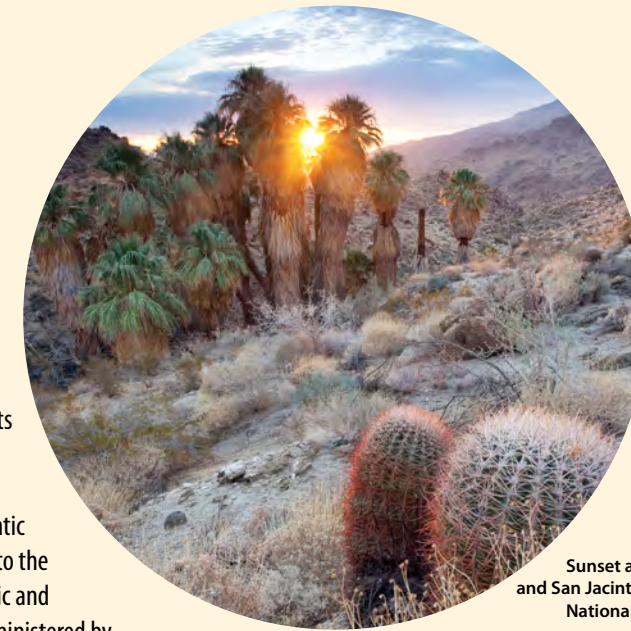
The 68,000-acre King Range National Conservation Area extends for 35 miles along northern California's Pacific coast and features a spectacular convergence of land and sea. Here the landscape was too rugged for highway building, forcing State Highway 1 and U.S. Highway 101 inland. This remote region is known as California's "Lost Coast." Working since 1973 (making this one of its longest-funded projects), the BLM, assisted by Save-the-Redwoods League, has acquired 14,800 acres for \$13 million to consolidate public lands for recreation, scenic, and wildlife values. An additional 12,500 acres (valued at \$21.2 million) has been acquired by exchange.



Wildflowers at King Range National Conservation Area.

### Santa Rosa and San Jacinto Mountains National Monument, California

Providing a rugged backdrop to the gateway communities of Palm Springs, Palm Desert, and La Quinta, the 272,000-acre Santa Rosa and San Jacinto Mountains National Monument annually hosts over 1.5 million visitors. This undeveloped "island," a series of steep escarpments ranging from sea level to nearly 11,000 feet in elevation, is home to more than 600 animal and plant species residing within several distinct climatic zones. Rapid urbanization immediately adjacent to the monument is threatening these tremendous scenic and wildlife resource values. The monument is co-administered by the BLM and the Forest Service. Since 1992, in an effort to eliminate threats from encroaching rural residential subdivisions, the BLM, assisted by Friends of the Desert Mountains, has acquired 17,800 acres at a cost of \$15.1 million. An additional 47,000 acres (valued at \$48.7 million) has been protected by active conservation partners.



Sunset at Santa Rosa and San Jacinto Mountains National Monument.

### Lesser Prairie-Chicken Habitat Preservation Area of Critical Environmental Concern, New Mexico

Located in the transition zone between the southern Great Plains and the Chihuahuan Desert, the 58,000-acre Lesser Prairie-Chicken Habitat Preservation ACEC is prime habitat for both the lesser prairie-chicken and the sand dune lizard. This area of sand dunes and tall bluestem grasses provides ideal habitat for these species, which are both candidates for listing under the Endangered Species Act. In March 2010, the BLM, assisted by The Conservation Fund, acquired the 7,440-acre Ventana Ranch parcel with \$1.25 million from the LWCF. The purchase complemented a June 2009 land exchange with the State of New Mexico, which allowed the acquisition of all 9,350 acres of state land within the ACEC.



Lesser prairie-chicken.



Sand dune lizard.

## Roads and Rights-of-Way Spark Debate

A 20-word piece of legislation, Revised Statute (R.S.) 2477, section 8 of the Mining Law of 1866, continued to spark debate over roads and rights-of-way across the public lands in the West. Repealed in 1976 by FLPMA, the statute nonetheless grandfathered in existing grants. Because these grants did not require approval, no records of them existed. Thus, determining their validity was an issue for many years.

The BLM did not have the authority to make binding determinations on the validity of R.S. 2477 right-of-way claims. The BLM could, however, make informal, nonbinding, administrative determinations for land use planning and management purposes. It must base these determinations in the particular laws of each state in which a claimed right-of-way is situated. In Utah, applicable state code provided for the acceptance of a right-of-way pursuant to R.S. 2477 across public lands not reserved for public purposes when the public had used a right-of-way for a continuous 10-year period. As of 2012, the BLM was working closely with the State of Utah on resolving a large number of their R.S. 2477 claims.



Onion Creek Trail near Moab, Utah.

*David Beaver* was the national program lead for the BLM's LWCF and Federal Land Transaction Facilitation Act land acquisition programs in the Washington Office from 1991 until his retirement in 2015. Prior to that, he worked for the U.S. Fish and Wildlife Service and was a realty specialist in the Great Divide Field Office and a natural resource specialist in the Casper District Office for the BLM in Wyoming.

## The Road to Resolution: Revised Statute 2477 | By Jeff Holdren

*“The right of way for the construction of highways over public lands, not reserved for public uses, is hereby granted.”*

These 20 words, known as Revised Statute (R.S.) 2477, have probably caused the BLM more angst on a word-for-word basis than any other piece of legislation. The statute was originally enacted as section 8 of the Mining Law of 1866 to provide for access to mining claims authorized by that law, but its use extended to other access routes. Since its enactment, thousands of rights-of-way were developed, although the exact number is unknown. Because these rights-of-way did not require any formal approval, in most instances, they were not recorded on public land records or in official county records and there was little guidance from the General Land Office or the BLM on the proper acknowledgment of roads.

In 1976, the Federal Land Policy and Management Act (FLPMA) provided new authority to obtain access across public lands but also repealed R.S. 2477. However, existing grants were grandfathered in and are still in effect. Roads that are claimed to be subject to the law range from trails that are barely visible to the naked eye to paved roads that are designated as state highways. Some claims, if proven valid, have the potential to impact wilderness and other pristine areas.

The grandfathering process has resulted in much deliberation over the meaning of several key words in the legislation. What constitutes construction? What is a highway? What lands are considered to be reserved?

Several Department of the Interior policies have attempted to resolve these issues over the past 20 years. In 1988, Secretary Donald Hodel’s policy stated that for an R.S. 2477 road to be valid, it must be on unreserved lands, have been constructed when lands were unreserved, and be a public highway. Other factors (abandonment, width, etc.) were dependent upon state law. In 1993, Secretary Bruce Babbitt proposed regulations that were put on hold by Congress; he then established a policy in 1997 that for a road to be valid, it had to be constructed mechanically and have beginning and ending points, and there also had to be a compelling need for it.

In Utah, several counties began making improvements to roads that they claimed were valid R.S. 2477 grants. In 1996, the Southern Utah Wilderness Alliance and the Sierra Club brought suit seeking to stop further road construction across BLM lands. In 1998, the district court ruled that the counties’ maintenance and use of R.S. 2477 roads was not considered trespassing on federal lands but stayed the case pending an administrative determination by the BLM as to the validity and scope of the claimed R.S. 2477 rights-of-way. In June 2001, the district court affirmed all of BLM’s determinations. The counties appealed.

A three-judge panel for the Tenth Circuit Court of Appeals rejected the BLM’s administrative determinations in September 2005. Specifically, the court held,

among other things, that the BLM lacked authority to make binding determinations on the validity of the R.S. 2477 claims. This decision allowed roads to be maintained at the status quo but did not authorize automatic expansion of roads.

One of the proposed ways to authorize a valid R.S. 2477 claim was through section 315 of FLPMA, which pertains to recordable disclaimers of interest (RDI). An RDI allows the Secretary to issue a document that would help remove a cloud on the title of a land parcel where the recorded interest of the United States in the parcel has terminated or is invalid. Other means to obtain legal rights to an asserted R.S. 2477 road include the use of a right-of-way as authorized by Title V of FLPMA and quiet title determination through a court of law.

Secretary Gale Norton issued guidelines in March 2006 to assist Department of the Interior land managers in implementing the principles outlined in the court’s opinion. In February 2009, under Secretary Ken Salazar, the BLM issued a memorandum stating that pending further review and direction from the Secretary, it would not process or review any claims under R.S. 2477, including the use of RDIs.

However, over the last few years, Utah has, under state law, recorded documents accepting claims for more than 2,000 “class B” roads (county roads) across BLM-managed lands. Utah counties receive funding through the state for the maintenance of class B roads. The state has also recorded documents on “class D” roads (any established or constructed road, way, or land surface route). Utah provides no funds for class D roads, which typically receive no routine maintenance.

The BLM in Utah has worked cooperatively with some counties to address asserted R.S. 2477 roads via FLPMA rights-of-way or road maintenance agreements. FLPMA rights-of-way are cost-free to the state and counties, and they can include conditions to not disturb any underlying R.S. 2477 claim if adjudicated in the future, making them attractive to some Utah counties. Other counties take a different position, essentially refusing to seek FLPMA rights-of-way, and believe that judicial determinations are required if the BLM is unable to acknowledge roads through an administrative process in a timely manner. Under this circumstance, some counties have resorted to litigation. Environmental groups, including Earthjustice, The Wilderness Society, Sierra Club, Southern Utah Wilderness Alliance, and others, are scrutinizing state and county right-of-way claims and have requested intervention in Quiet Title Act litigation involving R.S. 2477 claims.

As of 2012, several other western states indicated an interest in pursuing various means to establish R.S. 2477 roads. Because of the variety of issues that have been raised and solutions that have been proposed, a resolution to R.S. 2477 claims will no doubt be a long way down the road.

## Law Enforcement Officers Protect Against Resource Damage and Threats to Public Safety

### Investigation Leads to Recovery of Stolen Artifacts

On June 10, 2009, the BLM, Federal Bureau of Investigation, and other partners announced arrests in the Four Corners region of southern Utah for the theft of archaeological and cultural artifacts from public lands. The arrests were the culmination of a 3-year undercover operation dubbed the Cerberus Action, the largest investigation of artifact theft from public lands to date. The agencies suspected 24 individuals of looting pristine sites, stealing priceless artifacts from public lands, and selling artifacts to dealers and collectors.

Among the recovered items were two collections valued at more than \$6 million. They included Ancestral Puebloan, stone pipes, burial and ceremonial masks, and ancient sandals associated with Native American burials.<sup>45</sup> “Those who remove or damage artifacts on public or tribal lands take something from all of us,” said U.S. Attorney Brett Tolman. “These treasures are the heritage of all Americans, and in many cases, the objects are sacred to Native Americans.”<sup>46</sup>



In 2010, the BLM began consulting with the Indian tribes potentially affiliated with the artifacts. Tribes helped the BLM identify and catalog the artifacts and determine cultural affiliation. The BLM developed an outreach plan and built partnerships with Indian tribes and community organizations to promote stewardship of these and other archaeological resources.

By the end of 2011, the Cerberus Action had resulted in 28 federal convictions on 28 felony counts. As of 2012, the investigation continued in cooperation with other federal and state law enforcement partners.<sup>47</sup>

### Officers Address Border Issues

Along the 370-mile border Arizona shares with Mexico, BLM law enforcement officers played an increasingly important role in addressing the smuggling of undocumented aliens and illegal drugs across the international border.<sup>48</sup>

In 2009, law enforcement agencies worked cooperatively along the southwest border and

seized more than 1 million pounds of drugs—a record, according to the U.S. Drug Enforcement Administration. The BLM managed much of the border area that smugglers must traverse, including lands within the Ironwood Forest and Sonoran Desert National Monuments in Arizona. BLM special agents and rangers seized more than 13,000 pounds of marijuana in 2009. They also apprehended more than a dozen individuals suspected of, and later indicted for, involvement in smuggling operations. As these types of illegal activities increased, so did concern for public safety and for public land resources near the border.<sup>49</sup>

In 2010, BLM managers and law enforcement staffs developed a long-term response to public safety threats and resource damage caused by international human and drug trafficking organizations in these two BLM-managed national monuments in Arizona. Operation Reclaim Our Arizona Monuments, organized and operated under the incident command system, was a multifaceted, multiagency response to these threats. Through the increased presence of BLM law enforcement officers and other federal, state,



Burr Trail, Grand Staircase-Escalante National Monument in Utah. Photo by Ken Lund.

Jeff Holdren was the division chief for lands, realty, and cadastral survey in BLM’s Washington Office before he retired in 2010. He began his BLM career as a range conservationist in Riverside, California, later converting to a realty specialist. He was also an area manager in Nevada and the deputy director for lands and minerals in the Eastern States Office. Jeff continues his service to the BLM as a volunteer.

and local law enforcement agencies, the goal was to identify drug trafficking organizations, target and remove countersurveillance operatives, and arrest and prosecute drug smugglers. The officers also provided security in support of the BLM's administrative efforts to install vehicle barriers to protect sensitive resources, remove hundreds of tons of smuggling-related trash, and clear vegetation from road accessible hideouts historically used by drug trafficking organizations.

There is no doubt that the future holds new and unanticipated challenges for BLM law enforcement as burgeoning populations place greater demands on the public lands and resources and "all such acts and things touching or respecting the public lands of the United States."<sup>50</sup> If history is a guide, BLM law enforcement officers will continue to be

forerunners in enforcing resource protection laws, ready to face the unforeseen challenges of the future.

### Public Lands Provide Economic and Intrinsic Value

As of 2012, the BLM managed more than 245 million acres of public land, more land than any other federal agency.<sup>51</sup> The BLM also administered 700 million acres of subsurface mineral estate. Activities involving these lands and resources were making significant contributions to the national economy. In 2012, commodity, energy, recreation, and conservation uses on the public lands generated an estimated combined economic output of more than \$126 billion to the U.S. economy and

supported more than 635,000 full- and part-time jobs for Americans.<sup>52</sup>

BLM lands provided less direct economic benefits as well. Increasingly, in this mobile society, people chose to live in areas near public lands, and they brought their income, and often their jobs, with them, which had a positive, cascading effect on community growth.

While the economic benefits of public lands are measurable, it is impossible to accurately measure the intrinsic values these lands provide. Extreme beauty, wide-open spaces, clean water and air, places of rest and solitude, crucial wildlife habitat, and protection of rare plants are more meaningful to many people than the dollar value of public lands.



Hiking with dogs  
in Sand to Snow  
National Monument in  
California.



Las Cienegas National Conservation Area in Arizona.

### The Value of BLM's Wild Side: Western Communities Benefit from Open Landscapes | By Luther Propst

*"There's just value in beauty."*

—Chris Long, President of the Friends of the San Pedro in southern Arizona

Rocky canyons and wild rivers; open plains with herds of wild horses; working landscapes of grazing livestock, mining, and oil and gas development; historic and cultural trails; wilderness areas of beauty and solitude—the BLM oversees the most iconic landscapes in the West. Covering about 245 million acres of the United States, the vast majority in the West and in Alaska, BLM lands and the activities that take place on them contribute significantly to the economies of local communities as well as to the country as a whole.

Over the last 20 years, the Sonoran Institute has worked with the BLM to inform communities and engage diverse people in discussions about choices and tradeoffs regarding the uses and values of BLM lands and the various benefits they confer on nearby communities. We've done studies to examine the economic implications of protecting BLM lands. This is challenging work, in part because the economic benefits of resource development and extraction are usually centralized and easy to observe, while the environmental and other costs of resource extraction are diffuse and more challenging to measure.

While the economics of these lands are complex, it is clear that open landscapes managed by the BLM are valuable on many levels. Beyond the easily quantifiable value of public lands, such as the revenue provided by oil and gas production, many economic benefits are more subtly expressed.

For example, Las Cienegas National Conservation Area (NCA) and surrounding lands southeast of Tucson, Arizona, are the exclusive source for drinking water for thousands of residents in eastern Pima County. This water is clearly a huge economic asset for the region, yet placing a specific value on it would challenge most economists. Similarly, riparian areas on BLM lands function as natural, low-cost, flood control systems. When these streamside landscapes are altered by development, use, or resource extraction, alternate sources of water and flood protection are needed, and they are costly.

An estimated 22 million people in the West reside within 25 minutes of lands managed by the BLM. This proximity provides yet more economic value derived from agency lands. A study by two

University of Arizona economics professors found that two popular birding sites in southern Arizona have significant economic value. The San Pedro Riparian NCA and Ramsey Canyon, a nearby preserve managed by The Nature Conservancy, add as much as \$16.9 million to the area each year in tourist spending and generate up to 590 jobs spread throughout dozens of local businesses.

It is significantly more straightforward to measure the economic impact of visitors to public lands than to quantify the value of critically important factors such as clean air and clean water. As a result, too much emphasis is placed on those studies and too little on the much more significant economic benefits of the public lands that are simply harder to quantify, yet no less valuable.

Another area of study is the extent to which public lands attract bright, creative people and their capital, jobs, and innovation. Open spaces such as those administered by the BLM may well exert a substantial economic impact from their ability to attract well-educated and highly paid workers—not just in resource development, but in aerospace, health care, higher education, finance and other fields. These workers are attracted to cities that maintain a connection to wild spaces while cultivating a mature and sophisticated economy, such as Tucson and Sierra Vista, Arizona; Grand Junction, Colorado; and Las Vegas, Nevada.

A good example is Sonoran Desert National Monument, a 487,000-acre BLM natural area located just beyond the sprawling golf course developments of the Phoenix metropolitan area. Local economic development officials market and support this and other conservation areas, knowing that these conserved lands help attract highly skilled workers who participate in hiking, mountain biking, and other outdoor recreational activities at a higher rate than the general population.

While the most significant impacts of conserved public lands are indeed difficult to quantify, it is important that we do so in order to gain a better understanding of the actual economic and community benefits, and costs, of decisions regarding the conservation and development of public lands.

Luther Propst founded the Sonoran Institute, which works to conserve public lands, promote "smart growth," better manage water, and reform local and state energy and climate change policies. He served as executive director until 2012.

## Is Democracy Compatible with Conservation? | By Patricia Nelson Limerick

If you pay attention to the history of the Bureau of Land Management, you will soon be wrestling with one of the most consequential questions of the last two centuries.

The practices we categorize as “conservation” all involve restraining some uses of natural resources so that those resources are available in the future. Finding the right relationship between use and restraint is a challenge faced by every BLM employee every working day.

The practices of conservation originated in very different times and in very different political systems. The origins of conservation can be traced from two unsettling and overlapping territories: the European world of monarchy and aristocracy and the extension of European imperial power over distant colonies.

In the 18th and 19th centuries, on the estates of monarchs and aristocrats, enthusiasm for hunting led to the purposeful conservation of habitat for game animals. Limiting or even prohibiting the access of commoners to these lands was a key feature of early conservation.

Even earlier, in the 17th century, naturalists were sent along on voyages and expeditions. They wrote of the exotic flora and fauna of distant lands and pushed colonial governors to preserve these treasures from exhaustion or depletion. Here, too, power was exercised to achieve conservation, as native-born locals were restricted from using the plants, animals, and lands that were once essential for their subsistence.

The rise of democracy ended many of these practices. At the time of this nation’s origin, the Founders might well have felt that democracy and conservation were inherently incompatible. Early land laws all involved some form of “disposal” of the public domain into private ownership. The idea of restraining the access of individual citizens to the ownership and use of land seemed squarely at odds with democratic ideology.

In the West, the Jeffersonian agrarian dream hit tough times. Vast areas of land, characterized by elevation, ruggedness, and aridity, were not at all suited to farming. Consequently, a vast domain of otherwise unwanted land remained under the ownership and management of the federal government.

The greatest share of that land is now the responsibility of the BLM. Created by the merger of the General Land Office and the Grazing Service in 1946, the BLM was always obligated to shape its policy in response to the demands of American citizens. More so than any other agency, the BLM had to consider and adapt to the preferences of elected officials and local residents whose livelihoods depended on the public lands.

By the end of the 20th century, an extraordinary transformation occurred. Many Americans developed an affection and appreciation for the arid and semiarid western lands that “no one wanted,” and soon there was hardly a single unloved square inch left in the terrain that was once classified as “wastelands.”

The growing appreciation for the beauty, biodiversity, and recreational attractions of public lands was emerging as a major political and cultural force, challenging BLM’s earlier, close ties with local resource users. Americans from all over the nation directed their ambitions, hopes, worries, fears, and



preferences at the BLM. The good news was that the nation’s citizens were recognizing and embracing their ownership of the public lands. But, by the same measure, combining democracy with conservation had grown immeasurably more complicated. In truth, responding to the concerns of American citizens had been considerably easier when there were dramatically fewer people in that mix and when the majority of the people involved lived in proximity to BLM lands.

In recent years, there have been more challenges to the idea of separating the domain of the natural from the domain of the human. The assumption that the preservation of natural landscapes meant quarantining them from human presence and use preceded current environmentalism. And yet few, if any, American places ever existed in a pristine condition unaffected by human beings; in hunting, gathering, and farming, as well as in the strategic use of fire, Indian people had been present and active in every locale. The growing recognition of the inseparability of the “human” from the “natural,” its mandate to manage working landscapes, and the convergence of individuals and groups with a wide range of ambitions and aspirations on the public lands led the BLM once again to the intersection where democracy and conservation meet.

The opening section of the Federal Land Policy and Management Act of 1976, the enabling act for the BLM, provides an inventory of what comes to the minds of the American people when they have looked at nature and assessed its value. Allow yourself to empathize as you review even a partial list of what people want from the public lands—grass for livestock grazing, game to hunt, lands for wind and solar energy production, precious minerals to mine, natural gas to drill for, places to hike and camp, trails for off-road vehicles, habitats for wildlife, refuges for wild horses, streams and rivers for game fish, archaeological sites to study. Then imagine yourself trying to negotiate with the people pursuing these various goals, all of them legitimate and only a few of them completely compatible. You may momentarily find yourself envying the powers once exercised by kings, queens, and colonial governors on behalf of the conservation of resources.

In this test of the compatibility between democracy and conservation, the BLM is unmistakably the crucible. Its extraordinary landholdings are the places where the great question we inherit from the past undergoes its most revealing trials: Is democracy compatible with conservation?

If you’re interested in the answer (and what good citizen wouldn’t be?), ask a BLM employee to tell you what he or she did at work today.

## Notes

1. Robert Abbey, BLM Director, statement before the U.S. Senate Committee on Energy and Natural Resources, July 9, 2009.

2. Energy Information Administration, “Petroleum Marketing Monthly October 2008,” [http://www.eia.gov/petroleum/marketing/monthly/archive/2008/2008\\_10/pdf/pmmtab1.pdf](http://www.eia.gov/petroleum/marketing/monthly/archive/2008/2008_10/pdf/pmmtab1.pdf).

3. Energy Information Administration, “Frequently Asked Questions,” [www.eia.gov/tools/faqs/faq.cfm?id=247&t=10](http://www.eia.gov/tools/faqs/faq.cfm?id=247&t=10) (accessed September 1, 2011).

4. U.S. Department of the Interior, “Salazar Reforms U.S. Oil Shale Program,” press release, October 19, 2009, [www.doi.gov/news/pressreleases/2009\\_10\\_20\\_release.cfm](http://www.doi.gov/news/pressreleases/2009_10_20_release.cfm) (accessed July 25, 2011).

5. U.S. Department of the Interior, “Salazar: Technology, Water Supplies, and Fair Return Must Guide Nation’s Oil Shale Program,” press release, February 15, 2011, [www.doi.gov/news/pressreleases/Salazar-Technology-Water-Supplies-and-Fair-Return-Must-Guide-Nations-Oil-Shale-Program.cfm](http://www.doi.gov/news/pressreleases/Salazar-Technology-Water-Supplies-and-Fair-Return-Must-Guide-Nations-Oil-Shale-Program.cfm) (accessed July 25, 2011).

6. On January 17, 2009, a federal district court enjoined the Department of the Interior from entering into oil and gas leases for 77 parcels in Utah that had been included in a December 19, 2008, auction. The court entered a temporary injunction against the sale of the parcels after concluding that plaintiffs had established “a likelihood of success on the merits” regarding their claims that the proposed lease sales violated the National Environmental Policy Act, Federal Land Policy and Management Act, and National Historic Preservation Act. An Interior Department report released in June 2009 revealed flaws in the leasing process used in the Utah sale that included several parcels near Arches and Canyonlands National Parks and Dinosaur National Monument. Bureau of Land Management, “Interior Review Shines Light on Controversial Utah Oil and Gas Leases,” news release, June 10, 2009, [http://www.blm.gov/wo/st/en/info/newsroom/2009/june/NR\\_0611\\_2009.html](http://www.blm.gov/wo/st/en/info/newsroom/2009/june/NR_0611_2009.html).

7. U.S. Department of the Interior, “Interior Finalizes Onshore Oil and Gas Leasing Reforms,” press release, May 17, 2010, [www.doi.gov/news/pressreleases/Interior-Finalizes-Onshore-Oil-and-Gas-Leasing-Reforms-5-17-2010.cfm](http://www.doi.gov/news/pressreleases/Interior-Finalizes-Onshore-Oil-and-Gas-Leasing-Reforms-5-17-2010.cfm) (accessed July 25, 2011).

8. The White House, “Weekly Address: President Obama Announces New Plans to Increase Responsible Domestic Oil Production,” May 14, 2011, <http://www.whitehouse.gov/the-press-office/2011/05/13/weekly-address-president-obama-announces-new-plans-increase-responsible->, and “Executive Order 13580—Interagency Working Group on Coordination of Domestic Energy Development and Permitting in Alaska,” July 12, 2011, <http://www.whitehouse.gov/the-press-office/2011/07/12/executive-order-13581-interagency-working-group-coordination-domestic-en>.

9. Bureau of Land Management, “Secretary Salazar, Senator Reid Announce ‘Fast-Track’ Initiatives for Solar Energy Development on Western Lands,” news release, June 29, 2009, [www.blm.gov/wo/st/en/info/newsroom/2009/june/NR\\_0629\\_2009.html](http://www.blm.gov/wo/st/en/info/newsroom/2009/june/NR_0629_2009.html) (accessed June 28, 2011).

10. Bureau of Land Management, “Salazar Calls Two-Year ‘Time-Out’ from New Mining Claims on Arizona Strip Watershed Near Grand Canyon National Park,” news release, July 20, 2009, [http://www.blm.gov/wo/st/en/info/newsroom/2009/july/NR\\_0720\\_2009.html](http://www.blm.gov/wo/st/en/info/newsroom/2009/july/NR_0720_2009.html).

11. Shaun McKinnon, “Grand Canyon Mining-Claim Ban Extended,” *The Arizona Republic*, June 21, 2011, <http://www.azcentral.com/news/election/azelections/articles/20110620grand-canyon-mining-claims-ban-extended.html>.

12. U.S. Department of the Interior, “Secretary Salazar Announces Decision to Withdraw Public Lands near Grand Canyon from New Mining Claims,” press release, January 9, 2012, [www.interior.gov/news/pressreleases/Secretary-Salazar-Announces-Decision-to-Withdraw-Public-Lands-near-Grand-Canyon-from-New-Mining-Claims.cfm](http://www.interior.gov/news/pressreleases/Secretary-Salazar-Announces-Decision-to-Withdraw-Public-Lands-near-Grand-Canyon-from-New-Mining-Claims.cfm).

13. Ken Salazar, Secretary of the Interior, “Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources,” Secretarial Order 3289, September 14, 2009.

14. Kit Muller, personal communication.

15. “Federal Leadership in Environmental, Energy, and Economic Performance,” Executive Order 13514, October 5, 2009.

16. Juliet Eilperin, “Interior Launches Climate Strategy,” *The Washington Post*, September 15, 2009, [www.washingtonpost.com/wp-dyn/content/article/2009/09/14/AR2009091403307.html](http://www.washingtonpost.com/wp-dyn/content/article/2009/09/14/AR2009091403307.html).

17. Statement by President Barack Obama regarding the Omnibus Public Land Management Act, March 30, 2009, [www.whitehouse.gov/the\\_press\\_office/Statement-from-the-Presidents-signing-statements-on-HR-146-the-Omnibus-Public-Lands-Management-Act/](http://www.whitehouse.gov/the_press_office/Statement-from-the-Presidents-signing-statements-on-HR-146-the-Omnibus-Public-Lands-Management-Act/) (accessed August 1, 2011).

18. Public Law 111-11 (Omnibus Public Land Management Act) created the BLM’s Prehistoric Trackways National Monument in New Mexico and added to the NLCS “any area designated by Congress to be administered for conservation purposes, including— . . . (D) public land within the California Desert Conservation Area administered by the Bureau of Land Management for conservation purposes.”

19. Bureau of Land Management, *The National Landscape Conservation System 15-Year Strategy 2010–2025* (Washington, DC: 2011).

20. Ken Salazar, Secretary of the Interior, “Management of the National Landscape Conservation System,” Secretarial Order 3308, November 15, 2010, [www.blm.gov/or/news/files/NLCS\\_Order.pdf](http://www.blm.gov/or/news/files/NLCS_Order.pdf). The order specifically recognized that “conservation of this Nation’s rich natural and cultural heritage is an equally important land management objective, and an integral part of the BLM’s multiple use mission.” It is “a long-term investment that provides quality of life and economic benefits for current and future generations.”

*Patty Limerick*, a distinguished American historian, is the faculty director of the University of Colorado’s Center of the American West. She has had the opportunity to participate in many memorable conversations with members of the BLM staff and has written a collection of essays on the Department of the Interior.

21. U.S. Department of the Interior, “Treasured Landscapes,” *2011 President’s Budget: Departmental Highlights*, 2011, DH 35–48, [www.doi.gov/budget/appropriations/2011/highlights/upload/Treasured-Landscapes.pdf](http://www.doi.gov/budget/appropriations/2011/highlights/upload/Treasured-Landscapes.pdf) (accessed July 30, 2011).

22. Western Caucus, “President Eyes New National Monument Sites Throughout West,” press release, February 18, 2010, <http://chaffetz.house.gov/press-release/president-eyes-new-national-monument-sites-throughout-west>. The Caucus’ website lists property rights as a priority issue; see [www.westerncaucus.pearce.house.gov/issues/](http://www.westerncaucus.pearce.house.gov/issues/) (accessed July 29, 2011).

23. Ken Salazar, Secretary of the Interior, question and answer session during a hearing before the Senate Committee on Energy and Natural Resources to consider the President’s proposed budget for fiscal year 2011 for the Department of the Interior, Wednesday, March 3, 2010, archive webcast, minutes 39–41.35.

24. Bureau of Land Management, *Preliminary Report on BLM Lands Deserving Protection as National Conservation Areas, Wilderness, or Other Conservation Designations*, November 2011, [www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&pageid=267130](http://www.doi.gov/news/pressreleases/loader.cfm?csModule=security/getfile&pageid=267130) (accessed November 23, 2011).

25. Bureau of Land Management, “Salazar Highlights 18 Backcountry Areas Deserving Congressional Protection as Conservation Lands or Wilderness,” news release, November 10, 2011, [www.blm.gov/wo/st/en/info/newsroom/2011/november/NR\\_11\\_10\\_2011.html](http://www.blm.gov/wo/st/en/info/newsroom/2011/november/NR_11_10_2011.html) (accessed May 8, 2012).

26. The policy consisted of these components: (1) Secretarial Order 3310 “Protecting Wilderness Characteristics on Lands Managed by the Bureau of Land Management,” (2) Manual 6301 “Wilderness Characteristics Inventory,” (3) Manual 6302 “Consideration of Lands with Wilderness Characteristics in the Land Use Planning Process,” and (4) Manual 6303 “Consideration of LWCs for Project-Level Decisions in Areas Not Analyzed in Accordance with BLM Manual 6302.”

27. U.S. Department of the Interior, “Salazar Outlines Broad Opportunities for Common Ground on Wilderness,” press release, June 1, 2011, [www.doi.gov/news/pressreleases/Salazar-Outlines-Broad-Opportunities-for-Common-Ground-on-Wilderness.cfm](http://www.doi.gov/news/pressreleases/Salazar-Outlines-Broad-Opportunities-for-Common-Ground-on-Wilderness.cfm).

28. Bureau of Land Management, “Requirement to Conduct and Maintain Inventory Information for Wilderness Characteristics and to Consider Lands with Wilderness Characteristics in Land Use Plans,” Instruction Memorandum No. 2011-154, July 25, 2011, [www.blm.gov/wo/st/en/info/regulations/Instruction\\_Memos\\_and\\_Bulletins/national\\_instruction/2011/IM\\_2011-154.html](http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2011/IM_2011-154.html).

29. Bureau of Land Management, “Planning for Special Designations within the National System of Public Lands,” Instruction Memorandum No. 2009-215, September 21, 2009, [www.blm.gov/wo/st/en/info/regulations/Instruction\\_Memos\\_and\\_Bulletins/national\\_instruction/2009/IM\\_2009-215.html](http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-215.html) (accessed August 29, 2011).

30. Bureau of Land Management, “Interim Management Policy for New Components of the Bureau of Land Management’s National Landscape Conservation System designated through the Omnibus Public Land Management Act of 2009,” Instruction Memorandum No. 2009-226, September 30, 2009, [www.blm.gov/wo/st/en/info/regulations/Instruction\\_Memos\\_and\\_Bulletins/national\\_instruction/2009/IM\\_2009-226.html](http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2009/IM_2009-226.html) (accessed August 29, 2011).

31. Council on Environmental Quality, Executive Office of the President, “President Obama Announces Plan for Community-Based Conservation through the America’s Great Outdoors Initiative,” press release, February 16, 2011, [http://www.whitehouse.gov/administration/eop/ceq/Press\\_Releases/February\\_16\\_2011](http://www.whitehouse.gov/administration/eop/ceq/Press_Releases/February_16_2011) accessed Nov. 13, 2013.

32. The BLM moved the tourism program to the NLCS division in 2011.

33. Nationally, including all participating agencies and sites, in 2012, 175,000 volunteers worked at 2,206 sites in all 50 states, the District of Columbia, Puerto Rico, and Guam ([www.publiclandsday.org/about](http://www.publiclandsday.org/about)).

34. Bureau of Land Management, “Making a Difference: BLM’s 2012 Volunteer Annual Report,” 2013, [www.blm.gov/style/medialib/blm/wo/Law\\_Enforcement/nlcs/education\\_\\_interpretation/volunteers.Par.16531.File.dat/2012\\_Volunteer\\_Annual\\_Report.pdf](http://www.blm.gov/style/medialib/blm/wo/Law_Enforcement/nlcs/education__interpretation/volunteers.Par.16531.File.dat/2012_Volunteer_Annual_Report.pdf).

35. U.S. Department of the Interior and U.S. Department of Agriculture, *Guidance for Implementation of Federal Wildland Fire Management Policy*, February 2009, [http://www.nifc.gov/policies/policies\\_documents/GIFWFMP.pdf](http://www.nifc.gov/policies/policies_documents/GIFWFMP.pdf).

36. U.S. Department of the Interior, “Interior Withdraws Legally Flawed Plan for Oregon Forests, Presses for Sustainable Timber Harvests,” news release, July 16, 2009, [www.doi.gov/news/pressreleases/2009\\_07\\_16\\_release.cfm](http://www.doi.gov/news/pressreleases/2009_07_16_release.cfm).

37. Western Oregon Task Force, *Western Oregon Task Force: Final Report to the Secretary of the Interior* (July 22, 2010), 5.

38. *Ibid.*, 5-6.

39. *Ibid.*, 6. These mitigation measures require the BLM and the U.S. Forest Service to conduct surveys for certain rare or unusual species and manage habitat where they occur. Surveys can take up to 2 years.

40. *Pacific Rivers Council et al. v. Shepard*, 11-CV-442-HU (United States District Court, D. Oregon, Portland Division 2012).

41. Ken Salazar, Secretary of the Interior, letter to members of Congress, October 7, 2009, [www.blm.gov/pgdata/etc/medialib/blm/wo/Planning\\_and\\_Renewable\\_Resources/wild\\_horses\\_and\\_burros/salazar\\_proposals.Par.51495.File.dat/Salazar\\_Reid%20Letter.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Planning_and_Renewable_Resources/wild_horses_and_burros/salazar_proposals.Par.51495.File.dat/Salazar_Reid%20Letter.pdf) (accessed August 17, 2011).

42. U.S. Department of the Interior, Bureau of Land Management, *Proposed Strategy: Details of the BLM’s Proposed Strategy for Future Management of America’s Wild Horses and Burros*, February 28, 2011, [http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications\\_Directorate/public\\_affairs/news\\_release\\_attachments.Par.46571.File.dat/Proposed\\_WHBStrategy.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs/news_release_attachments.Par.46571.File.dat/Proposed_WHBStrategy.pdf).

43. The Cobell settlement was approved by Congress on November 30, 2010, (Claims Resolution Act of 2010) and signed by President Obama on December 8, 2010.

44. Statement of Jamie Connell, Acting Deputy Director, Bureau of Land Management, Department of the Interior, Senate Energy and Natural Resources Committee, Subcommittee on Public Lands, Forest, and Mining, S. 368, Federal Land Transaction Facilitation Act Reauthorization, April 25, 2013.

45. Bureau of Land Management, *Law Enforcement Year-End Review 2009* (Washington, DC: 2010), 1 and 27, [www.blm.gov/pgdata/etc/medialib/blm/wo/Law\\_Enforcement/law\\_enforcement.Par.8043.File.dat/LawEnYER09Web.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Law_Enforcement/law_enforcement.Par.8043.File.dat/LawEnYER09Web.pdf) (accessed April 10, 2012).

46. Bureau of Land Management, “Arrests Made in Operation Targeting Network Selling Stolen Native American Artifacts,” news release, June 10, 2009, [http://www.blm.gov/wo/st/en/info/newsroom/2009/june/NR\\_0510\\_2009.html](http://www.blm.gov/wo/st/en/info/newsroom/2009/june/NR_0510_2009.html)

47. Bureau of Land Management, *Law Enforcement Year-End Review 2011* (Washington, DC: 2012), 20, [www.blm.gov/style/medialib/blm/wo/Law\\_Enforcement/law\\_enforcement.Par.64775.File.dat/FY2011\\_YearEndReview.pdf](http://www.blm.gov/style/medialib/blm/wo/Law_Enforcement/law_enforcement.Par.64775.File.dat/FY2011_YearEndReview.pdf).

48. Bureau of Land Management, *Law Enforcement Year-End Review 2009* (Washington, DC: 2010), 11, [www.blm.gov/pgdata/etc/medialib/blm/wo/Law\\_Enforcement/law\\_enforcement.Par.8043.File.dat/LawEnYER09Web.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Law_Enforcement/law_enforcement.Par.8043.File.dat/LawEnYER09Web.pdf) (accessed April 10, 2012).

49. *Ibid.*

50. An Act for the establishment of a General Land-Office in the Department of the Treasury, April 25, 1812 (2 Stat 716). The act stated that the duties of the General Land Office Commissioner, under the direction of the Treasury Department (and after 1849 under the Department of the Interior) were: “to superintend, execute and perform all such acts and things, touching or respecting the public lands of the United States, and other lands patented or granted by the United States, as have heretofore been directed in law to be done or performed by the office of the Secretary of State, of the Secretary and Registrar of the Treasury, and of the Secretary of War, or which shall hereafter by law be assigned to the said office,” [http://www.blm.gov/ak/st/en/prog/cultural/ak\\_history/homesteading/homesteading\\_laws.print.html](http://www.blm.gov/ak/st/en/prog/cultural/ak_history/homesteading/homesteading_laws.print.html).

51. The number of acres continues to decrease as the BLM transfers lands, primarily through the Alaska land conveyance program.

52. Bureau of Land Management, *The BLM: A Sound Investment for America*, 2013. In 2011, BLM lands directly generated about \$63 billion and supported 674,210 jobs. About \$59 billion of that was from energy and mineral resources. The extraction of these resources and their introduction into the market boosted the American economy by \$126 billion. Timber, grazing, and recreation activities added \$9 billion for a total of \$135 billion in indirect economic output.



John Day River in Oregon.



Agua Fria National Monument in Arizona.

## Epilogue | The Bureau Looks to the Future, 2013 and Beyond

Although the BLM's roots go back to the establishment of the GLO in 1812, the agency and its mission are still relevant to the nation today, 200 years later, and as we look toward the future.

The BLM today is one of the taxpayers' best investments economically, and it contributes significantly to our quality of life. The BLM manages the public lands to provide America with working landscapes, offering exceptional recreational opportunities while providing essential services to communities. These public lands meet the energy, mineral, and recreational needs of the nation while assuring the sustainability and ecological health of our most precious cultural and natural resources.

The BLM's employees are its most valuable asset, and every day, they face making decisions that balance conservation with other uses of public lands. The BLM has developed a roadmap to guide our direction, called "Winning the Challenges of the Future," in which it identifies four principal goals:

**Think Big:** The BLM will manage across broad landscapes to tackle problems and issues at their natural scales, looking beyond geopolitical boundaries and working across jurisdictions to ensure healthy public lands and to provide their fullest social and economic value to the nation.

**Do It Right the First Time:** The BLM will adopt a "proactive and nimble approach to planning" to promote collaboration with partners, addressing issues at different scales, making decisions that readily address the rapidly changing environment and conditions, and ensuring that the BLM has a highly skilled workforce that reflects the public it serves.

**Be a Good Neighbor:** The BLM will respect that its land management decisions contribute to the stability of the communities that depend on public lands and waters for their income, identity, and well-being. The BLM will engage communities and partners to improve the quality and sustainability of resource management decisions.

**Work for America:** The BLM will recognize the full potential of the agency to contribute to the well-being of the nation and the quality of life enjoyed by its citizens. The BLM will also strive for an adaptive management approach and encourage employees to use flexibility, creativity, innovation, and partner-developed processes to address the challenges facing the BLM and the public it serves.

The BLM has a bright future. As an agency, we must continue to reach out to the nation's youth and young adults, educate them in citizen stewardship, and encourage them to enter public service to help other people, even those they don't know and those yet to be born. The challenges and opportunities to make a difference in public land management will continue, but by working as a team with partners and the public, the BLM will ensure that all Americans and future generations can use and enjoy the public lands—their national heritage.



McCoy Flat in Utah.



Menominee Recreation River in Wisconsin.

## Appendix | Directors of the Bureau of Land Management (Senate-Confirmed)\*



Fred W. Johnson  
1946–1948



Marion Clawson  
1948–1953



Edward Woolley  
1953–1961



Karl Landstrom  
1961–1963



Charles Stoddard  
1963–1966



Cy Jamison  
1989–1992



Jim Baca  
1993–1994



Pat Shea  
1997–1998



Tom Fry  
1998–2000



Kathleen Clarke  
2001–2006



Boyd Rasmussen  
1966–1971



Burt Silcock  
1971–1973



Curt Berklund  
1973–1977



Frank Gregg  
1977–1981



Robert F. Burford  
1981–1989



James Caswell  
2007–2009



Robert Abbey  
2009–2012



Neil Kornze  
2014–2017

\* Gaps were filled by acting directors appointed by the Secretary of the Interior.



Fall Creek Falls on the Snake River in Idaho.



Scenery along the Alpine Loop National Back Country Byway in Colorado.

## Index

Bolded page numbers indicate photographs only.

“202” wilderness study areas, 80  
 abandoned mines, 54, 118, 138, 141, 153  
 Abbey, Robert, 64, 82, 137, 141, **175**  
 Abel, Mike, 81  
 access  
   data, 70, 109, 123, 143, 158  
   public land, 19, 31, 67, 79, 102, 113, 150, 159, 168  
   roads and trails, 20, 112, 113, 149, 164  
 Adobe Town Wilderness Study Area, WY, **ii–iii**  
 adoptions, wild horses and burros, 38, 39, 64, 107, 152, 159  
 Advisory Council on Historic Preservation, 59, 109  
 affordable housing projects, 118  
 Agricultural Research Service, 104  
 Agua Fria National Monument, AZ, **173**  
 Alaska  
   archaeology, 57–58  
   energy management, 23–24, 26, 65, 87, 138  
   land transactions, 22, 27, 28, 116  
   law enforcement, 119  
   National Petroleum Reserve, 65, 87, 138  
   paleontology, 110  
   rivers, 55

trails, 149, 151  
 wildfire, 83  
 Alaska Federation of Natives, 116  
 Alaska Fire Service, 1  
 Alaska Land Transfer Acceleration Act, 116  
 Alaska Lands Act, 22  
 Alaska National Interest Lands Conservation Act, 87, 116  
 Alaska Native Allotment Act, 116  
 Alaska Native Claims Settlement Act, 22, 28, 116  
 Alaska Native Corporations, 28  
 Alaska Pipeline Office, 24  
 Albietz, Judy Kammins, 28  
 Alder Creek, CO, 51  
*Allosaurus* fossils, 57, 110  
 Allred, Stephen, 131  
 Alpine Loop National Back Country Byway, CO, **177**  
 American Farm Bureau Federation, 106  
 American Forest Foundation, 60  
 American Forest Resource Council, 96  
 American Recovery and Reinvestment Act (Recovery Act), 94, 137–138, 139, 140  
 American River, 17  
 America’s Great Outdoors initiative, 150, 152  
 “America’s Priceless Heritage,” 109



Anasazi Heritage Center (Canyons of the Ancients Visitor Center and Museum), CO, 59

Ancestral Puebloans, 59, 115, 165

ANCSA Conveyance Division, 28

Anderson, Bob, 66

Anderson, Carol, 50

Andrus, Cecil D., 22, 33

Animal Liberation Front, 108

antifederal groups, 72

Antiquities Act, 22, 30, 63, 75, 77, 110

Anza Trail Coalition, 56

*Apatosaurus* fossils, 117

Appraisal Foundation, The, 114

appraisals of land value, 114

aquatic conservation strategy, 53

Aquatic Nuisance Species Task Force, 101

Aquila Power, 96

Archaeological Resources Protection Act, 15

archaeology, 15, 57–59, 119, 147, 165

Arctic National Wildlife Refuge, AK, 87

areas of critical environmental concern, 4, 16, 79, 161, 162, 163

Arizona

- habitat protection, 13, 51, 102
- land transactions, 29, 115
- law enforcement, 34, 165–166
- mining, 141
- paleontology, 111
- recreation, 19
- renewable energy, 92, 93, 94
- tribal consultation, 126
- value of public lands, 167
- volunteers, 56
- wilderness areas, 115
- wildfire, 84

Armstrong, Bob, 63

Arndorfer, Robert, 28

Arnold, Robert, 28

arson, 120

Ascherfeld, Sheri, 156

assessments. *See also* assessment, inventory, and monitoring (AIM)

- habitat, 53, 99

- Interior Columbia Basin, 47, 48

assessment, inventory, and monitoring (AIM)

- Great Basin Restoration Initiative, 82
- rangeland, 158
- technological advances, 123–124

Association of O&C Counties, 96

Atigun River, AK, 75

Audubon Society, 13

aviation, 36, 122

Babbitt, Bruce

- oil and gas leasing, 87
- conservation lands, 75, 76, 77, 144
- ecosystem management, 42
- mining reform, 66
- rangeland management, 11, 49, 50, 105, 106
- rights-of-way, 164
- Utah wilderness reinventory, 80

Baca, Jim, 175

Back Country Byways, 54

bald eagle, 162

barred owl, 97

Basin and Range National Monument, NV, x

Bate, Allan, 60

Battlement Mesa Forest Reserve, CO, 31

Baucus, Max, 110

Bauer, Larry, 25

Bear Creek, OR, 10, 12

Bear Trap Canyon, MT, 21

Beaver, David, 115, 162–163

Beckwith, Sarah, 39

Benefield, Mike, 44

Berklund, Curt, 31, 174

Berkowitz, Paul D., 33

Bibles, D. Dean, 9

Big Al (fossil), 57, 110

Big Morongo Canyon Preserve, 52

bighorn sheep, 13

Bills, Thomas, 100

biomass energy, 95–96

Bird, Lola, 86

Bisti Beast (fossil), 58

Bisti/De-Na-Zin Wilderness, NM, 58

Black Rock Desert, NV, 122, 151

black-footed ferret, 51

Boatner, Tom, 83, 84

Boise District lands, ID, 130

Boise Interagency Fire Center, 36

Boise State University, 14, 51

Bolt, Jeannie, 39

Bone Cabin Quarry, WY, 117

bonytail chub, 102

border safety, 165–166

Boyd, David, 91

Boyd-Peak, Kari, 85

Brady, Ray, 140

Breithaupt, Brent, 57, 117

Brigham Young University, 147

“Bring Back the Natives,” 51

Bronczyk, Stan, 28

Brong, Elaine, 95

Brown, Gloria, 46

Bryant, Laurie, 117

buffelgrass, 84

bull trout, 53

bullfrog, 101

Bumpers, Dale, 26

Bureau of Indian Affairs, 25, 116, 160

Bureau of Land Management (BLM)

- communications, 50, 160
- data management, 123–124
- history, ix, 1–2, 30–31, 168
- landscape approach, 99, 100, 131, 141–142, 143, 153
- multiple use management, ix, 1–2, 3–4, 17, 127, 130
- organizational structure, 130
- planning, 3–6, 123–125, 132, 148, 153
- sustained yield, 2, 3–4, 7, 45
- workforce changes, 2, 9, 25, 75, 77, 132
- workforce diversity, 33, 46, 81, 127–129, 137, 157
- workforce goals, 173
- workforce training, 62, 128

Bureau of Ocean Energy Management, Regulation and Enforcement, 127

Burford, Robert F., 11, 38, 174

Burning Man festival, 122, 151

Bush, George H.W., 34, 61

Bush, George W., 66, 75–76, 87, 95, 109, 140, 152

Bush Dome, TX, 67

Butz, Earl, 36

Cacophony Society, 122

Cactus Cliff, CO, 113

Cadastral Indian Program, 116

cadastral surveys, 57, 70, 86, 116, 137, 160

Cahuilla Band of Indians, 126

Calamaio, Chip, 50

California

- conservation, 7–8, 13, 45, 102
- forests and timber, 96–97
- land transactions, 29, 161, 162, 163
- law enforcement, 32, 33, 34, 119, 121
- recreation, 19
- renewable energy, 66, 92, 93, 94, 140
- trails, 80
- tribal consultation, 126
- wilderness designations, 76
- wildfire, 37, 86

California Coastal National Monument, 161

California condor, 13, 51

California Desert Conservation Area

- creation, 5, 61
- law enforcement, 30, 32, 33
- National Landscape Conservation System, 144
- recreational area designation, 17
- volunteers, 56
- wilderness inventory, 20

California Energy Commission, 66

Camfield, Daniel, 31

Campbell, Mike, 36

Canyons of the Ancients National Monument, CO, 114, 115, 136, 147, 161

carbon dioxide sequestration, 142

Carrigan, Tim, 14

Carrizo Creek, NM, 51

Carter, Jimmy, 8, 19, 22

Cascade-Siskiyou National Monument, OR, 56, 161

Casias, Robert, 70

Caswell, James, 92, 109, 130, 131, 132, **175**  
cattle. *See* rangeland management  
Cave Research Foundation, 16  
caves, 16  
Centennial Hills Park, NV, **71**  
Center of the American West, 144  
Cerberus Action, 165  
Challenge Cost Share, 13, 51  
Charlie, Danny, 127  
cheatgrass, 35, 82, 84, 155  
Chicago Botanic Garden, 103  
Chihuahuan Desert, 84  
Childs, Craig, 144  
China, 141  
Chinn, Ramona, 116  
Christensen, Todd, 50  
Christmas Mine, AZ, **94**  
Civish, Bill, 56  
Clark, William, 11, 26  
Clark County Conservation of Public Lands and Natural Resources Act, 76  
Clarke, Kathleen, 80, 95, **175**  
Classification and Multiple Use Act, 17, 127  
Clawson, Marion, 2, 11, **174**  
Clean Air Act, 6  
clean energy. *See* renewable energy  
Clean Water Act, 6  
Clearwater River, ID, 54  
Cleveland-Lloyd Dinosaur Quarry, UT, 110, 111  
Clifford, Frank, 49  
Cliffside Gas Field, TX, 67  
climate change, 65, 82, 92, 141–143  
Clinton, Bill  
    climate change plan, 65  
    ecosystem management, 44, 47  
    Grand Staircase-Escalante National Monument, UT, 63  
    mining reform, 66  
    National Landscape Conservation System (NLCS), 75  
    tribal consultation, 126  
    weed control, 54  
Clover Creek, ID, 51–52  
coal production, 23–26, 89, 92, 141

Cobb, Klaus, **56**  
coho salmon, 162  
collaborative planning, 145  
Colorado  
    conservation, 13, 51, 78, 98  
    cultural resources, 115  
    energy management, 26, 90, 91, 92  
    interpretive areas, 59  
    land acquisitions, 115  
    paleontology, 110, 113  
    recreation, 17, 113  
    value of public lands, 167  
    wildfire, 68  
Colorado Mesa University, 78  
Colorado Plateau, 51, 143  
Colorado River, 13, 19, 51–52, 54  
Colorado squawfish, 13  
Columbia River Basin, 42, 47–48, 53  
Columbia spotted frog, 14  
Colville River, AK, 110  
Community Partnerships Directorate, 152  
Congressional Western Caucus, 148  
Connell, Jamie, 91  
*Conner v. Burford*, 27  
Conservation and Land Management Internship Program, 103  
Conservation Division, 25  
Conservation Fund, 115  
Conservation Fund, The, 161, 163  
conservation lands, 55, 75–81, 110, 144–149, 152, 162–163  
Conservation Lands Foundation, 78  
Consumnes River Preserve, CA, 51  
Continental Divide National Scenic Trail, **iv–v**  
continental rifts, 18  
controversies and conflicts  
    collaborative problem-solving, 145  
    Grand Staircase-Escalante National Monument, UT, 63  
    hazardous fuels, 95  
    mining, 66, 141  
    motorcycle race closure, 71  
    northern spotted owl, 8, 42, 43, 97  
    oil and gas production, 27, 87, 88, 89, 90, 138

rangeland management, 9, 106  
renewable energy, 93  
rights-of-way, 163, 164  
timber production, 8, 43, 96–97, 157  
wild horse slaughter, 63–64  
Cook, Lori, 102  
Coquille Indian Tribe, 97  
Corn Springs Campground, CA, **137**  
county sheriffs, 118–119, 122  
Crapo, Mike, 145  
Crescent Dunes Solar Energy Project, NV, **139**  
crime. *See* law enforcement  
Crouse, Mike, 53  
Crucial Habitat Assessment Tool, 153  
cultural resources, 15–16, 57–60, 63, 109–111, 115, 165  
cutthroat trout, 51, 53, 91, 162  
data management, 123–124  
Dawson, Bruce, 79  
Deep Creek Mountains Wilderness Study Area, UT, **80**  
*Deinosuchus* fossils, 111  
Delta River, AK, **101**  
democracy and conservation, 168  
Deschutes River, OR, **20**  
Desert Land Act, 1  
Desert National Wildlife Refuge, 118  
desert pupfish, 51  
“Desert Renewable Energy and Conservation Plan,” 126, 140  
Desert Sunlight Solar Farm, CA, **140**  
desert tortoise, 13, 71, 140  
DesGeorges, Sam, 18  
dinosaur fossils, 57–58, 59, 110, 111, 117  
Disabled Sports USA, 150  
Dishpan Butte Herd Management Area, WY, **159**  
Division of Environmental Education and Volunteers, 61  
Doherty, Kevin, 100  
Dombeck, Mike, 42, 50, 53, 130  
Dominguez Canyon Wilderness, CO, 78  
Dominguez-Escalante National Conservation Area, CO, 78  
Dominguez-Escalante Trail, CO, 17  
Douglas Forest Protective Association, 44  
Douglas Point Special Recreation Management Area, MD, **41**

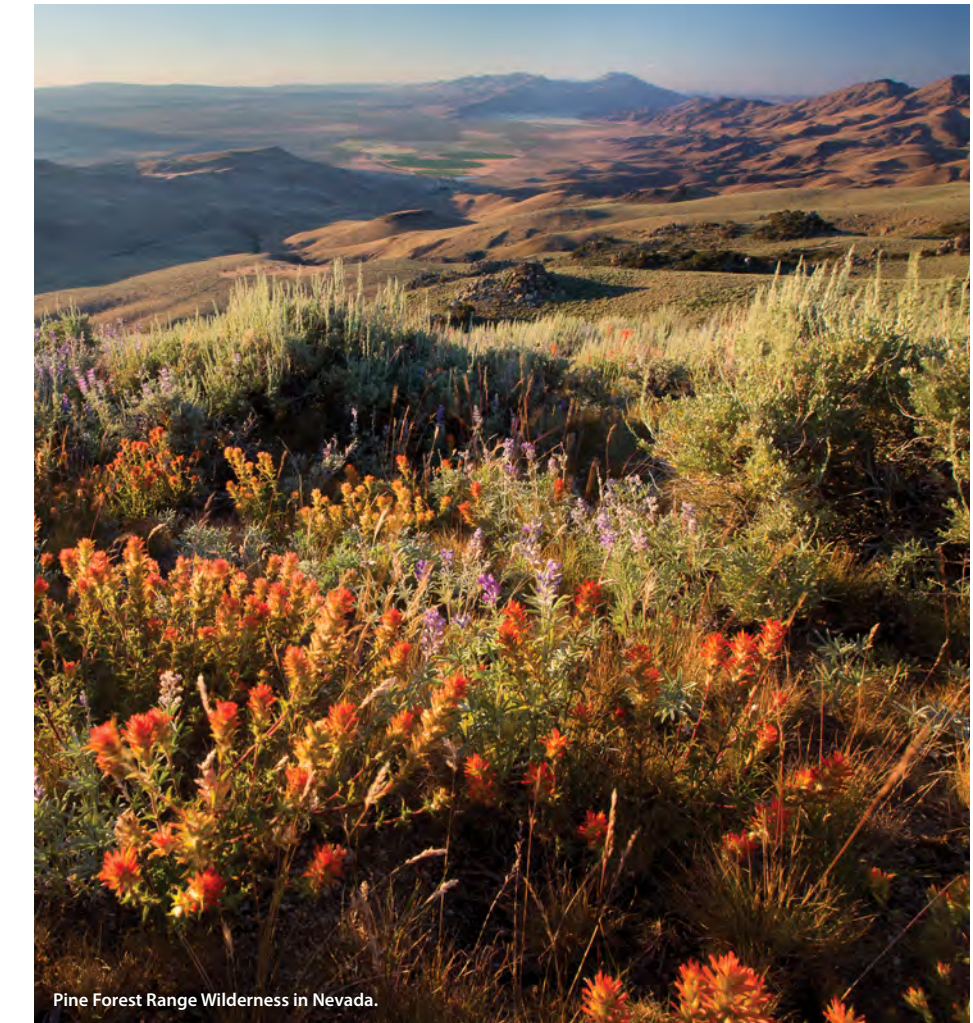
Dreier, Gary, 50  
drought, 68, 83, 94, 107, 123, 158  
Drucker, J.D. “Sam,” 117  
drug enforcement, **33**, 34, 165–166  
Drury, William, 31  
Dukes, Melissa, 127  
Durland, Pat, 37  
Earth First! 8, 43  
Earth Liberation Front (ELF), 108  
Earthjustice, 90, 164  
Eastern States, 26, 79, 130  
Eastside Ecosystem Coalition of Counties, 48  
Eaton, Marietta, 147  
Ebner, Joel T., 89  
economic value of public lands, 166, 167  
ecosanctuaries, 159  
ecosystem management, 41–45, 47– 49, 51–52, 141–142  
“Ecosystem Management in the BLM: From Concept to Commitment,” 43  
educational programs and resources, 58–59, 60, 147, 152  
El Camino Real de Tierra Adentro National Historic Trail, NM, 56  
El Malpais National Conservation Area, NM, 19, **76**  
elk, 13  
Elmore, Wayne, 10, 12, 42, 53  
Endangered Species Act  
    conservation before listing, 51  
    enactment, 6  
    habitat protection, 12  
    Healthy Forests Initiative, 95  
    listed species, 13–14, 43, 44, 71, 79, 154, 163  
    O&C lands, 96, 97, 157  
    rangeland management, 106  
    Recovery Fund, 154  
    restoring populations, 13  
Endangered Species Committee, 43  
Endangered Species Recovery Fund, 154  
energy management  
    climate change considerations, 65  
    energy independence, 23–24, 87, 138  
    mining reform, 66  
    oil shale, 26, 91, 92, 138  
    permits, leasing and royalties, 24–27, 88, 90

Powder River Basin resurvey, 89  
renewable energy, 66, 92, 94, 138–140  
rights-of-way, 92, 94  
Roan Plateau resources, 91  
Energy Policy Act, 88, 90, 92–93, 127, 131, 140  
Energy Policy and Conservation Act, 23, 88  
Energy Security Act, 26  
“Enhancing Renewable Energy Development on the Public Lands,” 93  
environmental and conservation groups  
collaborative work, 56, 145, 161  
forestry concerns, 8, 43, 47, 97, 157  
grazing permits, 49  
oil and gas concerns, 23–24, 87  
protest actions, 8, 43  
rights-of-way concerns, 164  
violence, 108  
Environmental Education Division, 60  
environmental impact statements (EIS)  
ecosystem management, 47, 48  
energy management, 23–24, 27, 92  
forest management, 7–8  
land use planning, 124  
rangeland management, 9  
renewable energy, 94, 137, 140  
riparian areas, 53  
vehicle management, 19  
Environmental Protection Agency (EPA), 45, 48, 54  
Environmental Quality Incentives Program, 98  
ePlanning, 124  
erosion, 10, 12, 52, 145  
Ervine, Gene, 55  
Evans, Kevin, 122  
Exxon, 26  
“Facilitation of Cooperative Conservation,” 152  
“Fair Market Value Policy for Federal Coal Leasing,” 26  
Faithful, Bob, 28  
Falise, Roxanne, 100  
Fall Creek Falls, ID, **176**  
Favorite, Christy, 116  
Federal Aviation Administration, 122  
Federal Bureau of Investigation (FBI), 31, 108, 120, 165

Federal Caucus, 101  
Federal Cave Resources Protection Act, 16  
Federal Coal Leasing Amendments Act, 24  
Federal Ecosystem Management Analysis Team (FEMAT), 42  
Federal Geographic Data Committee (FGDC), 70  
Federal Interagency Committee for the Management of Noxious and Exotic Weeds, 54  
Federal Land Policy and Management Act (FLPMA)  
conservation, 5, 12, 13, 42, 106, 146  
cultural resources, 15  
effect on workforce, 127  
enactment and early response, 2, 3, 6, 7, 11  
inventories, 20, 148  
land transactions, 27, 29, 116  
law enforcement, 31, 32  
rights-of-way, 164  
value of public lands, 168  
wilderness study areas, 61, 63, 80  
Federal Land Transaction Facilitation Act (FLTFA), 114, 115, 161, 162  
Federal Lands Recreation Enhancement Act, 113  
Federal Oil and Gas Royalty Management Act, 24  
Federal Onshore Oil and Gas Leasing Reform Act, 26–27  
“Federal Wildland Fire Management Policy and Program Review Final Report,” 69  
Fehlau, Robin, 145  
Finfer, Larry, 114  
fire management  
crime, 108, 120  
equipment and technology, 35, 85, 86, 156  
habitat protection, 154  
history, 34–37  
increase in wildfires, 82–84  
landscape restoration, 82, 104  
multiple objectives guidelines, 155  
multiple objectives policy, 155  
prescribed burn, 157  
safety concerns, 68–69, 156  
training, 36, 44, 156  
wildland-urban interface, 37, 95  
Yellowstone National Park, 37  
firearms, 33, 34

“Fish and Wildlife 2000: A Plan for the Future,” 13, 14, 51  
Fish Lake, OR, 17  
fish management, 12–14, 42, 51–53, 162  
fishing, 19, 54, 63, 76, 101, 102, 151, 162  
Flathead National Forest, MT, 27  
Fleming, Steve, 16  
Florida, 37, 79  
Fluer, Scott, 39  
Fontana, Joseph, 108  
Foote, Jim, 62  
Forest Ecosystem Management Assessment Team, 44  
forest management, 7–8, 31, 43–45, 95–97, 157, 162  
Forest Management Act, 31  
Forest Reserves, 31  
Fort Chaffee Military Reservation, 26  
Fort Egbert, AK, 55  
Fort Ord National Monument, CA, **i**, 149  
Fort Stanton-Snowy River National Conservation Area, NM, 16, 147  
Fortymile Wild and Scenic River, AK, 55  
fossils, 57–59, 110–111, 113, 119  
“Fossils on Federal and Indian Lands,” 110  
Frandsen, Ed, 11  
Freudenthal, David, 99  
Friends of Red Rock Canyon, 56  
Friends of the Desert Mountains, 56, 163  
Fry, Tom, 77, **175**  
Gallatin National Forest, MT, 27  
Gandiaga, Kyle, 120  
Garden Park Fossil Area, CO, 113  
Garnet Winter Trail, MT, 19  
General Land Office (GLO), ix, 1–2, 11, 30–31  
General Mining Act, 66  
Geographic Coordinate Data Base, 70, 86  
geographic information system (GIS), 70, 86, 97, 111, 123, 158  
geothermal energy, 132, 139  
Gerard, Larry, 100  
Gerber Stew Project, 96  
Ghost Dancer, 34  
Gila River, AZ, 13  
Gila topminnow, 51

Glenn, John, 68  
global positioning system (GPS), 60, 70, 156  
global warming (climate change), 65, 82, 92, 141–143  
Goat Well erosion control structure, AZ, 137  
Gold Belt Scenic Byway, CO, 113  
gold rush, 55  
Goldbach, Mark, 112  
Goodbar, James, 16  
Gooseberry Mesa National Recreation Trail, UT, **xi**  
Grand Canyon National Park, AZ, 141  
Grand Gulch Primitive Area, UT, 33



Pine Forest Range Wilderness in Nevada.

Grand Staircase-Escalante National Monument, UT

- controversy, 63, 73
- educational resources, 60, 77, 147
- establishment, 63, 72–73
- jurisdiction of the BLM, 77
- paleontology, 111
- roads, **164**
- symposiums, 63, 147
- volunteers and friends, 56

Grand Staircase-Escalante Partners, 56, 60

Grazing. *See also* rangeland management

- districts, 1, 9
- fees, 1, 11, 49
- public lands, 2, 4, 9–10, 12, 29, 49, 51–52, 53, 63, 76, 77, 140, 145, 167, 168
- rangeland health, 9–10, 12, 38, 50, 98, 105–107, 158
- reforms, 49, 105–107
- Taylor Grazing Act, 1, 9–10, 12

Grazing Service, ix, 1, 11, 31, 127, 168

Great Basin Fire Center, ID, 36

“Great Basin: Healing the Land, The,” 82

Great Basin Native Plant Selection and Increase Project, 82

Great Basin Restoration Initiative, 82, 84, 99

Great Kiva, CO, 136

Great Outdoor Museum, 57–59

greater sage-grouse, 51, 82, 99, 100, 140, 154

Green River Formation, 92

greenhouse gas emissions, 65, 142

Gregg, Frank, 6, **174**

Grey, Zane, 115

Griffith, Marty, 117

Gros Ventre Range, WY, **39**

ground-water resources, 16

*Gryposaurus monumentensis* fossils, 111

Guadalupe National Back Country Byway, NM, **54**

Gunnison Gorge National Conservation Area, CO, **75**

habitat protection

- aquatic habitat, 12–14, 51–53, 101–102, 162
- Arctic National Wildlife Refuge, 87
- ecosystem management, 42–43
- forests, 8, 43, 96–97, 162
- landscape approach, 99–100, 153–154

hadrosaur fossils, 111

*Hagryphus giganteus* fossils, 111

Hahn, Martha, 47

Hale, Tom, 117

Hall, Tex, **129**

Hamilton, Larry, 50

Hansen, Jim, 64

Hanson, Dale, 117

Harvey, Larry, 122

Hassett, Terry, 28

Hastey, Ed, 33, 72

hazardous fuels reduction, 95, 96

*Headwaters, Inc. v. Bureau of Land Management*, 96

Headwaters Forest Reserve, CA, 162

Healthy Forests Initiative, 95

Healthy Lands Initiative, 97–98, 132

helium, 67

Hellebust, Kane, **89**

Hells Canyon Wilderness, AZ, **64**, 114, 115

Herrera, Theresa, 18

Hesse, Mark, 113

Hester, Pat, 58

Hodel, Donald, 164

Holdren, Jeff, 164

Holtzman, Susan, 42

Homestead Act, 1

horses and burros, wild, 38–39, 63–64, 107–108, 158–160

Hovenweep National Monument, CO, 115

Howard Hughes Corporation, 56

Howell, David O., 151

Hughes, Jim, 114

Hummel, Buzz, 16

Humphrey, Cathy, 48

Hunsaker, Dave, 56

hunting, 14, **17**, 39, 63, 76, 77, 91, 151, 159, 168

Hurshman, Tom, 93

Ickes, Harold, 1

Idaho

- collaborative planning, 124, 145
- habitat protection, 13, 47, 51–52
- Healthy Lands Initiative, 98

land acquisitions, 162

law enforcement, 120

recreation, 19, 54

weed demonstration areas, 54

wildfire, 82, 84

Idaho Conservation League, 106

Idaho Department of Fish and Game, 14

Idaho Outfitters and Guides Association, 145

Iditarod National Historic Trail, AK, 149, 151

immigration enforcement, 165–166

Imperial Sand Dunes Recreation Area, CA, **71**, 119, 121, 151

Incident Command System, 36, 84, 121, 159–160

Incident Remote Automatic Weather Station, 156

Indian Land Surveyor Program, 116

Indian River, FL, 79

Indian tribes and people

- Blackfeet Tribe, 129, 160
- BLM employees, 127, 129
- Cahuilla Band of Indians, 126
- Columbia River Basin, 48
- Coquille Indian Tribe, 97
- cultural resources, 59, 109, 165
- Jupiter Inlet, FL, 79
- land transactions, 28, 116
- Northwest Forest Plan, 97
- Owyhee Canyonlands, ID, 145
- royalties, 160
- Shoshone-Paiute Tribe, 145
- tribal consultation, 109, 126, 129

InFish, 42

Intergovernmental Panel on Climate Change, 65

Interior Columbia Basin Ecosystem Management Project, 42, 47, 48, 53

interpretive areas and centers, 17, 56, 59, 81

“Intrigue of the Past: Investigating Archaeology,” 59

invasive species

- animal species, 97, 101
- Healthy Lands Initiative, 98
- plant species, 84
- Recovery Act, 137
- weed demonstration areas, 54
- wildfire risk, 35, 82–84, 155

inventories. *See also* assessment, inventory, and monitoring (AIM)

- fish and wildlife, 12
- FLPMA mandates, 4
- rangeland, 49
- wild horses and burros, 38
- wilderness, 20–21, 80, 148

Ironwood Forest National Monument, AZ, 165

Irvine, Amy, 144

Jackson, Henry, 22

Jackson, William Henry, 115

Jackson’s Castle, CO, 115

James, Jerry, 122

Jamison, Cy, 19, 43, 49, 58, **175**

Jarbidge Wild and Scenic River, ID, **145**

Jefferson, Thomas, 30

Jenny Creek, OR, 51–52

John Day River, OR, **172**

Johnson, Ann, 28

Johnson, Fred W., 2, **174**

Johnson, Walter, 34

Johnson Canyon Area of Critical Environmental Concern, CA, 161

Joint Fire Science Program’s SageSTEP Project, 82

Jones, Robert A., 41

Jones, Robert E., 47

Juan Bautista de Anza National Historic Trail, AZ, 56

Juen, Jesse, 98

juniper, 35, 82, 84, 86, 115

Jupiter Inlet Lighthouse Outstanding Natural Area, FL, 79

K-9 officers, 34, 71

Kaiparowits Plateau, UT, 111, 147

Kampschorr, Beth, 60

Kansas, 39, 67

karst areas, 16

Kasha-Katuwe Tent Rocks National Monument, NM, **150**

Keeler, Kevin, 149

Kelley, Clarence, 31

Kempthorne, Dirk, 93, 97–98, 131, 140

Kenna, James G., 126

Kennedy, John F., 2, 30

Kew Royal Botanic Gardens (UK), 103

King Range National Conservation Area, CA, 17, 61, 162

King Range Wilderness, CA, 76  
 Klondike gold rush, 55  
 Kohler, Richard, 57  
 Kornze, Neil, **175**  
*Kosmoceratops* fossils, 111  
 Krug, J.A., 2  
 Kuizon, Lucia, 110  
 Kvale, Erik, 58  
 Laguna Seca Special Management Area, NM, 51  
 Lahontan cutthroat trout, 51, 53  
 Lake Havasu, 102  
 Lake Mead National Recreation Area, 118  
 Lake Tahoe, 118  
 land acquisitions, 115, 160, 161, 162–163  
 Land and Water Conservation Fund, 115, 161, 162–163  
 land exchanges, 19, 29, 52, 56, 71, 114, 160, 163  
 land use planning  
   California Desert Conservation Area, 5  
   changes, 41, 123–125, 132  
   development, 3–4  
   energy, 94, 140  
   forests, 8, 43  
   Interior Columbia Basin, 47, 48  
   landscape approach, 143  
   National Landscape Conservation System, 76, 77, 80, 148  
   rangeland, 10  
   sage-grouse, 100, 154  
   travel management, 112, 163  
 “Land Use Planning for Sustainable Resource Decisions,” 123  
 landscape approach, 99, 100, 131, 141–142, 143, 153  
 landscape conservation, 55, 75–81, 110, 144–149, 153, 162  
 Landstrom, Karl, **174**  
 Las Cienegas National Conservation Area, AZ, 52, 167  
 Law, John, 122  
 law enforcement  
   border control, 165–166  
   history, 30–34  
   investigations, 27, 108, 119, 120, 121, 145, 165  
   K-9 officers, 34, 71  
   local partners, 118–119, 121, 122  
   public relations efforts, 72–73

standards development, 71–72  
 women rangers, 33  
 “Law Enforcement General Orders,” 72  
 Leadership Excellence Program, 128  
 “Learning Landscapes,” 60  
 Lee, John P., 57, 117  
 Lee Metcalf Wilderness, MT, 21  
 Leopold, Aldo, 42, 82  
 Leshy, John D., 7, 71, 77  
 lesser prairie-chicken, 98, 163  
 Let’s Move Outside initiative, 150  
 Lewis, Jerry, 34  
 Lewis and Clark National Historic Trail, MT, 114  
 Limerick, Patricia Nelson, 144, 168  
 Lindsey, Robert, 33  
 Linowes Commissions, 24, 25, 26  
 Litchfield Wild Horse and Burro Corrals, CA, 108  
 litigation  
   forest management, 95, 96, 97, 157  
   Grand Staircase-Escalante National Monument, UT, 63  
   oil and gas leasing, 27, 90  
   rangeland management, 9, 106  
   rights-of-way, 164  
 Little Jacks Creek Wilderness, ID, **20**  
 Little Owyhee River Canyon, OR, **53**  
 livestock. *See* rangeland management  
 Lonnie, Tom, 26, 27  
 Lost Creek rock shelter, NV, **56**  
 low impact land use, 62  
 Lowry Pueblo, CO, **136**  
 Loxahatchee River, FL, 79  
 Lujan, Manuel, 43  
 Mack, Rebecca, 130  
 Maguire daisy, 154  
 Mammoth Lakes, CA, **132**  
 “Managing the Impacts of Wildfire on Communities and the Environment,” 82  
 “Managing the Public Rangelands,” 10  
 manatee, 79  
 “Manual of Survey Instructions,” 160  
 Marble Creek Trail, ID, 19  
 marbled murrelet, 162

Mardikian, Leonard, **89**  
 Martin, Steven, 30–31  
 Marys River, NV, 51  
 Mathias, Bob, 30  
 McCoy Flat, UT, **172**  
 McLane, Dennis, 32  
 McVee, Curtis, 28  
 Mead, Matt, 154  
 Mecca Hills Wilderness, CA, **62**  
 medusahead, 84  
 Mendiola, Carlos, 35  
 Menominee Recreation River, WI, **174–175**  
 Merchant, Kim, **81**  
 Merchant, Rachel, **81**  
 Meridith, Denise, 128  
 Mesa State College, CO, 78  
 Meserve, Dave, **89**  
 mesquite treatment, 98  
 Mexico–U.S. border, 165–166  
 Michigan, 37  
 Mikel, Michael, 122  
 Milanovich, Richard, 126  
 Milford Flat Fire, 84, 86  
 military personnel and veterans, 150, 157  
 Miller, Erika, 127  
 minerals and mining  
   coal, 23–26, 89, 92, 141  
   helium, 67  
   millsite policy, 66  
   mine cleanup, 54, 138, 141  
   permits, leasing and royalties, 24–27, 88, 90, 138  
   rights-of-way (ROW), 92, 94, 164  
   uranium, 141  
 Minerals Management Service, 24, 25, 127  
 minimum impact land use, 62  
 mission, BLM, 2, 3–4, 47, 75, 126, 127, 130, 132, 146, 151, 173  
 Missouri River, 17  
 Mizpah-Pumpkin Creek Grazing District, MT, 1  
 Monite Explosives Factory, NV, 54  
 monitoring. *See also* assessment, inventory, and monitoring (AIM)  
   habitat, 132

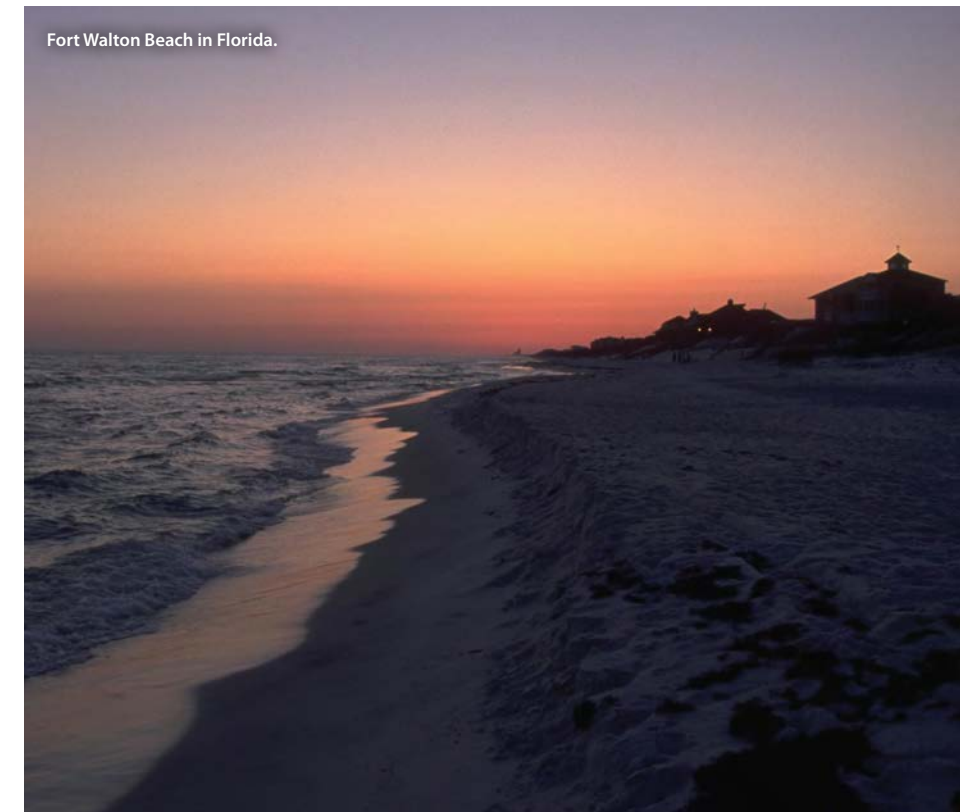
Milford Flat rehabilitation, 86  
 Montana  
   Garnet Winter Trail, 19  
   Interior Columbia Basin, 47  
   land acquisition, 114  
   oil and gas leasing, 27  
   riparian-wetland management, 51  
   weed management, 54  
 Montana State University, 57  
 Morley Nelson Snake River Birds of Prey National Conservation Area, ID, 56  
 Mormon Trail, 81  
 Morton, Rogers C.B., 4, 36  
 Mosher, Elaine, 127  
 motorized vehicle management, 19, 30–31, 71, 112, 119, 145  
 Muddy Creek, WY, 51–52  
 Muddy Mountain Environmental Education Area, WY, **95**  
 Muddy Mountains and Parsnip Peak Wilderness, NV, 76  
 Muller, Kit, 142, 143  
 multiple use  
   ecosystem integration, 42  
   land use planning, 3, 6, 17, 123  
   management of public lands, ix, 2, 3, 6, 7, 27, 91, 93  
   mission, 2, 3–4, 16, 75, 127, 130, 132  
   National Landscape Conservation System, 63, 77  
 Mur, Joel, 56  
 Murkowski, Lisa, 116  
 Murphy, Tim, 83  
 Murphy Complex Fire, 82, 83, 84  
 Museum of Northern Arizona, 111  
 Museum of the Rockies, 57  
 Mygatt-Moore Quarry, CO, 110  
*Mymoorapelta* fossils, 110  
 Nardinger, Joe, 119  
 National Academy of Sciences, 110, 158–159  
 National Association of State Foresters, 36  
 National Cave and Karst Management Symposia, 16  
 National Conference of State Historic Preservation Officers, 59  
 national conservation areas (NCAs), 16, 77, 78. *See also specific areas*  
 National Conservation Lands. *See* conservation lands  
 National Energy Policy, 94

National Energy Policy Development Group, 87–88  
National Environmental Policy Act (NEPA)  
ecosystem management, 42, 53  
enactment, 6  
energy management, 88  
energy projects, 23–24  
environmental groups, 90  
land use planning, 124–125  
rangeland management, 106  
National Fire Plan, 83–84  
National Fish Habitat Initiative, 101  
National Forest Management Act, 43  
National Guard, 34  
National Helium Reserve, 67  
National Historic Landmarks, 59  
National Historic Oregon Trail Interpretive Center, OR, 56, 59  
National Historic Preservation Act, 15, 109, 126  
National Historic Trails Interpretive Center, 81  
National Integrated Land System, 70  
National Interagency Fire Center, 36, 68, 82  
National Invasive Species Council, 54  
National Landscape Conservation System (NLCS), 55, 75–81, 110, 144–149, 152, 162  
National Law Enforcement Office, 71  
“National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands,” 112  
National Marine Fisheries Service, 12, 45, 48, 95, 97  
National Mining Association, 141  
national monuments  
Agua Fria, AZ, 172  
California Coastal, 161  
Canyons of the Ancients, CO, 114, 115, **136**, 147, 161  
National Landscape Conservation System, 77  
National Outdoor Leadership School, 62  
National Park Service (NPS)  
caves, 16  
cultural resources, 63  
fire management, 36, 37  
jurisdiction over monuments, 77  
land transactions, 29, 114, 115, 118, 162  
National Wilderness Preservation System, 20

paleontology, 110  
Public Lands Act, 144  
National Petroleum Reserve–Alaska, 65, 87, 138  
National Public Lands Day, 60–61, 153  
National Register of Historic Places, 59  
National Research Council, 70  
National Resources Defense Council, 7  
National Riparian Service Team, 42, 53  
“National Scenic and Historic Trails Strategy and Work Plan,” 80  
National Science Foundation, 119  
National Science Teachers Association, 60  
National Spatial Data, 70  
National Speleological Society, 16  
National System of Public Lands, 131, 132  
National Trails System Act, 6  
National Trails Workshop, 80  
National Trust for Historic Preservation, 115  
National Weather Service, 36  
National Wild Horse and Burro Communications Team, 160  
National Wild Turkey Federation, 13  
National Wilderness Preservation System, 20–21  
National Wildfire Coordinating Group, 36  
National Wildlife Federation, 19  
Native American Graves Protection and Repatriation Act, 59  
Native Americans. *See* Indian tribes and people  
native plant management, 82, 103, 104  
Native Plant Materials Development Program, 103, 104  
natural gas production, 24–27, 65, 87–91, 100, 138  
Natural Resources Committee, 42  
Natural Resources Conservation Service, 98, 147, 158  
Natural Resources Defense Council, 7, 9, 53, 90  
*Natural Resources Defense Council v. Andrus*, 9  
*Natural Resources Defense Council v. Morton*, 9  
Nature Conservancy, The, 56, 161  
Nau, John, III, 109  
Naugle, David, 100  
Naval Oil Shale Reserve (NOSR), 91  
“Need for a Multipurpose Cadastre,” 70  
Needles Field Office lands, **130**  
Nelson, Judy, 11

Nevada  
conservation, 13, 47, 51, 76, 98, 159  
land transactions, 71, 118  
mine cleanup, 54  
recreation, 19, 59, 122  
renewable energy, 92, 93, 94  
Sagebrush Rebellion, 7  
Southern Nevada Public Lands Management Act, 118  
value of public lands, 167  
wild horses, 159  
wilderness designations, 76  
wildfire, 82, 83, 84, 85  
“New Energy Frontier,” 139  
New Mexico  
caves, 16  
cultural resources, 109  
habitat protection, 13, 51, 90  
Healthy Lands Initiative, 98  
land transactions, 163  
law enforcement, 34  
paleontology, 110  
recreation, 18, 56, 59  
wilderness designations, 76  
New Mexico Museum of Natural History and Science, 146  
New Mexico State Historic Preservation Officer, 109  
New River, OR, 54  
Nine Mile Canyon, UT, 90  
Nixon, Richard, 6, 19, 23, 31, 116  
“NLCS Science Strategy,” 147  
“NLCS Science Summary Report,” 147  
“North American Waterfowl Management Plan,” 101  
Northern Arizona University, 147  
northern spotted owl, 8, 42, 43, 97  
Northwest Forest Plan, 42, 44–45, 53, 95–97, 157  
Northwest Timber Compromise, 8  
Norton, Gale, 76, 95, 106, 116, 164  
Norton settlement, 80  
Obama, Barack, 126, 129, 137, 144, 149, 150  
Obama, Michelle, 150  
Occupational Safety and Health Administration, 69  
off-highway vehicle use, 30, 31, 109, 112, 119, 123, 145, 151

Office of Aircraft Services, 36  
Office of National Drug Control Policy, 34  
Office of the Inspector General, 119  
“OHV Strategy,” 112  
oil embargo, 23, 24  
oil production, 24–27, 65, 87–92, 100, 131, 138  
oil shale, 26, 91, 92, 138  
Ojito Wilderness, NM, 76, **109**, **146**  
Oklahoma, 67  
Olwell, Peggy, 104  
Omnibus Public Land Management Act (Public Lands Act), 78, 110, 111, 144, 146  
Onion Creek Trail, UT, 163  
“Onshore Oil and Gas Order Number 1,” 88, 90  
Operation Backfire, 108  
Operation Green Sweep, 34  
Operation Reclaim Our Arizona Monuments, 165



Oregon

- ecosystem management, 44, 45, 47, 48
- forests and timber, 7–8, 44, 96–97, 157
- Healthy Lands Initiative, 98
- land transactions, 115
- law enforcement, 34
- recreation, 54
- riparian areas, 10, 12, 51–52, 53
- weed demonstration areas, 54
- wildfire, 82

Oregon and California Revested Lands Sustained Yields Management Act (O&C Lands), 7, 43, 45, 96–97

Oregon Department of Fish, Game, and Wildlife, 51

Oregon Trail, 17, 56, 59, 81, 151

Organ Mountains, NM, **137**

Otero Mesa, NM, 90

“Out of Ashes, An Opportunity,” 82

Outdoor Recreation Review Commission, 17

Owen, William (Billy) Octavius, 117

Owens Peak Wilderness, CA, **62**

owls, 8, 97

Owyhee Canyonlands, ID, 145

Owyhee Public Lands Management Act, 145

Owyhee Uplands, ID, **14**, 82

PACFish, 42, 53

Pacific Lumber Company, 162

Pacific salmon, 53

Paleontological Resources Preservation Act, 110, 111, 119

paleontology, 57–59, 110–111, 113, 119

Paleozoic Trackway, NM, 59

Palette, JuLee, 62

Paria Canyon-Vermilion Cliffs Wilderness, AZ, **51**

Parma Fire Department, ID, 120

Parsons, Wade, 60

“Partners Against Weeds: An Action Plan for the Bureau of Land Management,” 54

Partners in Resource Education, 60

partnerships

- abandoned mine cleanup, 54
- caves, 16
- energy, 92, 140
- environmental education, 60, 152
- fish and wildlife, 13, 14, 51, 99, 100, 101, 102, 154
- Great Basin Restoration Initiative, 82
- Healthy Lands Initiative, 98
- helium, 67
- Interior Columbia Basin, 48
- land and realty, 116
- landscape approach, 143
- law enforcement, 118–119, 165
- Milford Flats, 86
- National Landscape Conservation System, 56, 76, 77, 78, 79, 80, 146, 147, 152, 162–163
- National Public Lands Day, 61
- planning, 41, 125, 173
- plant conservation, 103, 104
- preservation, cultural and paleontological, 59, 109, 111
- public land management, 75, 128, 173
- recreation, 19, 54, 112, 113, 150
- Restore New Mexico initiative, 98
- riparian-wetland management, 51
- Roan Plateau, 91
- trails, 80, 81, 149
- travel management, 112
- weed management, 54
- wild horses and burros, 158–159
- wildfire, 83, 156

Pavek, Gary, 62

Pedrick, Kathy, 94

Pellant, Mike, 82

Penfold, Mike, 50

Penny, J. Russell, 30, 31

Percival, Roy, 36

peregrine falcon, 13

Peregrine Fund, 51

Permian Basin Memorandum of Agreement, 109, 111

petroleum, 23–27, 65, 87–92, 100, 131, 138

Pettis, Shirley, 31

Piceance Basin, CO, 92

Pickens, Madeleine, 159

Pierce, Franklin, 79

pinyon pine, 82, 86

“Plan to Educate Young Americans About Their Nation’s Rich Cultural Heritage, A,” 58

Plant Conservation Alliance, 104

planning. *See* land use planning

plants

- invasive, 35, 54, 82, 84, 86, 155
- native, 60, 82, 103, 104
- seed collection and reseeding, 60, 82, 84, 86, 103, 104

Point Reyes National Seashore, CA, 29

Pompeys Pillar Historical Association, 56

Pompeys Pillar National Monument, MT, 3, 56

Ponce de Leon, Juan, 79

Poncha Pass Resource Conservation Area, CO, 3

Pony Express National Historic Trail, WY, 17, 81, 151

Powder River Basin, WY, 24, 65, 88–89, 92, 100, 141

prairie-chicken, 98, 163

Preserve America, 109

President’s Commission on Americans Outdoors, 19

Pressler, Larry, 110

Probert, Felicia, 71–72

programmatic environmental impact statements, 140

“Project Archaeology,” 59

Project Independence, 23

Project Learning Tree, 60

Propst, Luther, 167

Prospect Hill, WY, **81**

Pryor Mountain Wild Horse Range, 38

public access roads, 20–21, 112, 163–164

Public Land Law Review Commission, 2, 4, 7

Public Land Survey System, 70, 116

Public Lands Act, 78, 110, 111, 144, 146

Public Lands Appreciation Day, 60

Public Lands Council, 49, 106

Public Lands Foundation, 29, 41, 131

Public Lands Partnership, 78

Public Rangelands Improvement Act, 10, 11, 38

“Purple Book,” 112–113

Pyramid Lake Paiute Tribal Government, 122

Quail Unlimited, 13

Quiet Title Act, 164

Raft River Fire, ID, **36**

Ramsbacher, Hal, 11

rangeland management

- assessment, inventory, and monitoring, 106, 158
- Bush administration changes, 105–106
- collaborative planning, 145
- ecosystem management, 49
- fees and permits, 11, 49, 106–107
- history, 1, 9–10
- land transactions, 29
- Resource Advisory Council, 50
- riparian areas, 10, 12, 53

“Rangeland Reform ‘94,” 49, 105–106

rangers, 31–33, 73. *See also* law enforcement

rapid ecoregional assessments, 141–142, 143

Raptor Research and Technical Center, 51

rare earth minerals, 141

Rasmussen, Boyd, **174**

Ratcliffe, Bob, 151

Rau, Larry, 100

razorback sucker, 102

“Reaching Common Ground” broadcast, 50

Reagan, Ronald, 11, 19

recordable disclaimers of interest, 164

Recovery Act, 94, 137–138, 139, 140

recreation

- America’s Great Outdoors initiative, 150, 152
- Burning Man festival, 122
- expansion and site development, 54, 150
- fishing, 19, 54, 63, 76, 101, 102, 151, 162
- history, 17, 19
- hunting, 14, 17, 39, 63, 76, 77, 91, 151, 159, 168
- Lake Havasu, 102
- outcome-based management, 112–113
- public access, 112
- Rio Grande, 18
- Shelf Road Climbing Area, CO, 113
- Take It Outside!, 14, 150
- veterans, 149, 150
- volunteers, 152

“Recreation 2000,” 19, 54

Recreation and Public Purposes Act, 27

Recreational Fee Demonstration Program, 54  
 Red Gulch, WY, 58, 59  
 Red Rock Canyon National Conservation Area, NV, 19, 56, 118  
 redband trout, 51  
 Reid, Harry, 56  
 Remote Automatic Weather Station, **69**, 156  
 renewable energy  
   geothermal energy, 132, 139  
   Obama administration, 138–139  
   portfolio standards, 92, 93, 94  
   Recovery Act, 137, 139, 140  
   rights-of-way (ROW), 160–161  
   siting on disturbed land, 94  
   solar energy, 93, 94, 137, 139, 140  
   wind energy, 66, 92, 139  
 “Report of the South Canyon Fire Accident Investigation Team,” 68  
 “Resident Fish Habitat Management,” **13**  
 Resource Advisory Councils, 50  
 resource management plans (RMPs)  
   California Desert Conservation Area, 5  
   caves, 16  
   early use, 3, 5, 16, 27  
   Jupiter Inlet, FL, 79  
   litigation, 90  
   new approaches, 41, 43, 123, 124–125  
   Pacific Northwest, 47, 96–97, 157  
   renewable energy, 94  
   sage-grouse range, 100, 154  
   Roan Plateau, CO, 91  
   travel management, 112  
 Resource Ordering and Status System, 156  
 Resseguie, Linda, 140  
 restoration and rehabilitation  
   after wildfire, 82, 84, 86, 95  
   habitat protection, 11–12, 49, 51–53, 99, 118, 141–142  
   Healthy Lands Initiative, 95–98  
   native plants, 60, 103–104  
 Restoration Design Energy Project, 94  
 Restore New Mexico, 98  
 Revised Statute (R.S.) 2477, 163, 164  
 rifts, continental, 18

rights-of-way, 92, 93, 163–164  
 Rio Grande, 17, 18  
 Rio Grande cutthroat trout, 51  
 riparian areas, 10–12, 51–52, 167  
 “Riparian-Wetland Initiative for the 1990s,” 51–52  
 Ritchie, Alexandra, 130  
 rivers. *See* wild and scenic rivers; *specific rivers*  
 Riverside County, CA, **93**  
 roads and public access, 20–21, 112, 163–164  
 “Roads and Trails Terminology Report,” 112  
 Roan Plateau, CO, 90, 91  
 Rocky Mountain Elk Foundation, 13  
 Rocky Mountain Field Institute, 113  
 Rogue National Wild and Scenic River, OR, 17, 115  
 Rogue River Ranch National Historic Site, OR, **ix**  
 Roosevelt, Franklin, 1  
 Roosevelt, Theodore, 1, 31  
 Rose, Barry, 143  
 Roseburg District, OR, 44  
 Ryerson, Michelle, 68–69  
 Sage Creek, MT, 51  
 Sagebrush Rebellion, 7  
 sage-grouse, 51, 82, 99, 100, 140, 154  
 Salazar, Ken  
   climate change, 141–142  
   conservation, 78, 146, 148  
   energy policy, 93, 138–140  
   litigation, 157  
   mining, 141  
   rights-of-way, 164  
   wild horses and burros, 158–159  
   youth programs, 152  
 salmon, 101, 162  
 San Geronio Pass, CA, 66  
 San Juan Basin, NM, 90  
 San Pedro Riparian National Conservation Area, AZ, 19, 52, 167  
 San Rafael Swell, UT, 114  
 San Simon Valley, AZ, **105**  
 Sanchez, Doran, 122  
 sand dune lizard, 98, 163  
 Sand to Snow National Monument, CA, 166

Santa Rosa and San Jacinto Mountains National Monument, CA, 56, 126, 163  
 Save America’s Treasures, 109  
 Sawyer, Don, 16  
 Saylor Creek Horse Management Area, ID, **63**  
 Scarlett, Lynn, 109  
 Schalk, Lynell, 33  
 Schenk, Kurt, **89**  
 “Science and Children,” 60  
 seed collection and reseeding, 60, 82, 84, 86, 103, 104  
 Seeds of Success, 103, 104  
 Seiberling, John, 22, 31  
 Sharpe, Maitland, 63–64  
 sharp-tailed grouse, 51  
 Shea, Pat, **175**  
 Shelf Road Climbing Area, CO, 113  
 Shirley Basin, WY, 51  
 Shore, Willa Mae, 28  
 Shoshone-Bannock Tribe, 104  
 Shoshone-Paiute Tribe, 145  
 Shuckin Fire, ID, **120**  
 Sierra Club, 145, 164  
 Sikes Act, 12, 31  
 Silcock, Burt, **174**  
 Simpson, Don, 99  
 Skywatcher Site, CO, 115  
 Sleeping Giant Wilderness Study Area, MT, **148**  
 Sloan Canyon National Conservation Area, NV, 76  
 Smith, Steve, 31  
 smokejumpers, 156  
 Snake River, **176**  
 Snake River Birds of Prey Area, ID, 51  
 Snake River Raptors volunteers, 56  
 Snake River watershed, **42**  
 social media, 160  
 Society of American Indian Government Employees, **129**  
 soil management, 103, 142  
 solar energy, 93, 94, 137, 139, 140  
 Sonoran Desert, AZ, 84, 115, **142**  
 Sonoran Desert National Monument, AZ, 165, 167  
 South Canyon Fire, CO, 68–69  
 South Dakota, 51, 110

South Pass, WY, **81**  
 Southern Nevada Public Lands Management Act, 71, 118, 162  
 Southern Utah Wilderness Alliance, 90, 164  
 Southwell, Beth, 117  
 Southwest Natural and Cultural Heritage Association, 56  
 special recreation management areas, 162  
 special recreation permits, 122  
 spiny greenbush, 104  
 Sport Fishing and Boating Partnership Council, 101  
 Staley, Web, 60  
 State of Alaska Permanent Fund Fraud Division, 119  
 “State of the Public Rangelands 1990,” 49  
 Stateline Resource Area, NV, 56  
 Steele Creek, AK, 55  
 steelhead, 53  
 Steese National Conservation Area, AK, **22**  
 Stevens, Ted, 22, 87  
 stewardship contracts, 95–96  
 Stiles, Mark, 50  
 Stock Raising Homestead Act, 1, 90  
 Stockman, David, 11  
 Stoddard, Charles, **174**  
 Storm King Mountain, CO, 68  
 Straight Cliffs Formation, UT, 147  
 Strategic Petroleum Reserve, 23  
 Stubbs, George (painting), 168  
 Sue (fossil), 110  
 Surface Mining Control and Reclamation Act, 4  
 surveying, cadastral  
   Alaska, 116  
   energy management, 89, 137, 161  
   fire management, 86  
   history, 1, 30, 70  
   Indian lands, 116, 160  
   land disposal, 27  
   paleontology, 57, 58, 117  
 sustained yield, 2, 3–4, 7, 45  
 “Sustaining Working Landscapes,” 105–106  
 Suzie Fire, NV, 85  
 symposiums, 63, 144, 146, 147  
 Synthetic Fuels Corporation, 26



Table Rocks Area of Critical Environmental Concern, OR, 161  
 Takes Horse, Brenda, **129**  
 Taylor Complex Fire, 83  
 Taylor Grazing Act, 1, 9–10, 12  
 “Teenage Mutant Ninja Turtles and the Cliffs of Mystery,” 58–59  
 Tehachapi Pass, CA, 66  
 terrorism, 108  
 Terry Badlands Wilderness Study Area, MT, **131**  
 Teshekpuk Lake, AK, 87  
 Teton Regional Land Trust, 162  
 Texas, 67, 84  
 Theiss, Leslie A., 67  
*Therizinosaur* fossils, 110  
 Thomas, Jack Ward, 42, 44, 53  
 Timber Culture Act, 1  
 timber production, 7–8, 30–31, 43–45, 95–97, 157  
 Timber Trespass Act, 30  
 Times- Mirror Company, 60  
 Titus, Alan L., 111  
 Tolman, Brett, 165  
 Trail Tenders, Inc., 56  
 Trail Through Time, CO, 59  
 trails. *See also specific trails*  
   historic, 17, 18, 56, 114, 149  
   public access issues, 112, 113  
   Recovery Act, 137–138  
   recreational, 17, 19, 59, 75–76, 151  
   scenic, 80, 81, 137, 144, 149, 151  
   volunteers, 56, 152  
 Trails and Travel Management Team (TTMT), 112  
 Trans-Alaska Pipeline System, 23–24  
 tribal consultation, 109, 126, 129. *See also* Indian tribes and people  
 Tribal Liaison Group, 48  
 Tribby, Dale, 100  
 TriData Corporation, 69  
 Trilobite Trail, NV, 59  
 trout, 51, 53, 91, 101, 162  
 Trout Creek Mountains, OR, 53  
 Trout Unlimited, 13  
 Truman, Harry, 1  
 Trust for Public Land, 115

Tsongas, Paul, 22  
 tule elk, 13  
 turkeys, 51  
 Twin Falls, ID, **35**  
*Tyrannosaurus rex* fossils, 110  
 Udall, Morris, 22  
 “Unified Strategy to Implement ‘BLM’s Priorities for Recreation and Visitor Services,” 112–113  
*United States v. Diaz*, 110  
 University of Utah, 147  
 Unlawful Inclosures Act, 30–31  
 Upper Snake/South Fork Snake River Area of Critical Environmental Concern/  
 Special Recreation Management Area, CA, 162  
 uranium mining, 141  
 U.S. Coast Guard, 79  
 U.S. Court of Appeals, 27, 95, 96, 106, 110, 164  
 U.S. Department of Agriculture, 38, 47, 95, 104, 115, 147  
 U.S. Department of Defense, 140  
 U.S. Department of Energy, 91, 100, 139, 140  
 U.S. Department of Housing and Urban Development, 118  
 U.S. Department of the Interior  
   climate change, 141–142  
   conservation, 22, 71, 76–79, 95–99, 143, 148  
   cultural resources, 109, 110  
   energy management, 24–26, 87, 91, 93–94, 138, 140  
   fire management, 36, 95  
   FLPMA mandates, 3–5, 24, 32, 33  
   history, 1–2, 31, 127  
   Indian lands, 116, 160  
   land transactions, 29, 71, 114, 115  
   law enforcement, 32, 33, 35  
   minerals and mining, 66, 67, 127, 141  
   rangeland management, 11, 49, 106  
   wild horses and burros, 38, 63, 107  
 U.S. Drug Enforcement Administration, 165  
 U.S. Fish and Wildlife Service  
   caves, 16  
   conservation and habitat protection, 12, 20, 51  
   fire management, 95  
   grazing concerns, 106  
   land transactions, 29, 114, 115, 118, 162

  northern spotted owl, 43, 97  
   sage-grouse, 99, 154  
 U.S. Forest Service  
   conservation and habitat protection, 13, 20, 99, 144  
   ecosystem management, 42, 44, 45, 47, 48  
   fire management, 36, 44, 82  
   land transactions, 29, 114, 115, 118, 162, 163  
   paleontology, 110  
   rangeland management, 11, 158  
   weed control, 54  
 U.S. Geological Survey, 18, 25, 147  
 U.S. Supreme Court, 31, 32, 49  
 Utah  
   conservation, 13, 47, 98  
   cultural resources, 59, 110, 111  
   educational resources, 60, 147  
   energy and mining, 90, 92, 163  
   Grand Staircase-Escalante controversy, 63, 73  
   land transactions, 114  
   law enforcement, 165  
   litigation, 80  
   recreation, 54  
   weed demonstration areas, 54  
   wildfire, 82, 84, 86  
 Utah Division of State History, 147  
 Utah Geological Survey, 111  
 Utah Museum of Natural History, 111, 147  
 Utah Partners for Conservation and Development, 86, 98  
*Utahceratops gettyi* fossils, 111  
 Vail, Del, 31  
 Vale District, OR, 51  
 value of public lands, 166–168  
 vehicle management, 19, 30–31, 71, 112, 119, 145  
 Veneman, Ann, 95  
 Ventana Ranch, 163  
 Vermillion Basin, CO, 143  
 veterans and military personnel, 150, 157  
 Vincent Creek Recreation Site, OR, **17**  
 violence, 108, 119, 121  
 volunteers, 56, 61, 102, 151–153  
 Walker, Brett, 100

Walker, Danny, 117  
 “Walking with Dinosaurs,” 110  
 Warner, Barbara, 60  
 Washington State, 45, 47, 48, 66  
 “Watchable Wildlife,” 51  
 water  
   effect of mining, 141  
   effect of solar production, 94  
   habitat protection and restoration, 53, 98, 101, 102  
   Indian lands, 126  
   rangeland, 10, 12, 38, 106  
   recreation, 17, 18, 54, 101, 102  
   riparian areas, 10–12, 51–52, 167  
 Water Conservation Fund Act, 31  
 Watershed Restoration Initiative, 98  
 Watkins, Lynn, 62  
 Watkins, T.H., 22  
 Watt, James, 11, 24, 25, 27, 127  
 Wayne, John, 11  
 weeds, 35, 54, 155  
 West Indian manatee, 79  
 Western Association of Fish and Wildlife Agencies, 99, 153, 154  
 Western Governors’ Association, 41, 153  
 western juniper, 35, 82, 84, 86, 115  
 Western Oregon Plan Revisions, 97, 157  
 Western Oregon Task Force, 157  
 Western Watersheds Project, 106  
 Westwater Canyon, NM, 150  
 Westwater Canyon, UT, 54  
 wetlands and riparian areas, 10–12, 51–52, 167  
 White Mountains National Recreation Area, AK, **vi–vii**  
 Whitmore, Mike, **89**, 117  
 Whitteaker, Edwin, 34  
 wild and scenic rivers  
   Fortymile River, 55  
   National Landscape Conservation System, 75, 77, 144  
   recreation, 17, 18, 19  
   Rio Grande, 17, 18  
   Rogue River, 17, 115  
 Wild and Scenic Rivers Act, 6, 17  
 Wild Free-Roaming Horses and Burros Act, 31, 38, 63–64, 107–109

wild horses and burros, 38–39, 63–64, 107–108, 158–160  
“Wild Horses and Burros Management Handbook,” 107  
Wild Sheep Foundation, 13  
wilderness  
  Bisti/De-Na-Zin, NM, 58  
  Hells Canyon, AZ, 114, 115  
  inventories, 20–21, 80, 148  
  National Landscape Conservation System, 76–78, 144  
  study areas, 21, 61, 63, 75, 76, 80  
Wilderness Act, 6, 20–21, 31  
Wilderness Land Trust, 115  
Wilderness Society, The, 145, 164, 167  
wildfire. *See* fire management  
Wildland Fire Decision Support System, 86, 156  
“Wildland Fire Safety Awareness Study,” 69  
wildland-urban interface, 37, 84, 95, 96  
wildlife habitat  
  energy development, 90, 97, 100  
  intrinsic value, 166  
  inventories, 4, 10  
  landscape scale, 153  
  off-road vehicle use, 19  
  protection, 12  
  restoration, 51, 98  
  riparian areas, 10  
  stewardship contracting, 96  
wildlife refuges, 87, 118  
Williams, Chuck, 56  
wind energy, 66, 92, 139  
Wind River Mountains, WY, 41, 88  
Winkle Bar, OR, 115

Wintch, Michael, 31  
winterfat, 60  
Wolf, Sue, 28  
Wolford Mountain Recreation Area, CO, 151  
Woozley, Edward, 174  
workforce diversity, 33, 46, 81, 127–129, 137, 157  
World Fly Fishing Championship, 162  
woundfin minnow, 13  
Wyoming  
  conservation, 47, 98, 159  
  energy management, 24, 65, 88–89, 92, 100, 141  
  habitat protection, 13, 51, 99, 100, 154  
  paleontology, 57, 58, 110, 117  
  recreation, 17, 81, 112  
  riparian areas, 51–52  
  wild horses, 39, 159  
Wyoming Honor Farm, 39, 107  
Wyoming Landscape Conservation Initiative, 98  
Yaquina Head Outstanding Natural Area, OR, 72, 79  
Yellowstone cutthroat trout, 162  
Yellowstone National Park, 37  
Yellowstone River, 101  
Young, Don, 87  
youth programs, 60, 150, 152  
Zaidlicz, Edwin, 127  
Zielinski, Elaine, 46, 124  
Zion National Park, UT, 114  
Zuni Basin, NM, 110  
*Zuniceratops* fossils, 110  
Zwang, Cheryl Cobell, 129



