

Q & A – RAC Review of Bureau of Land Management Socioeconomic Strategy

1. Why are the RACs being asked to review the Socioeconomic Strategy?

The effort to develop a Socioeconomic Strategy for the Bureau of Land Management (BLM) started with a needs assessment, which was designed to characterize the current state of the BLM's Socioeconomic Program. As part of that assessment, then-Director Jim Caswell asked RAC members to participate in telephone interviews with the understanding that they would be able to review and comment on the strategy once it was developed.

2. What is the purpose of the Socioeconomic Strategy?

The strategy provides a roadmap to guide the BLM's Socioeconomic Program in both the near- and long-term. Specifically, the strategy addresses three key questions:

- I. What information on the socioeconomic context, costs, and benefits of proposed actions do BLM staff and the public need?
- II. How can the Socioeconomics Program most effectively support other management needs, including emerging issues (climate change, the valuation of ecosystem services) and short-term demands for socioeconomic data and analysis?
- III. Finally, what socioeconomic capabilities, internal and external, are required for the BLM to meet these needs?

3. Will this be the only opportunity to provide input to enhance the use of socioeconomic information at the BLM?

No. The strategy emphasizes that the BLM's socioeconomic information should be relevant to key constituencies. This includes members of the RACs, and the Bureau's socioeconomic staff will consult with the RACs to solicit advice on the types of socioeconomic information that would be most useful to the councils and the public.

4. What kinds of feedback are you looking for from the RACs?

For this review, we are not looking for close editing. Instead, please consider these points:

- Does the narrative in sections 1 and 2 make the case for the goals and strategies set out in section 3?
- Is the writing clear?
- Are there significant errors or omissions?
- Are the graphics useful? (Don't worry about the placement of graphs, text boxes, and the like.)
- Do we need to prioritize the proposed objectives and actions? If so, suggestions for the 'top 5' or 'top 10' would be appreciated.

Please provide comments to Joel Larson (jplarso@blm.gov) and Rob Winthrop (rwinthro@blm.gov) by **April 30, 2012**. Thank you very much!

Bureau of Land Management

Socioeconomic Strategy

2012-2022

Vision. Relevant and credible socioeconomic information and tools are used in resource management decisions to strengthen the effectiveness of BLM programs.

Principles

1. Increase socioeconomic awareness and integrate capabilities across all programs.
2. Build on existing socioeconomic understanding and expertise within all levels of the organization.
3. Use flexible and cost-effective approaches in workforce planning to optimize the balance of BLM and external socioeconomic capabilities.
4. Wherever feasible, make socioeconomic tools and data accessible and useful for non-specialists.

Authors

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Socioeconomic Oversight Committee

BLM Washington Office & Centers	
Lynda Boody	Deputy Assistant Director, Fire & Aviation (FA-100)
Kit Muller	Strategic Planner (WO-200)
Doug Powell (retired)	Rangeland Resources (WO-220)
Jerry Cordova	Cultural, Paleontological & Tribal Consultation (WO-240)
Hal Hallett	Recreation & Visitor Services (WO-250 – former position)
Jim Bowmer	Forests and Woodlands (WO-220)
John Broderick*	Minerals and Realty Management (WO-300)
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BLM Socioeconomic Strategy: Management Summary

Until the 1970s the BLM successfully pursued its mission by focusing on commodity production while striving for good stewardship of land, water, and habitat—an inherently natural resource focus. However, for the last several decades the challenge of resource management has increasingly centered on weighing competing interests and public benefits regarding the use of and access to public lands and resources—an inherently social and economic focus. To address these changing needs, this Strategy provides a roadmap to guide the BLM’s Socioeconomics Program in both the near- and long-term. Among the key questions it addresses:

- What information on the socioeconomic context, costs, and benefits of proposed actions do BLM staff and the public need?
- How can the Socioeconomics Program most effectively support other management needs, including emerging issues (climate change, the valuation of ecosystem services) and short-term demands for socioeconomic data and analysis?
- Finally, what socioeconomic capabilities, internal and external, are required for the BLM to meet these needs?

To provide a solid foundation for a new Socioeconomic Strategy, the BLM contracted an external assessment of BLM’s social science needs and capabilities. Key components of the assessment included a telephone survey to over 1,200 BLM employees and interviews with Resource Advisory Council members regarding their perceptions on the BLM’s use of social and economic information. An oversight committee of over twenty BLM managers and program staff guided the development of both the external assessment and this Socioeconomic Strategy.

Section 1 of the Strategy describes the social science disciplines, policy mandates, and the changing human context of resource management in the 21st century. It summarizes and brings forward earlier recommendations for strengthening BLM’s socioeconomic capabilities, and presents relevant findings from the Socioeconomic Needs Assessment. It also describes some of the recent accomplishments of BLM’s Socioeconomics Program.

Section 2 identifies many of BLM’s current management challenges within a socioeconomic context, using the broad topics of communities, landscapes, and values, and the relevant socioeconomic information that could be used to address these challenges. It then outlines the organizational requirements for a Socioeconomic Program that meets the Bureau’s needs, addressing the broad topics of workloads, people, and processes.

Section 3 outlines recommended goals, strategies, and actions that should be implemented in order to strengthen the BLM’s ability to provide needed socioeconomic information, analysis, and support in the coming decade.

1 - The Changing Role of Socioeconomics at the BLM¹

Introduction

As the Bureau of Land Management (BLM) fulfills its mission both to conserve and to utilize the lands and resources under its stewardship, how should human values and interests be considered? What information on the human context and consequences of BLM's activities do our staff need in order to make informed and effective decisions? What information on the socioeconomic benefits and costs of proposed actions do our constituents need? Finally, what socioeconomic capabilities, internal and external, does the BLM require to provide such information?

This Socioeconomic Strategy provides answers to these questions, considering both well-established program activities and newly emerging challenges. Because the BLM's current social science capabilities fall well short of meeting these needs, this plan outlines a realistic and cost-effective approach for achieving the vision and principles of a functional and effective Socioeconomics Program.

The Socioeconomic Strategy is intended for several audiences. For BLM's Washington Office and state office leadership, the strategy is intended to outline a cost-effective approach to meet established and emerging workloads. For BLM field managers and program staff who have little familiarity with the use of the social sciences in resource management, it provides necessary background information and some specific applications to the Bureau's work. For governmental partners and interest groups concerned with the economic and social consequences of BLM's decisions and the adequacy of our analyses, it provides an opportunity to see the steps we are taking to strengthen our capabilities and respond to their concerns. Finally, for social scientists at the BLM and those colleagues from other organizations who work with us, the Strategy offers a roadmap for building a relevant, sound, and innovative Socioeconomics Program.

What are the social sciences?

Throughout this document, *socioeconomics* serves as a shorthand for the data collection, analysis, and interpretation provided by the social sciences and used by the BLM in a variety of ways.² These are not reducible to economics, or any other single field or discipline. The challenges of resource management involve understanding and negotiating competing human interests regarding public lands and resources. The capabilities of socioeconomics are particularly relevant to three sets of resource management issues:

- describing communities and values (the concern of sociology and cultural anthropology);
- analyzing goods and choices (the concern of economics); and
- identifying the human uses of places and landscapes (the concern of geography).

BLM's Socioeconomics Program utilizes knowledge and tools from these four disciplines, and for certain applications draws on other social sciences as well. Each discipline has distinctive methods and theory, and specific areas of relevance for resource management.

- *Sociology* focuses on the organization and values of social groups. This includes analyzing communities of place and communities of interest, and determining differential impacts across stakeholder groups. Sociological methods emphasize quantitative data,

and are well suited to profiling the communities affected by a plan or project or conducting a survey of attitudes regarding the uses of adjacent public lands.

- *Cultural anthropology* examines social life as guided by distinctive systems of meaning – culture. Though its uses overlap those of sociology, anthropology emphasizes ethnographic (qualitative) methods such as open-ended interviews and participant observation, which are well suited to problems involving distinctive ways of life, occupational practices, or local knowledge. Applications include identifying the subsistence hunting harvests of Alaska Native communities, or the vulnerability of Arizona ranchers to climate change.³
- *Economics* studies the choices society makes in managing its scarce resources – investigating both the factors leading to outcomes and the outcomes themselves. For example, economics may investigate outcomes in terms of the jobs and income to be generated under alternative land use allocations or the fair market value of a proposed coal lease. Economics may also explore development strategies or incentives that encourage greater diversification of resource uses with the goal of building resilient economic outcomes. Environmental economics expands the consideration of benefits and costs to include ecosystem services: environmental goods not traded in markets, such as the value of a whitewater rafting experience or the human benefits from terrestrial carbon sequestration.
- *Human geography* considers how the characteristics of land and resources shape human activity, from local to global scales. Examples of resource management issues appropriate for geography include modeling the pace and direction of urban growth affecting public lands, and using participatory techniques to map the associations of places and values in a landscape affected by proposed development.^{4,5}

History and *archaeology* are two other social science disciplines integral to the activities of the BLM. Because these disciplines are organized through BLM’s cultural resources program, they are not examined in this plan. Nonetheless, in many contexts – particularly land use planning – an account of the past human use of an area documented through history and archaeology is a necessary complement to the information on contemporary social and economic life provided through the disciplines examined here.

Political science and *decision science* are two other social science fields relevant to BLM’s programs, though more appropriately obtained through external expertise. Political science is concerned with systems of governance, authority, and decision-making. Political science can, for example, identify more effective strategies for intergovernmental cooperation on cross-jurisdictional issues such as growth and wildfire risk. Decision science is an interdisciplinary subject, drawing on psychology, economics, and operations research, that develops tools and procedures to structure defensible decision-making, typically involving complex criteria under conditions of uncertainty. There are, for example, several decision tools to conserve biodiversity benefits while maximizing other resource management objectives in land use planning.⁶

Policy mandates

Using socioeconomics to understand the human context and consequences of BLM's activities not only makes good management sense – it is also required by law. Several policy mandates are relevant.

- *Federal Land Policy and Management Act (FLPMA)*. FLPMA directs managers to pursue multiple use management while balancing a range of environmental and social values, including consistency with state, local, and tribal government plans. FLPMA requires the BLM to integrate physical, biological, economic, and other sciences, and by regulation to consider “social, economic and institutional data” in developing land-use plans.⁷
- *National Environmental Policy Act (NEPA)*. NEPA directs the BLM to “insure the integrated use of the natural and social sciences . . . in planning and decision making.”⁸ The Council on Environmental Quality’s NEPA regulations specify that the human environment “shall be interpreted comprehensively to include the natural and physical environment *and the relationship of people with that environment*” (emphasis added).⁹
- *Government Performance and Results Act (GPRA)*. GPRA requires the BLM to identify program objectives and to collect “information about program results and service quality.”¹⁰ A variety of socioeconomic techniques can support these goals, including economic analyses of cost-effectiveness and the systematic collection of information on the public’s satisfaction with BLM’s programs.
- *Environmental Justice*. The 1994 Executive Order on Environmental Justice requires each Federal agency to identify and address “disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” The BLM uses socioeconomic methods and data to incorporate environmental justice considerations in its resource management decisions.¹¹ The Department of the Interior (DOI) has prepared a revised Environmental Justice Strategic Plan to guide implementation of these principles and establish performance measures.¹²
- *Subsistence resource rights*. Federal obligations to tribes regarding access to resources are based in treaty, statute, and case law.¹³ Beyond the government-to-government relationship many issues requiring consultation with tribal governments, such as balancing tribal access to subsistence resources with proposed energy development, require ethnographic or other socioeconomic information to identify workable solutions.

The changing context of resource management

Until the 1970s the BLM could successfully pursue its mission by focusing on commodity production while striving for good stewardship of land, water, and habitat. The passage of NEPA in 1970 and the Endangered Species Act in 1973 focused public awareness on federal environmental responsibilities, and contributed to increasingly polarized public attitudes regarding the appropriate management of federal lands and resources. This has strengthened the need for sound information on the environmental interests and values of BLM’s varied constituencies.

Over the past forty years the West has changed dramatically. Seven of the twelve western states—all with a large BLM presence—more than doubled their population. Nevada grew by over 450 percent and Arizona by over 260 percent in this period, while the U.S. population increased by only 52 percent.¹⁴ The footprint of many western cities expanded dramatically to accommodate growth, pushing residential development to the boundaries of federal lands and producing many land use conflicts at the wildland-urban interface. What was once an overwhelmingly rural agency has become a significant provider of recreation and other services to urban and suburban populations.

Over the same period the economies of western towns diversified. Globalization helped undermine the role of agriculture across much of the west.¹⁵ New communications technologies made it feasible for firms to do business on a national or international scale while based in small but amenity-rich western communities. Today in many rural counties of the “New West” the economic value of services and transfer payments to retirees far outstrips that of traditional commodity sectors such as ranching.¹⁶

Yet energy and mining remain major economic drivers for many rural western counties. The West has experienced several booms in fossil energy production, including a boom in the mid-1970s to mid-1980s and a current boom, starting in the late-1990s. Rapid energy development has many socioeconomic consequences, including increased employment, greater demand for housing and public services, and a two-tier local wage structure.¹⁷ For example, in 2010, mining-related jobs in Garfield County, Colorado earned an average of \$78,000 per year, while non-mining jobs earned \$40,000 annually.¹⁸ Large-scale wind and solar generation projects represent a more recent trend in western energy development, posing distinctive management challenges and socioeconomic effects.

The United States has also become more racially and ethnically diverse. While many racial and ethnic groups use and value the public lands, Hispanic Americans form a particularly significant new public for the BLM. From 2000 to 2010, America’s Hispanic population grew 43 percent, to over 50 million.¹⁹ This population is disproportionately western.²⁰ As a result the BLM must learn to serve not only a larger but a more diverse population, with more varied needs, interests, and values regarding the public lands.

Native American rights and interests also gained greater prominence over the past forty years. Examples include laws preserving access to American Indian sacred sites and protecting rural Alaskan subsistence uses.²¹ Such changes have required resource management that is better informed regarding the rights, values, and ways of life of American Indian and Alaska Native communities.

Finally, over the past decade state and local governments gained a stronger role in informing the development of BLM’s plans and environmental impact statements (EISs), as these governmental partners became more formally and actively involved as cooperating agencies.²² State and local governments have strong interests in the socioeconomic effects of federal decisions on their jurisdictions, resulting in greater scrutiny of the socioeconomic analyses contributing to BLM’s resource management decisions.

Three decades of socioeconomics at the BLM

Staffing trends. Beginning in the late-1970s rapid, large-scale energy development, particularly of coal and natural gas, created concern for the adequacy of BLM's socioeconomic analyses. The energy boom combined with new policy emphases on integrated planning under FLPMA and impact assessment under NEPA prompted a wave of social science hiring. By 1981 the BLM had a sizeable socioeconomic staff, including by best estimates some 40 economists and 15 sociologists.²³ That level of staffing included at least one economist in every state office, economists in many district offices, sociologists in 11 of 12 state offices, and socioeconomic staff at the Washington Office (WO) and the Denver Service Center.

Budget priorities shifted significantly over the next decade. By 1987 only two sociologist positions remained; economist positions also dwindled. In some cases this reduction in force could have been the result of professional training that was not well matched to the Bureau's needs. Many of the sociologists hired in the late-1970s and early-1980s were trained in an urban sociology and social work tradition, and may not have been familiar with the assessment of social impacts in land and resource management.²⁴ By 2011 BLM's socioeconomic staff numbered 14 individuals: 9 economists and 5 other social scientists (in sociology, anthropology, and geography), but only 10.6 FTE.²⁵

Previous social science plans and reports. This document is not the first effort to craft a strategy for the social sciences at the BLM: socioeconomic staff prepared action plans and reports in the 1980s and 1990s. Some key findings from earlier efforts provide a context for the current strategy, and suggest areas of both continuity and change in the use of socioeconomics across the Bureau.

*Social and Economic Policy and Action Plan (1981).*²⁶ The 1981 Action Plan proposed a major role for socioeconomics within the BLM, and called for "including social and economic concerns on an equal basis with other resource considerations."²⁷ The plan identified three broad goals.

- First, to integrate socioeconomic analysis into BLM's decisions, it mandated improved policy and guidance on incorporating social and economic analyses into plans and environmental impact assessments, and preparing benefit-cost analyses.²⁸
- Second, it called for improved technical capabilities, acknowledging that "comprehensive . . . and professional" socioeconomic analysis was still far from being achieved. Analyses were "of uneven quality . . . the Bureau lacks quality data."²⁹ The Action Plan recognized the need to value not only market commodities, but also the "non-market values of all goods and services produced on public lands."³⁰
- Third, it included a strong statement on socioeconomic mitigation. The BLM was responsible not only for identifying the adverse human impacts of a proposed action, but working with other parties to reduce them.³¹

As a snapshot of social science at the BLM in 1981, the Action Plan suggests both some important strengths and some significant weaknesses. On the positive side, this plan and other programmatic efforts of the period reflect extensive technical expertise by BLM's economists and sociologists, a critical awareness of shortcomings, and thoughtful ideas for programmatic improvements. On the negative, the 1981 Action Plan also refers to a "communication gap" between BLM's socioeconomic staff and its managers. Socioeconomic findings "have been

couched in terms that are incomprehensible.”³² Three years later, a follow-up report noted: “The perception is that managers do not know what social scientists can do or what they do, and that social scientists perceive managers as not being able to articulate what they want.”³³

In hindsight, opportunities to improve communication between specialists and managers may have been limited by assumptions on how applied social science should be organized in a resource management agency. The 1981 Action Plan focuses on technical excellence – improved methods, better data – but scarcely addresses *effectiveness*, providing the information and assistance that will most benefit BLM’s programs and management decisions. The 1981 plan assumed that providing socioeconomic information and assistance should be the exclusive responsibility of trained social scientists, rather than a goal to be accomplished by a combination of specialists and other BLM staff equipped with appropriate tools and training.³⁴

BLM Social Science Initiative (1995). Three focus groups involving BLM managers and socioeconomic staff were held in 1995 to review the status of social science within the Bureau. Many of the challenges identified by the focus groups had been noted a decade earlier:

- “A significant number of BLM managers resist recognizing that there is a problem – public discontent with BLM’s attention to ‘people issues’ and, by extension, with the level of use of social science in BLM.”³⁵
- Social scientists fail to present information in a manner that is “relevant and usable to BLM decision makers.”³⁶

A number of solutions recommended by the focus groups remain relevant today, and are addressed in the current strategy:

- “Incorporate social science awareness training into all aspects of the core curriculum.”³⁷
- The BLM should foster “continuous informal dialogue between social scientists and managers” to advise on local issues and trends.³⁸
- “BLM must aggressively partner, at all levels, with all sources of [external] social science expertise.”³⁹

Assessment of Social and Economic Capabilities (2009). In order to adequately characterize the current state of the BLM Socioeconomics Program and to provide a solid basis for a new Socioeconomic Strategy, the BLM commissioned an external assessment of its social science needs and capabilities. The Socioeconomic Needs Assessment was conducted by a team of economists and sociologists from four western universities.⁴⁰ The team reviewed current social and economic analyses within BLM planning documents, spoke with BLM’s social science staff, administered a telephone survey to BLM employees, and conducted interviews with members of BLM’s Resource Advisory Councils. The assessment was guided by an oversight committee of over twenty BLM managers and program staff, drawn from the WO, state, district and field offices, the National Training Center, and the National Operations Center (NOC). (See inside cover.) The findings of the Assessment Report resulted in many of the recommended strategies and actions presented in Section 3. Given the length of the Assessment Report, which is available online (), only a few of the findings are noted here.⁴¹

(1) **BLM socioeconomic staff.** Interviews with current and former BLM socioeconomic staff provided a good ‘insider’ perspective regarding the state of the program. Some reported observations:

- “There is not a career track for social scientists in BLM.”⁴²
- “Cross training of social scientists would be desirable.”⁴³
- “There is little time for collecting primary data. This is especially a problem for sociology since the issues tend to be community based.”⁴⁴
- “Monitoring for adaptive management will not likely take place given competing demands. . . . Adaptive management requires good [socioeconomic] monitoring.”⁴⁵

(2) BLM employees. Over 1,200 managers and staff participated in a telephone survey. In addition to multiple choice survey questions, the study included several open-ended questions, such as: “Please describe how a resource management plan could make effective use of social science information?” Responses to the open-ended questions provide a rich source of insight into the practical challenges in effectively using socioeconomics at the BLM. Especially relevant survey findings are presented below.

- 10 percent of those surveyed had earned a degree in a social science, including economics. Another 31 percent had some coursework or other formal training in the social sciences.⁴⁶ This pool of BLM employees offers an important resource in building the Bureau’s capacity beyond the small cadre of social science specialists.
- The primary responsibility for preparing social and economic analyses rests with BLM staff other than social scientists (51 percent of responses), followed by BLM socioeconomic staff (13 percent) and contractors (12 percent). Another 12 percent agreed that “no one addresses these issues.”⁴⁷ This finding demonstrates the need to improve the socioeconomic knowledge and skills of those BLM staff actually guiding such analyses.
- Employees were asked: “What would you do to enhance the use of social science research other than by new staffing?” 24 percent of those surveyed called for more socioeconomic education and training for BLM staff. Other responses included: contract for assistance, conduct more research, build awareness, increase communication with the public, and develop manuals, handbooks, and tools. (See Figure 1.)⁴⁸
- BLM staff place a high value on socioeconomic information, but feel it is not used effectively.

In developing plans and assessing projects, 66 percent of those surveyed rated the value of socioeconomic information “high” or “very high” (on a 5-point scale).⁴⁹ In developing field office implementation actions, 60 percent rated the value of socioeconomic information “high” or “very high.”⁵⁰ In contrast, the assessment of how well such information is actually used is far less positive. In preparing land use plans, only 38 percent felt that socioeconomic information is used “well or very well” (on a 5-point scale).⁵¹ In determining implementation actions, only 23 percent felt that socioeconomic information was used “well or very well.”⁵² (See Figure 2.)

In addition to questions addressed to all BLM staff, the survey included questions regarding the use of socioeconomic data specific to particular programs, including Grazing, Recreation, Wildland Fire, Forestry, Energy and Minerals, and Lands and Realty. The findings of these questions will be shared with program staff (see Section 3, Strategies 1.1 and 2.1).

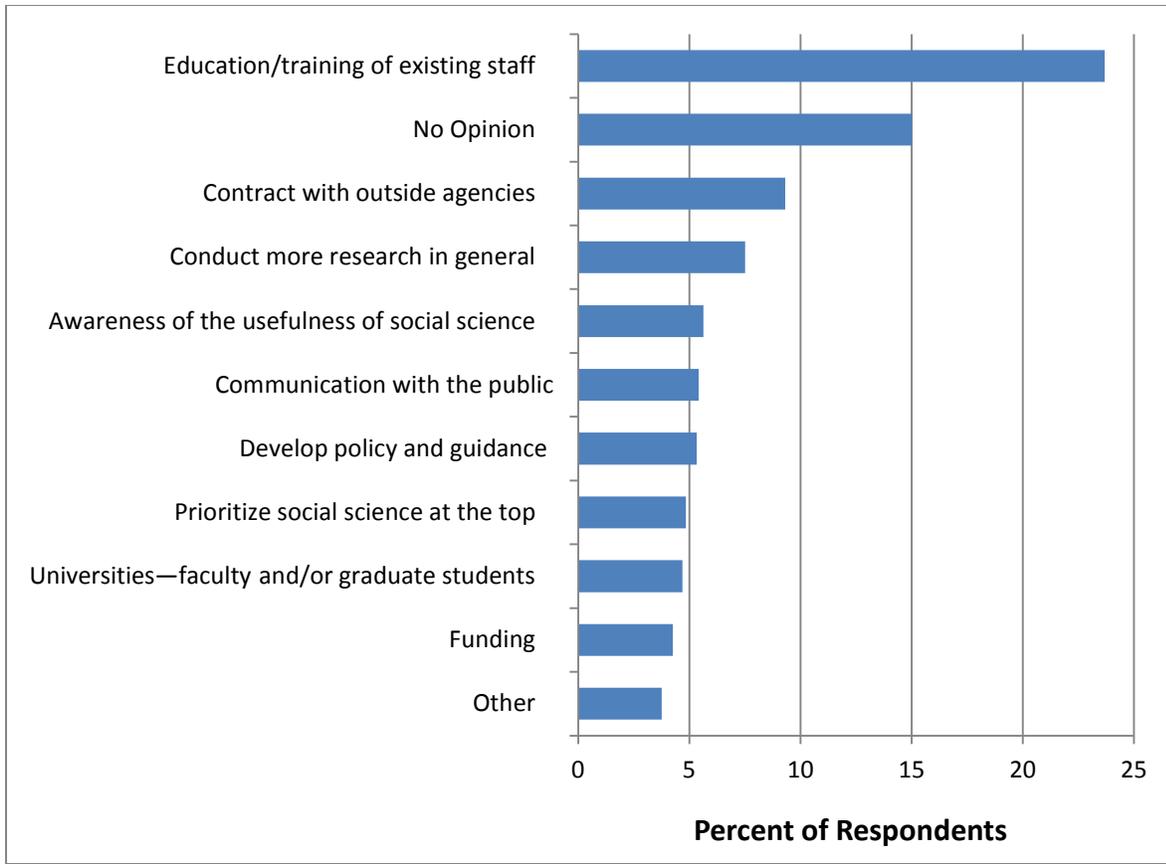


Figure 1 - What would you do to enhance the use of social science research other than by new staffing? (BLM staff survey)

(3) Resource Advisory Council members. For an external perspective on BLM’s socioeconomic needs and capabilities, the assessment team conducted phone interviews with 90 Resource Advisory Council (RAC) members, a 38 percent sample.⁵³ RAC membership is intended to reflect a balance between commodity, conservation, and governmental / public interests. While overall the views of the RAC members were highly varied, the interviews offer relatively consistent responses to some key questions.

- Most RAC members felt that in advising the BLM, socioeconomic issues had high importance. Nearly 80 percent of members representing commodity and governmental / public interests rated socioeconomic issues ‘high’ (on a three-point scale), compared to about 45 percent for members representing conservation interests.⁵⁴
- RAC members were generally satisfied by the quality of BLM’s socioeconomic analysis. Overall, 59 percent were ‘satisfied’ or ‘very satisfied’ (on a 5-point scale), though fewer members with commodity interests (46 percent) and more members with conservation interests (68 percent) expressed that level of satisfaction.⁵⁵
- A different picture appears when RAC members were asked whether the BLM has *adequately addressed* the economic, social, and environmental justice effects of its decisions (See Figure 3).⁵⁶

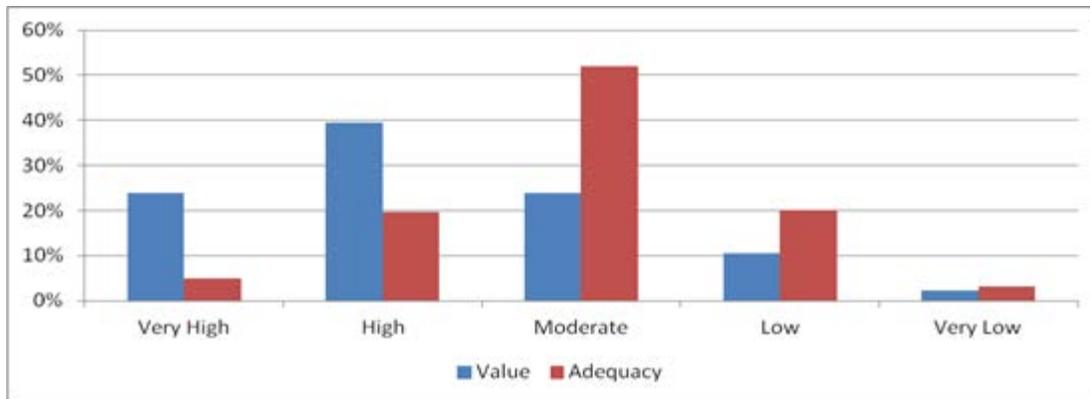


Figure 2 - Value and Adequacy of Social Science Information for Project Implementation (BLM staff survey)

Regarding *economic effects*, about 50 percent of RAC members with commodity interests responded positively, somewhat more for conservation interests, and only about 35 percent for governmental and public interest members.

- “No, they can do a much better job of it, but they are shorthanded and need more [funding], and we shouldn’t blame the field-level personnel because they are already pulled in too many directions.”⁵⁷
- “There is no long term data to back up anything and the data they have is not updated.”⁵⁸

Regarding *social effects*, only 30 percent of commodity interest members responded positively, with somewhat more positive responses from conservation and governmental / public interest members.

- “No, I don’t think they recognize the impacts that decisions can have on communities. We don’t see any difference of approach to their managing oil and gas development with \$140/ barrel oil than we did at \$20/ barrel oil, so there is no reaction to circumstances.”⁵⁹

Regarding the *effects on minority, low income, and tribal populations* (environmental justice), 60 percent of commodity interest members responded positively, compared to 50 percent for conservation interest members and about 45 percent for governmental / public members.

- “We need a better understanding of social structures, interactions of communities, compatibility of types of data. There is not enough staff to harvest, compile, prepare and distribute the data.”⁶⁰

The most important theme to emerge from the RAC interviews is a broad concern with the adequacy of how the BLM assesses and responds to the social and environmental justice effects of its resource management decisions. A second theme follows from the RAC members’ strong interest in socioeconomic issues and their extensive knowledge of regional socioeconomic conditions. Given these facts, there is great opportunity to work with the councils on a systematic basis, to identify the socioeconomic information most relevant to outside constituencies, strengthen outreach on socioeconomic issues, and gain an external perspective on improving the mitigation of social and economic effects.

- “The BLM could use the RAC more to go into the communities and put on meetings or seminars.”⁶¹

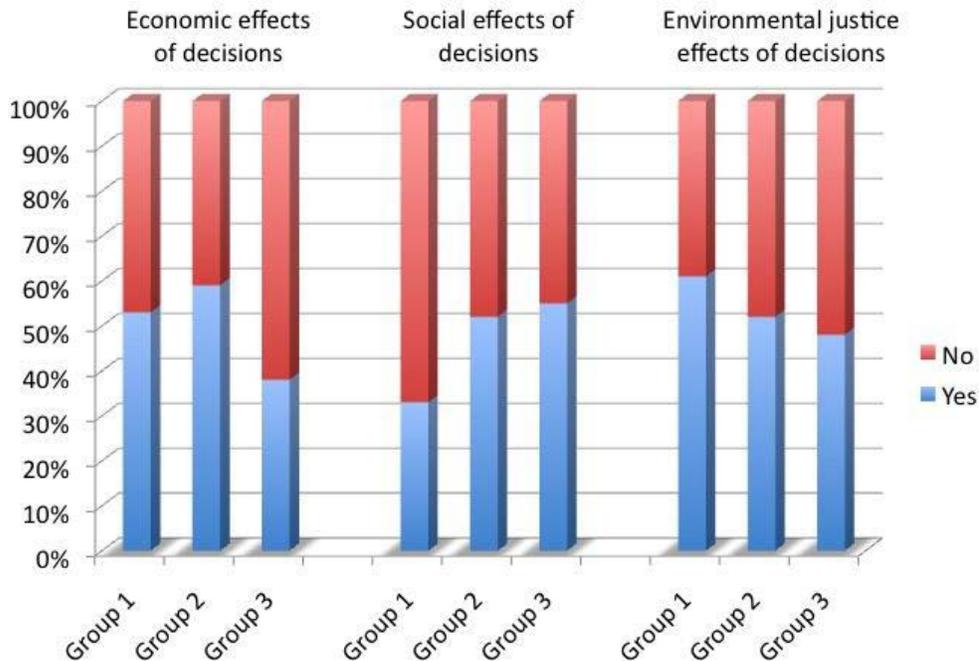


Figure 3 – BLM RACs were asked the following question: “In making resource decisions, has the BLM adequately addressed the economic, social, and environmental justice effects of its decisions?” (RAC interviews: Group 1 = commodity interests; Group 2 = recreation & environmental interests; Group 3 = public and governmental)

BLM Socioeconomics Program accomplishments

Despite the limitations identified by past efforts and the recent Socioeconomic Needs Assessment, a review of the Socioeconomics Program’s activities over the past few decades shows that much has been accomplished.

Guidance. By the early 1980s the BLM had developed a substantial socioeconomic manual and handbook system, dealing with topics such as planning, mineral valuation, benefit-cost analysis, and impact assessment. Other guidance was issued on socioeconomic analysis of grazing decisions⁶² and socioeconomic mitigation.⁶³ Prompted by the community-level effects of widespread coal leasing, in 1982 the BLM issued the *Guide to Social Assessment*, a substantial work later published commercially by Westview Press.⁶⁴

Many socioeconomic guidance documents were eliminated in the 1996 (“reinventing government”) reduction of regulations and policies. In 2011 only a few socioeconomic documents remain in BLM’s system of handbooks: Appendix D of the 2005 Land Use Planning Handbook,⁶⁵ and guidance on both coal and oil and gas valuation.⁶⁶ Other guidance has been issued under instruction memoranda, such as minimum qualifications for contractors.⁶⁷

Training. In 1983 the BLM developed a training program on social and economic impact assessment, based on the *Guide to Social Assessment*.⁶⁸ In 2002 the National Training Center (NTC) developed a new course, Social and Economic Aspects of Planning, to support the congressionally mandated effort to expedite revision of BLM’s resource management plans. This three-day, in-person course was offered annually through 2007 and received very positive assessments. Reduced training budgets prompted its conversion to a 12-hour web video format, but the course has attracted little interest as a distance learning package.⁶⁹

To meet a broader training need and to provide an introduction to socioeconomic methods that could serve as a foundation for more specialized courses, NTC initiated a much shorter online training, *The Human Landscape*. The course presents a number of economic and social analyses addressing realistic field office problems. It is scheduled for completion in FY 2012.

Technical Support. To compensate for the declining number of state offices with socioeconomic staff, in 2007 the NOC established interagency agreements with both Forest Service (USFS) TEAMS and the U.S. Geological Survey’s (USGS) Policy Analysis and Science Assistance group to provide socioeconomic assistance for field offices preparing plans and project EISs. USGS has also provided support for national socioeconomic initiatives.

Outreach Publications. While the information provided by BLM’s Socioeconomic Program has largely been directed at meeting regulatory requirements, such as impact analysis under NEPA, the program’s aims have recently expanded to support outreach to the public and constituencies.

In 2009 the Interior Department initiated an annual report on the economic impacts of its bureaus’ programs and activities. Developing estimates of economic activities associated with BLM-managed lands and resources required a team of ten economists, including five from other agencies.

The BLM issued a factsheet highlighting these economic data in 2011 (see box).⁷¹ A standalone report, describing the social and economic effects of BLM’s programs at both national and community scales, is in preparation.

In FY 2010 the BLM’s programs made possible some 550,000 American jobs (25 percent of job contribution attributable to DOI’s programs and activities) and \$122 billion in total economic output (34 percent of the total output attributable to DOI), using only 15 percent of the Department’s payroll and 7 percent of the Department’s total budget authority. ⁷⁰
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Tools. Over the past decade the BLM has supported the development of tools intended to make socioeconomic information more accessible.

(1) Economic Profile System (EPS). In 1998 the BLM’s Socioeconomics Program began a partnership with the Sonoran Institute (and later with Headwaters Economics) to produce a software application offering access to economic and demographic data in a format readily used and understood by non-specialists. Originally developed to foster collaboration with the public over BLM’s planning goals, EPS was quickly adopted as a tool for internal use. There are also thousands of public users. A greatly expanded application, now funded jointly by the BLM and the U.S. Forest Service, was released in 2011.⁷²

(2) Assessment of Socioeconomic Planning Needs (ASPN). This web-based expert system provides advice on the appropriate economic and social assessment methods to use for a plan or

project assessment, based on responses to series of questions. ASPN is being developed by the USGS with funding from the BLM, the USFS, and the National Park Service.

Initiatives. A growing share of the socioeconomics workload involves finding new approaches to address bureau-wide challenges and emerging program needs.

(1) Recreation benefits. Identifying the economic benefits of recreation on BLM lands remains challenging. The Socioeconomics Program is assisting Recreation and Visitor Services to identify the most cost-effective and defensible methods for surveying visitor use and estimating visitors' expenditures.

(2) Community growth. The rapid expansion of many western cities has placed increasing demands on BLM-managed lands and resources. To better anticipate the effects of growth, BLM's Socioeconomics Program is partnering with the USGS to assess several community growth models for use in preparing resource management plans.

(3) Ecosystem services. While the BLM routinely estimates the jobs and income generated by the development of commodities such as oil and gas or timber, it is far more difficult to quantify the economic benefits of healthy ecosystems, often termed *ecosystem services*. To assess the potential for expanding the range of economic benefits considered in BLM's resource decisions, the Socioeconomics Program has partnered with the USGS to evaluate computer-based tools and other economic methods for valuing ecosystem services.

(4) Environmental restoration benefits. Many BLM programs contribute to the restoration of healthy ecosystems, but we lack good data on the economic impacts of these efforts in jobs and output. BLM's Socioeconomics Program is supporting a new effort by USGS and USFS to correct this omission through a survey of businesses and an analysis of the economic contributions made by federal restoration activities.

(5) Human dimensions of climate change. Beginning in FY 2012, BLM's Socioeconomics Program and Climate Change Initiative are partnering with USGS and other agencies to build a common framework for assessing the human dimensions of climate change. The project will identify methods, protocols, and indicators for describing those socioeconomic effects and adaptive responses most relevant to publically managed lands, waters, and resources.

2 - Needs and Responses

BLM's emerging socioeconomic needs

The drivers transforming the BLM's need for socioeconomic information, analysis, and problem solving can be described under three topics: communities, landscapes, and values. These ideas are linked and socioeconomics can be used to understand not only each of these topics individually but also the relationships between and within them.

Communities. Many of the factors shaping the BLM's external challenges, such as changing western economies and growing polarization over the values that should guide resource management, serve to increase the relevance of community perspectives in the BLM decision process. These include both communities of place (small settlements, growing towns, and large metropolitan areas) and communities of interest (such as ranchers, off-road vehicle users, and wilderness advocates).

- Community development. Bureau managers need reliable estimates of the economic benefits to neighboring communities and counties from program activities across BLM districts, to complement the national and State Office economic data now available.
- Impacts of extractive industries. Many sectors such as oil and gas are subject to major fluctuations in production (boom and bust). To plan effectively for both sides of this cycle, local governments need more detailed projections of project-driven revenues, employment, housing impacts, and demand on public services. (See Figure 4.)
- Urban growth. BLM and local government planners need practical ways to model how changing populations and expanding urban footprints will affect the demand for recreation and other uses of the public lands.
- Environmental justice. As noted by RAC members, BLM planners need better analyses of the effects of proposed actions on community subgroups, particularly the potential effects on minority, low income, and tribal populations.
- Subsistence. BLM biologists and planners need better information on subsistence requirements of rural communities in Alaska and many other western states. Such baseline information, usually obtained through collaborative ethnographic studies, is essential to assess the impacts of plans and projects on subsistence uses. (See Figure 5.)

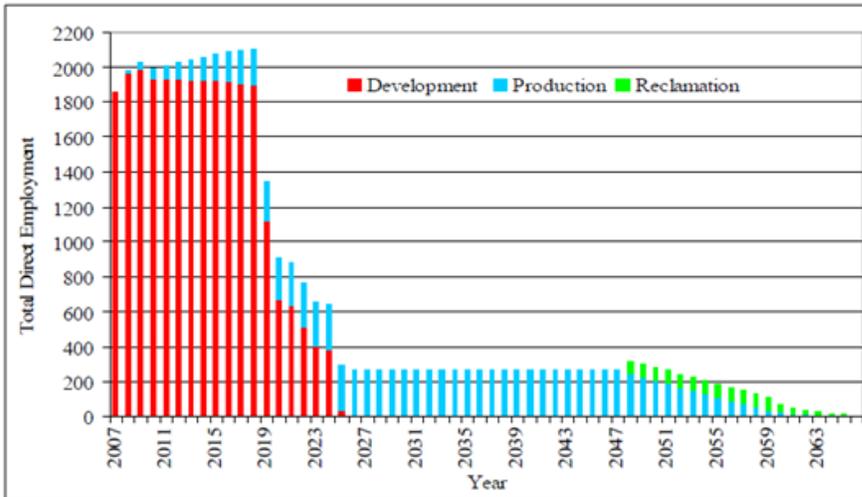


Figure 4: Projected Oil & Gas Direct Employment under Pinedale RMP⁷³

Landscapes. Today the BLM is challenged by new conditions and resource demands that cannot be addressed effectively within the boundaries of a single field office. Examples include climate change, the large-scale degradation of sage grouse and other critical habitat, the loss of ecological connectivity, and the siting of very large renewable energy facilities. Directly or indirectly, most of these changes are driven or affected by human activities. To respond, the Bureau has begun landscape-scale Rapid Ecoregional Assessments (REAs) which cross jurisdictional boundaries. The REAs bring together biophysical data with socioeconomic data—for example, information on urban development or the growth of road networks—in order to understand the natural and human influences that are shaping the environment.⁷⁴

The emphasis on landscape-level assessments challenges BLM’s use of socioeconomic, which until recently operated with little reference to the models, data, and research objectives of other disciplines and programs. In the future, many of the most important problems for science and policy at the BLM will involve the interaction of social, economic, and geographic factors with biophysical processes. This will require integration of socioeconomic data with BLM’s evolving system for data management, including geospatially organized data sets. Substantively it will require integrating socioeconomic variables into models of ecological change.

Grazing on the public lands provides a good example of the challenges in modeling change at a landscape scale. Grazing can play a positive role in stabilizing degraded sagebrush steppe environments.⁷⁵ When grazing is conducted properly, base ranch properties also provide an ecologically preferable alternative to land use conversion to subdivisions and other urban development, by limiting landscape fragmentation and maintaining ecological connectivity.⁷⁶ A proper assessment of the costs and benefits of public lands grazing requires a model of landscape change that integrates biophysical and socioeconomic factors at appropriate geographic and temporal scales.

Climate change, which affects a wide range of BLM and other DOI programs, provides the best example of the need to understand the bidirectional linkages between biophysical and

socioeconomic systems at a landscape scale.⁷⁷ In the Arctic, for example, permafrost thaw, altered stream flows, and the displacement of tundra by boreal forest drive numerous habitat changes that in turn reshape both formal and subsistence economies.⁷⁸ Similarly, programs to build ecological resilience and conserve biodiversity – key objectives of the Landscape Conservation Cooperatives (LCCs) – must reflect an understanding of local social systems, so that human communities benefit as conservation programs alter land use practices.⁷⁹

Species	Winter					Spring		Summer			Fall	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Fish	■							■	■	■	■	■
Birds							■	■	■	■	■	■
Berries										■	■	
Furbearers	■	■	■	■	■							
Caribou	■	■	■	■	■	■		■	■	■	■	■
Polar Bear			■	■	■		■	■				
Moose										■	■	
Seals	■	■	■			■	■	■	■			
Walrus								■	■	■		
Bowhead						■	■	■	■	■	■	■
	No to Very Low Levels of Subsistence					Sources: SRBA and ISER (1993) and SRBA (2003a).						
	Low to Medium Levels of Subsistence											
	High Levels of Subsistence Activity											

Figure 5: Annual Cycle of Subsistence Activities – Barrow, Alaska⁸⁰

Values. Resource management involves weighing the competing sets of values that distinctive groups place on landscapes, resources, and activities. Such values take several forms, each documented through distinct socioeconomic methods.

- *Market values* reflect the supply and demand for various goods and services, including the value of commodities produced from BLM-managed resources and the wages earned in producing those commodities.
- *Nonmarket environmental values* provide monetary estimates of the benefits individuals attribute to experiences of the environment, for example the value individuals place on a whitewater rafting trip.
- *Ecosystem services* estimate the value of human benefits from healthy ecosystems, for example potable water from groundwater recharge or flood control from intact wetlands.⁸¹
- *Social values* reflect meanings that communities or other groups give to particular places, events, and practices: the Gettysburg Battlefield, hunting caribou for Alaska’s rural villages, a ranching way of life for many western rural communities.

While BLM’s capacity to estimate market values is the furthest developed, effectively documenting each of these categories of value will require significant effort by BLM’s Socioeconomics Program. Specifically, this entails the development of (1) appropriate data sets, (2) additional tools and methods feasible for field office use, and (3) more extensive training, guidance, and technical support. A systematic effort to recognize the costs and benefits associated with all four categories of value will help the BLM better meet its multiple use mandate, progressing toward the BLM mission to “sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.”

BLM’s strategic responses

BLM’s growing need for reliable and relevant socioeconomic information requires a variety of organizational responses. These fit into three broad categories: workloads, people, and processes. *Workloads* identifies four key socioeconomic capabilities, each with particular audiences and timeframes, which form the core of the BLM Socioeconomics Program. *People* summarizes internal staffing, external expertise, and the dissemination of socioeconomic training and tools across the Bureau. *Processes* outlines procedures to improve communication about the socioeconomic needs of offices and programs, the development of policy and guidance, and methods for quality control.

Workloads. BLM managers and staff, from field offices through the Director’s office, have identified four core socioeconomic workloads. They include:

(1) Regularly conducted socioeconomic analyses. This workload examines the social and economic impacts of BLM actions through NEPA and the Bureau’s planning process. It also assists the Bureau in meeting annual GPRA reporting requirements and provides quality assurance and contract oversight for social, economic and environmental justice portions of plans and project assessments. Examples include:

- analyzing the social and economic impacts of proposed oil and gas development, and
- conducting customer satisfaction surveys for program reporting.

(2) Applying methods and tools to address new challenges, including BLM and DOI initiatives. The socioeconomic program contributes information on the human dimensions of new challenges and initiatives. Examples include:

- valuing the benefits of carbon sequestration and other ecosystem services,
- designing cost-effective measures for estimating the economic benefits of recreation, and
- preparing BLM elements of the annual DOI Economic Report.

Climate Change in the American West

“In the past decade, it has become impossible to overlook the signs of climate change in western North America. They include soaring temperatures, declining late-season snowpack, northward-shifted winter storm tracks, increasing precipitation intensity, the worst drought since measurements began, steep declines in Colorado River reservoir storage, widespread vegetation mortality, and sharp increases in the frequency of large wildfires. These shifts have taken place across a region that also saw the nation’s highest population growth during the same period.”⁸²

(3) Socioeconomic support for immediate management concerns. BLM managers and staff often need to respond to short-term challenges that can benefit from socioeconomic information or analysis. Currently there is little capacity to provide socioeconomic information in the timeframe of one day to one week, realistically the turnaround often required for WO and State Office policy issues. Examples include:

- documenting the economic value of protected public lands for adjacent communities, for an Office of Management and Budget briefing; and
- developing a spreadsheet to estimate the changes in jobs and output associated with alternative Forestry Program budgets.

(4) Program- or state-specific socioeconomic priorities. Several states and programs have specific social and economic issues that require dedicated staff support. This workload is often defined by specific resources or legislative mandates, and may not apply Bureau-wide.

Examples include:

- coal valuation for lease sales in Wyoming, and
- identifying subsistence use areas and resources used by Alaskan villages.

Meeting BLM's socioeconomic workloads in a cost-effective way will require an appropriate balancing of internal staffing with reliance on the socioeconomic capabilities of other federal agencies, universities, nonprofits, and contractors. These solutions are described below and in Section 3, Strategies.

People. BLM's greatest asset is its staff. While there are few socioeconomic positions across the Bureau, their expertise and practical experience with BLM's programs constitutes a critical resource. As budgets permit, BLM's professional socioeconomic expertise should be strengthened through recruitment of well-qualified individuals with interest and skills relevant to new management challenges. In addition, other BLM staff whose programs need socioeconomic information and analyses should have access to clear guidance, effective web-based and instructor-led training, and useful decision-support tools.

The BLM's need for socioeconomic information and support cannot be met solely through internal staffing. The Socioeconomics Program should leverage its partnerships with other federal agencies, contractors, non-profits, and universities. Nonetheless, many activities cannot be effectively outsourced. BLM staff are in the best position to understand the socioeconomic aspects of the Bureau's diverse programs, from large-scale renewable energy development to wild horse management and wildland fire planning. BLM socioeconomic expertise is required to ensure that externally provided information and analysis are relevant, credible, and sound.

Processes. An effective Socioeconomics Program requires appropriate procedures for identifying workload priorities, developing needed guidance and tools, and assuring the quality of work products.

(1) Consultation. Socioeconomic workload priorities should reflect the needs of field offices and programs. To ensure that the dollars supporting socioeconomic analysis are well spent, it is essential to have regular communication between users and providers—across programs and at various levels of management, including Bureau and State Office leadership. The BLM employee survey conducted for the Socioeconomic Needs Assessment provided numerous suggestions for new tools, guidance, and information.

Many of BLM's constituencies have strong interests in the validity and relevance of the Bureau's socioeconomic information and analysis. These include Tribal governments, county governments, Resource Advisory Councils (RAC), and non-governmental organizations such as environmental, recreation, and industry groups. As feasible, socioeconomic program staff should consult with these external stakeholders to identify the types of socioeconomic information and analysis they need.

(2) Policy, guidance, and tools. In the employee survey conducted for the Socioeconomic Needs Assessment, many expressed the need for better socioeconomic guidance. More comprehensive guidance will help ensure that the Socioeconomics Program is employed effectively and consistently across the Bureau

To make use of socioeconomic information and analyses, managers and program staff must understand what is available, where it can be accessed, and how it can be used in the Bureau's decision-making process. New information needs identified by consulting BLM managers and staff should be met whenever possible by using existing data sets, tools, and other resources. Where this is not feasible, new socioeconomic tools may need to be developed.

(3) Quality assurance. Several laws, regulations, and policy mandates have established a high standard for the information that executive branch agencies use to inform management decisions. These include the Information Quality Act, OMB policy on peer review, and DOI policy on scientific integrity.⁸³ To comply with these requirements, the BLM needs quality control and peer review processes to guarantee that socioeconomic information and analyses prepared by the Bureau or its partners are sound, unbiased, and defensible.

Conclusion

A successful and sustainable Socioeconomics Program can be defined in many ways. At a minimum, the Bureau's social scientists must be readily available to assist staff and managers with their immediate as well as ongoing socioeconomic needs. They must provide both "in-reach" to BLM staff and outreach to the larger social science and resource management communities.

BLM staff who are supported by the Socioeconomics Program must be familiar with available socioeconomic tools and resources. While they may not know how to use every tool, they must have the knowledge and confidence to access those that are most valuable to their particular program or region.

Section 3 of this Strategy identifies goals and actions that enhance the BLM's collective ability to understand the human context and consequences of its decision-making. The American West will continue to change; the expectations placed on BLM's resource management will evolve with corresponding speed. A strong Socioeconomics Program will allow the BLM address these challenges, now and in the future.

3 - Goals and Strategies^a

Goal 1:

Ensure that BLM's socioeconomic capabilities support policy mandates, management priorities, and program needs

Strategy 1.1

Consult regularly with BLM leadership, managers, and staff to identify and prioritize changing needs for socioeconomic information and support.

Communication between the Socioeconomics Program and the BLM as a whole is vital to ensuring that we are meeting the needs of other programs, field offices, and state and national leadership. BLM managers and staff have already identified several questions of particular interest, including:

- How are new user groups changing the demand for recreation on the public lands?
- What demographic and economic trends have implications for BLM's resource management?
- How will climate change impact communities in Alaska and the rural west?
- What is the public's perception of tradeoffs involving renewable energy siting on the public lands?

Actions

- (a) Establish a Socioeconomic Advisory Committee, with members drawn from WO programs, state offices, field offices, and centers, to help ensure that BLM's socioeconomic capabilities are responsive to emerging issues and organizational needs.
- (b) In consultation with the Socioeconomic Advisory Committee, develop an annual socioeconomic work plan to prioritize activities, including training, guidance, publications, tools, and commissioned research.
- (c) Increase coordination and transparency of BLM socioeconomic activities by soliciting BLM staff for input on the annual work plan, and making both comments and the completed plan available for internal audiences. Review comments from the 2008 BLM employee survey, conducted for the Socioeconomic Needs Assessment, as input to the work plan.
- (d) Share work plan and solicit direction annually from the Executive Leadership Team on BLM priorities requiring socioeconomic support.
- (e) Provide semiannual updates for the Field Committee and the Deputy State Directors' Committee on socioeconomic issues and priorities, focusing on work plan action items and implementation of the strategic plan.

^a Strategies chart in separate file, to appear on inside front or back cover.

- (f) Participate in national BLM program meetings to identify opportunities for improved socioeconomic support.
 - (g) Attend state leadership team meetings to share information on emerging state-specific socioeconomic issues and ensure field offices receive needed socioeconomic support.
-

Strategy 1.2

Develop socioeconomic information and procedures that will enhance the ability of BLM's managers to understand and communicate with their constituencies.

Socioeconomic information on the benefits of BLM's programs and permitted actions can be a valuable means of outreach to local and national constituencies. Tools such as the Economic Profile System (EPS), which provides a variety of reports on county-level economic and demographic trends, can help field managers identify opportunities for cooperation with Tribal, state, local government partners in community development.

Actions

- (a) Using data developed for the annual *Interior Department Economic Report*, work with Public Affairs and Washington Office programs to prepare *The Human Dimensions of the BLM Mission*. This report will use narrative, graphics, and photos to describe economic and social contributions of programs of particular interest to BLM's constituencies.
 - (b) Identify better methods for estimating the economic benefits of non-commodity uses of the public lands (including recreation and ecosystem services), and provide technical support to help implement them.
 - (c) Link socioeconomic information and tools with BLM's geospatial capabilities. Projects could include linking EPS with geographic information system (GIS) technologies, mapping community values through public participation, and developing a socioeconomic atlas of BLM resources.
-

Strategy 1.3

To the extent feasible, ensure that BLM's socioeconomic information is relevant to the interests of key constituencies.

In addition to responding to internal socioeconomic needs, the BLM has a responsibility to provide data and analyses to a variety of external audiences. For example, county commissioners in western Wyoming have urged the BLM to provide more detailed projections of the social and economic impacts of oil and gas development, to better anticipate changes in demand for public services. Environmental and industry groups have also expressed interest in

the specific socioeconomic models and approaches the BLM is considering for implementation, such as methods for valuing ecosystem services and the economic contributions of specific sectors such as ranching and hard rock mining.

Actions

- (a) Consult with the BLM's Resource Advisory Councils to solicit advice on the types of socioeconomic information that would be most useful to the councils and the public.
- (b) Consult with the BLM's Native American Coordinator and its liaison to state and local governments to identify the types of socioeconomic information and analysis needed by these groups.
- (c) Coordinate with the BLM's Appropriate Dispute Resolution (ADR) staff to document and share relevant socioeconomic information through collaborative stakeholder working groups and other processes.
- (d) Improve external access to socioeconomic information and analysis that are produced or compiled by the BLM.

Strategy 1.4

Provide socioeconomic support for statutory and policy mandates.

While both FLPMA and NEPA require the BLM to use the social sciences to consider the human impacts of proposed actions,⁸⁴ there are also more specific legal requirements relevant to identifying the Bureau's needs for socioeconomic support. Examples include environmental justice requirements and subsistence resource rights.

1.4-1. Environmental Justice

The 1994 Executive Order on environmental justice requires federal agencies to identify and address "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."⁸⁵ It can be difficult to translate these principles to BLM's operations, where land use allocations can span several million acres. Roughly half of the Resource Advisory Council members interviewed for the Socioeconomic Needs Assessment felt that the BLM did *not* adequately address the environmental justice effects of its decisions.⁸⁶

Actions

- (a) Participate in the DOI Environmental Justice Working Group, to promote the consistent application of environmental justice principles across the Department.
- (b) Disseminate information on the newly revised DOI Environmental Justice Strategic Plan, and coordinate BLM's implementation of applicable requirements.⁸⁷
- (c) Support BLM's State Office environmental justice coordinators through periodic conference calls and other information sharing.

- (d) Consistent with the DOI Environmental Justice Strategic Plan, develop guidance on applying environmental justice principles in BLM’s resource management decisions, addressing outreach, analysis of disproportionate impacts, and mitigation.

1.4-2. Rights to subsistence resources

Federal obligations to tribes over access to resources are based in treaty, statute, and case law. BLM’s primary framework for meeting its tribal responsibilities is the government-to-government relationship. Many issues requiring consultation with tribal governments, such as balancing tribal access to subsistence resources with proposed energy development, require sound socioeconomic information to identify workable solutions. In addition, the Alaska National Interest Lands Conservation Act (ANILCA) specifies additional requirements for ensuring the opportunity for subsistence use by rural Alaskans.⁸⁸ Interviews and other ethnographic methods can provide important documentation of tribal use of lands and resources and the potential effects of BLM’s actions.

Actions

- (a) In conjunction with BLM’s coordinator for Native American and Alaska Native issues, work with state office tribal liaisons to assess the need for improved guidance on documenting and analyzing impacts to subsistence and other native resource uses. Develop guidance as needed.

Strategy 1.5

Strengthen the BLM’s capacity to support Tribal, state, and local governments’ community development initiatives.

The BLM’s resource management decisions can have a major impact on the economic and social conditions of counties and regions. BLM’s requirement under FLPMA to coordinate its resource management plans with plans and programs of Tribes, states, and local governments is particularly relevant to supporting community development efforts.⁸⁹ This can mean supporting plans to put local economies on a more diversified and sustainable footing. Examples include participation in regional ecotourism initiatives, the promotion of historic and archaeological sites as visitor destinations, and support for stewardship contracting for fuels treatment and use of small-diameter logs. BLM’s socioeconomic staff can be an important resource for such efforts.

Actions

- (a) Working with field offices, BLM’s liaison to state and local governments, and its coordinator for Native American and Alaska Native issues, compile examples of participation in local community development initiatives for inclusion on the socioeconomic SharePoint site.
- (b) Working with external partners as appropriate, develop a guide for field managers and planners on supporting community development initiatives, including case studies of pertinent projects or partnerships.

Goal 2:

Manage BLM's internal and external socioeconomic capabilities to provide sound and cost-effective support for offices and programs.

Strategy 2.1

Enhance BLM's internal capabilities to meet the Bureau's current and emerging socioeconomic needs.

As noted in the review of staffing trends (page XX), the number of BLM socioeconomic staff currently employed is between one-quarter and one-third of the number employed in the early 1980s. Today only five of twelve BLM State Offices have any socioeconomic staff. Yet building capacity is a prerequisite for improving the availability and relevance of socioeconomic information across the Bureau. Building socioeconomic capacity should involve a combination of careful additions to BLM's staff (considered here) and stronger institutional arrangements with external socioeconomic providers (considered in Section 2.2).

In 2011 BLM's Executive Leadership Team considered proposals for organizing socioeconomic and other scarce skills by zones, to ensure more consistent and cost-effective support for state and field offices. While these plans are still in development, the following action items presume that some form of zoned approach will be adopted. Any zoned organization of socioeconomic support will be designed to complement rather than replace the role of the NOC.

In addition to staff assigned entirely or primarily to a socioeconomic role, BLM has many employees with some knowledge of the social sciences. Almost 40 percent of employees surveyed had some social science course work, other training, or a social science degree.⁹⁰ Any plans for building BLM's internal socioeconomic capacity should make use of this resource.

Actions

- (a) Develop an inventory of socioeconomic workloads by office, center, and program and define the respective roles and responsibilities for socioeconomic staff at the field, state, center, and Washington Offices.
- (b) Working with the Socioeconomic Advisory Committee and BLM management, refine and as feasible implement a proposal for allocating socioeconomic staff to a series of geographically defined zones, to ensure consistent support across all state offices.
- (c) Define the required qualifications and competencies of staff providing socioeconomic support to ensure that the BLM's capabilities reflect an appropriate mix of disciplines. Use this information to obtain a range of competencies in future hiring.
- (d) Identify other BLM staff with significant socioeconomic training or experience and make this information available as an additional resource.

Strategy 2.2

Build external relationships to complement BLM's internal socioeconomic capabilities.

The Bureau's internal socioeconomic capabilities must be complemented by a wide variety of external resources, including private-sector contractors, other federal and state agencies, universities, and nonprofit organizations.

As of 2011, the NOC developed a blanket purchase agreement for socioeconomic services to involve multiple vendors. This is one of several steps planned to improve the accessibility and quality control for contracted work.

BLM's Socioeconomics Program has already established successful partnerships with both the USGS and Forest Service TEAMS. USGS has provided expertise for a number of emerging socioeconomic challenges, including the analysis of BLM's economic contributions for the annual *DOI Economic Report*, a feasibility study of ecosystem services tools, an assessment of urban growth models, and a study of the economic benefits of ecological restoration. TEAMS has provided field office support primarily by preparing or reviewing the socioeconomic elements of numerous plans and EISs.

While BLM does draw on academic experts in the social science disciplines, far more can be done to match socioeconomic needs across the BLM with appropriate faculty and students. The BLM is an active member of the Cooperative Ecosystems Studies Units (CESU) Network, a national consortium of federal agencies, academic institutions, and other partners working to provide applied research to support effective land and resource management.⁹¹

Actions

- (a) Ensure that BLM offices and programs have access to a range of qualified contractors to provide socioeconomic information and support.
 - Implement the Blanket Purchase Agreement to simplify contracting for socioeconomic services, and assess its effectiveness.
 - Develop a Bureau-wide quality control process for contracted work.
 - Establish a voluntary roster of qualified social science contractors.
- (b) Maintain or expand socioeconomic partnerships with USGS and Forest Service TEAMS. As appropriate, develop socioeconomic partnerships with other federal agencies.
- (c) Explore the feasibility of using Service First authority to streamline partnerships with other federal agencies, including USGS and FS TEAMS.
- (d) Leverage low- and no-cost research through universities, federal agencies, non-profit, and state or local government partners.
 - Develop a "socioeconomic portal" to provide researchers with access to potential BLM projects, and BLM offices with information on academic research interests.

- Solicit socioeconomic research projects from field, district, state, and Washington offices to populate the portal.
 - Use the portal to share the results of completed socioeconomic projects
- (e) Utilize interagency socioeconomic networks, such as the federal Social Science Roundtable, to share information and pursue common problems more effectively,

Strategy 2.3

Support BLM's socioeconomic staff through training, improved information sharing, and other professional development.

BLM socioeconomic staff need their own professional support, to ensure their effectiveness and opportunities for professional growth. This should include regular communication with a socioeconomic 'community of practice' and access to professional training and conferences to keep current in their disciplines.

Actions

- (a) Support professional discussion on emerging issues and methods through regular conference calls and webinars. Where feasible these should involve socioeconomic staff not only from the BLM but also from partner agencies.
- (b) Develop a program for professional development to retain and promote capable socioeconomic staff. Sufficient time to participate in these activities should be a required element of all socioeconomic staff workloads. This program should include:
 - Short courses on emerging socioeconomic issues and methods, provided in person or through distance learning;
 - Cross-training to improve capabilities across the range of social science disciplines (economics, cultural anthropology, sociology, and human geography); and
 - Participation in other programs' training to better understand the role and needs of BLM staff and managers.
- (c) As budgets allow, hold Bureau-wide Socioeconomic Program meetings at least every three years.
- (d) Develop sections of a Socioeconomic Program SharePoint site to facilitate staff discussion. See also Strategy 3.3.

Strategy 2.4

Coordinate support and funding across BLM programs to meet existing and emerging socioeconomic needs.

Currently, social sciences at the BLM are supported primarily by planning funds, though many programs across the Bureau benefit from socioeconomic information and analysis. For example, the Recreation and Visitor Services Program assesses visitor use through surveys; the Fluid Minerals Program requires an analysis of the socioeconomic impacts for proposed oil and gas field development. To better reflect these benefits, socioeconomic should be treated as a cross-cutting program, addressing workload implications and funding needs through budget justification and execution documents.

Actions

- (a) Develop measures to identify socioeconomic accomplishments across the Bureau. Communicate and track accomplishments, including feedback for BLM's existing budget and accountability systems (annual budget documents, activity-based cost management, and performance reporting).
- (b) Work with other programs to find broader funding for socioeconomic positions and projects.
- (c) Whenever feasible, maximize the reach of scarce funding by leveraging BLM dollars through cost-recovery and cost sharing with other agency and nonprofit partners.

Goal 3:
Ensure that BLM staff can obtain and apply sound socioeconomic information relevant to their programs.

Strategy 3.1

Develop policy and guidance for using socioeconomic information and analysis at the BLM.

Consistent application of social science tools and methods requires policy and guidance that are used across the Bureau. The Socioeconomic Needs Assessment and communication between the socioeconomic staff and other programs have identified the need for guidance on a number of topics.

Such guidance should address multiple audiences. Managers need to access socioeconomic information to support day-to-day actions and outreach to constituent groups. Program leads need guidance on socioeconomic aspects of their program activities, such as estimating the economic impacts of grazing preference decisions. Planners and other staff with responsibilities for overseeing socioeconomic analyses need a convenient desk guide identifying available data, resources, and support for providing information and analysis.

Action

Develop desk guides or a socioeconomic handbook to address the needs of multiple audiences. Much of this material must be developed collaboratively with program staff. Guidance is needed on a number of topics, including, but not limited to:

- Developing, implementing, and analyzing surveys;
- Using interviews and other ethnographic methods (in development);
- Analyzing the environmental justice consequences of plans and projects;
- Mapping and valuing ecosystem services (such as carbon sequestration, biodiversity conservation, and water provisioning);
- Estimating the local economic and social impacts of grazing program decisions;
- Using the expanded Economic Profile System in planning and community development; and
- Using urban growth modeling in resource management planning (in development).

Strategy 3.2

Establish an effective quality assurance process to ensure that the BLM's socioeconomic information and analysis is sound and unbiased.

To promote transparency and ensure compliance with federal policies on data quality and scientific integrity, the BLM should develop quality control and peer review processes for socioeconomic information and products.

Actions

- (a) Develop a quality control process that:
 - Ensures socioeconomic work produced by the BLM or its external partners is accurate and defensible,
 - Incorporates feedback to encourage individual and organizational learning, and
 - Provides for quick and thorough responses to requests for document review.
- (b) Working with internal and external audiences, establish a peer review procedure for socioeconomic tools and methods proposed for adoption at the BLM.

Strategy 3.3

Enhance communication and training to ensure the effective use of tools, models, and information.

It is important that the BLM provide resources to inform staff and managers of the availability of socioeconomic information and show how it can be used in a resource management context.

Actions

- (a) Create sections of the Socioeconomic SharePoint site dedicated to users of socioeconomic information at the Bureau. These resources would include:
 - BLM's socioeconomic policy and guidance
 - Socioeconomic tools, data, and methods
 - A forum for sharing information and questions
 - Useful socioeconomic studies, organized by topic
 - Research projects requested by BLM offices and programs for external partners to undertake (see Strategy 2.2(d))
 - Links to socioeconomic training and other resources, and
 - Good examples of previous socioeconomic analyses and research.
- (b) Continue development of socioeconomic training through NTC. Training should focus on a variety of audiences, including staff and managers at the field, state, and national level. Existing courses and courses in progress include:
 - Social and Economic Aspects of Planning
 - Economic Impact Analysis for Planning and NEPA
 - Reading the Human Landscape: three introductory online modules covering economic and social analyses for plans and projects (in development), and
 - Using the Economic Profile System: three brief web-X trainings.
- (c) Include socioeconomic training opportunities at BLM program meetings and workshops.

Strategy 3.4

Make effective use of existing knowledge by identifying and synthesizing such information in terms relevant for BLM staff.

There is considerable socioeconomic information relevant to public lands management currently available both inside and outside of the BLM. As identified by the Socioeconomic Needs Assessment, many field staff have degrees or coursework in one of the social sciences, and many have extensive informal knowledge of local socioeconomic conditions. The BLM should use both formal and informal socioeconomic information more effectively to support resource management decisions and day-to-day field activities.

Actions

- (a) Establish ways to regularly communicate current socioeconomic issues and sources of information to managers and field staff (e.g., a quarterly e-newsletter)
 - (b) Explore techniques for documenting the local socioeconomic knowledge of field staff, and use such information to strengthen plans and project assessments.
 - (c) Summarize existing research to meet the information needs identified through Goal 1, creating a series of “white papers” supporting BLM program activities and initiatives.
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Strategy 3.5

Develop tools to allow BLM staff without specialized expertise to access and apply socioeconomic information to meet program needs.

Tools incorporate socioeconomic expertise into procedures or systems to increase the ability of other BLM staff to carry out their work, while minimizing time and expense. The BLM generally develops such tools in partnership with other organizations, to share costs and leverage external expertise.

In partnership with the Forest Service, the BLM supports development of the Economic Profile System (EPS) to allow field managers and staff to access a wide range of information on local economic and demographic trends. The BLM is working in partnership with the USGS to evaluate the usefulness of models for estimating urban growth and software for valuing ecosystem services. The BLM is also partnering with the USGS and the National Park Service to design the Assessment of Socioeconomic Planning Needs, a web-based system to guide the selection of social and economic methods in preparing plans and NEPA documents.

Actions

- (a) Using input from the Socioeconomic Advisory Committee, establish a list of priority socioeconomic tools for future development.
- (b) Review results of the employee survey conducted for the BLM Socioeconomic Needs Assessment to determine what additional socioeconomic data and tools may be needed to support program activities.

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References

¹ Sect. 1 – RW. Graphics revised by JL. Section 2: JL draft 9/8. Footnote 70 corrected. 10/30 – RW edits to whole document. New mgmt summary. Ver. 3.1 – JL minor edits.

² “Social science: the study of society and of individual relationships in and to society, generally including one or more of the academic disciplines of sociology, economics, political science, geography, history, anthropology, and psychology.” BLM Manual 1601: Land Use Planning, 2000, Glossary, p. 5.

³ Timothy J. Finan, ed., *An Assessment of Climate Vulnerability in the Middle San Pedro River Valley*. Climate Assessment for the Southwest (CLIMAS), University of Arizona, Report Series: CL3-00, August 2000.

⁴ Greg G Brown, *Measuring national forest landscape values using an internet-based participatory mapping approach*. ISSRM 2007, Park City, Utah.

⁵ For information on the use of geographic models and techniques to enhance the analysis of a wide range of social science issues, see the web site of the Center for Spatially Integrated Social Science, <http://www.csiss.org/>.

⁶ See Sahotra Sarkar et al., “Biodiversity Conservation Planning Tools: Present Status and Challenges for the Future.” *Annual Review of Environment and Resources* 31:123-159, 2006.

⁷ 43 USC 1712(c)(2); 43 CFR 1610.4-3.

⁸ 42 USC 4332(2)(A).

⁹ 40 C.F.R. § 1508.14.

¹⁰ The Government Performance and Results Act, PL 103-62, Sec. 2(b)(4).

¹¹ Executive Order 12898, “Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations,” *Federal Register* 59:32 (February 16, 1994), section 1-101.

¹² The Department of the Interior’s revised Environmental Justice Strategy is available at: <http://www.doi.gov/oepe/justice.html>.

¹³ Robert N. Clinton, Nell Jessup Newton, and Monroe E. Price, *American Indian Law: Cases and Materials*. 3rd edition. Charlottesville, VA: The Michie Company, 1991, ch. 6.

¹⁴ The western states that more than doubled in population from 1970 to 2010 are, in order of relative growth: Nevada, Arizona, Utah, Alaska, Colorado, Idaho, New Mexico. Source: U.S. Census, 2010 Census Population Profile Maps; URL: http://www.census.gov/geo/www/maps/2010_census_profile_maps/census_profile_2010_main.html, accessed 7/31/11.

¹⁵ *Boom and Bust in the American West*. Center of the American West, Boulder, CO, University of Colorado, 2002, p. 3.

¹⁶ *Energy Development and the Changing Economy of the West*, Figure 7 (Wyoming personal income from mining compared to other sectors 1970-2005). Headwaters Economics (Bozeman, MT), 2009. URL: www.headwaterseconomics.org/energy, accessed 5/14/11.

¹⁷ *Impacts of Energy Development in Colorado With a Case Study of Mesa and Garfield Counties*, Figure 14 (difference in average wages in energy-related and other sectors, Garfield County, CO). Headwaters Economics (Bozeman, MT), 2008. URL: www.headwaterseconomics.org/energy, accessed 5/15/11.

¹⁸ *Economic Profile System*. Mining Report for Garfield County, Colorado. Headwaters Economics. URL: <http://headwaterseconomics.org/tools/eps-hdt>.

¹⁹ U.S. Census Bureau, *2010 Census Briefs: Overview of Race and Hispanic Origin* (C2010BR-02), p. 3. URL: <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>, accessed 5/15/11.

²⁰ Hispanic Americans composed 25 percent of the population of the twelve western states (AK, AZ, CA, CO, ID, MT, NV, NM, OR, UT, WA, and WY) in 2000, compared to 13 percent nationwide. Source: U.S. Department of

Commerce. 2000, Census Bureau, American Community Survey. Retrieved through Economic Profile System – Human Dimensions Toolkit, Demographics report, run date 5/15/11. URL: www.headwaterseconomics.org/eps.

²¹ American Indian Religious Freedom Act of 1978, Public Law 95-341. Alaska National Interest Lands Conservation Act of 1980, Public Law 96-487.

²² On the role of cooperating agencies in the preparation of environmental impact statements by Interior Department bureaus, see 43 CFR 46.225.

²³ For the number of sociologists employed, see “Loss of Sociological Expertise at the BLM,” draft issue paper, 1987 (?), p. 1. The estimate of approximately 40 economists assumes that in the early 1980s half of roughly 45 district offices and all state offices had at least one economist on staff, in addition to economists at the Washington Office and the Denver Service Center. The 1981 socioeconomic staff estimates do not include the Outer Continental Shelf program, then still part of BLM’s operations.

²⁴ Summary of interviews with socioeconomic staff. Assessment of Social and Economic Capabilities – USDI Bureau of Land Management [ASEC], 2009, p. 6.

²⁵ Table: BLM Socioeconomic Staffing (May 2011). The 2011 data exclude supervisors and other staff with no more than 10 percent time spent on socioeconomic work. Many individuals included in the staffing figures have other significant duties, for example in planning or the oil and gas program.

²⁶ Transmitted under Instruction Memorandum 81-315, March 11, 1981.

²⁷ 1981 Action Plan, p. 1.

²⁸ 1981 Action Plan, pp. 21-24.

²⁹ 1981 Action Plan, p. 27.

³⁰ 1981 Action Plan, p. pp. 1, 29.

³¹ 1981 Action Plan, pp. 37-38.

³² 1981 Action Plan, pp. 27, 30.

³³ BLM, Social and Economic Task Force Report, 1984, p. 2-8 (BLM Information Bulletin 84-289).

³⁴ 1981 Action Plan, p. 30 (“personnel”).

³⁵ BLM Social Science Initiative – Interim Report, Social Science Focus Groups, 1995, p. 3.

³⁶ BLM Social Science Initiative – Interim Report, Social Science Focus Groups, 1995, p. 6.

³⁷ BLM Social Science Initiative – Interim Report, Social Science Focus Groups, 1995, p. 4.

³⁸ BLM Social Science Initiative – Interim Report, Social Science Focus Groups, 1995, p. 5.

³⁹ BLM Social Science Initiative – Interim Report, Social Science Focus Groups, 1995, p. 2.

⁴⁰ External Assessment Team: John A. Tanaka, Oregon State University; Audie Blevins, University of Wyoming; Katherine Jensen, University of Wyoming; Neil R. Rimbey, University of Idaho; David T. Taylor, University of Wyoming; L. Allen Torell, New Mexico State University; J.D. Wulfhorst, University of Idaho.

⁴¹ [\[Internet link to Assessment Report\]](#)

⁴² Socioeconomic staff interviews, ASEC, 2009, p. 6. [“There is general consensus that there is not a career track for social scientists in BLM. . . . while other specialists seem to have both career tracks and training programs, there is little in the way of training for social scientists that will help them further their careers or to do better jobs.”]

⁴³ Socioeconomic staff interviews, ASEC, 2009, p. 5.

⁴⁴ Socioeconomic staff interviews, ASEC, 2009, p. 5.

⁴⁵ Socioeconomic staff interviews, ASEC, 2009, pp. 5-6.

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- ⁴⁶ Employee Survey, ASEC, 2009, Table 5, p. 65.
- ⁴⁷ Employee Survey, ASEC, 2009, Table 11, p. 74.
- ⁴⁸ Employee Survey, ASEC, 2009, Table 44, p. 127.
- ⁴⁹ Employee Survey, ASEC, 2009, Table 9, p. 70.
- ⁵⁰ Employee Survey, ASEC, 2009, Table 10, p. 71.
- ⁵¹ Employee Survey, ASEC, 2009, Table 17, p. 81.
- ⁵² Employee Survey, ASEC, 2009, Table 16, p. 80.
- ⁵³ RAC Interviews, ASEC, 2009, p. 294.
- ⁵⁴ RAC interviews, ASEC, 2009, Appendix D4, Question 5: “How important are social and economic issues to the RAC members as they formulate advice concerning BLM decisions?” Results are shown in Figure 5, p.301.
- ⁵⁵ RAC interviews, ASEC, 2009, Appendix D4, Question 14: “RAC interviews, ASEC, 2009, Appendix D4, Question 5: “Overall, how satisfied are you with the level of social and economic analysis in BLM’s resource management decisions?” Results are shown in Figure 10, p.318. Data are provided in Appendices D5, D6, and D7, Question 14.
- ⁵⁶ RAC interviews, ASEC, 2009, Appendix D4, Question 8: “In making resource decisions do you feel that the BLM has generally: a. Adequately addressed the economic effects of its decisions? b. Adequately addressed the social effects of its decisions? c. Adequately addressed the environmental effects of its decisions on minorities and low income residents (here, probe for tribal impacts)?” Results are shown in Figure 7, p. 308, which presents responses in yes/no format, coded from open-ended responses.
- ⁵⁷ RAC interviews, ASEC, 2009, Appendix D7, Question 8a (economic effects), governmental / public interests, p. 412.
- ⁵⁸ RAC interviews, ASEC, 2009, Appendix D7, Question 8a (economic effects), governmental / public interests, p. 412.
- ⁵⁹ RAC interviews, ASEC, 2009, Appendix D5, Question 8b (social effects), commodity interests, p. 343.
- ⁶⁰ RAC interviews, ASEC, 2009, Appendix D6, Question 8c (environmental justice effects), conservation interests, p. 378.
- ⁶¹ RAC interviews, ASEC, 2009, Appendix D-1, p. 306.
- ⁶² “Guidance for Social and Economic Analysis in Grazing Environmental Impact Statements (EISs),” IM 81-99, November 25, 1980. “Ranch Analysis and Related Economic Inputs to Grazing EISs,” IM 80-579 [cited in IM 81-99, Encl. 1-14].
- ⁶³ “Reference Guide to Socioeconomic Mitigation,” Information Bulletin 86-318, August 8, 1986.
- ⁶⁴ Kristi Branch, James G. Thompson, Douglas Hooper, and James L. Creighton, *Guide to Social Assessment: A Framework for Assessing Social Change*, Westview Press, Boulder, Colorado, Social Impact Assessment Series #11, 1984.
- ⁶⁵ Appendix D: Social Science Considerations in Land Use Planning Decisions, H-1601-1, Land Use Planning Handbook, 2005.
- ⁶⁶ H-3070-1, “Economic Evaluation of Coal Properties” and H-3070-2, “Economic Evaluation of Oil and Gas Properties.” See http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/blm_handbooks.html.
- ⁶⁷ Minimum Qualifications for Socio-economic Contractors, Instruction Memorandum No. 2006-112, March 15, 2006.
- ⁶⁸ “Loss of Sociological Expertise at the BLM,” draft issue paper, 1987 (?), p. 1.

⁶⁹ Social and Economic Aspects of Planning (#1610-12), available in an online format through the National Training Center's Knowledge Resource Center website, link:

<http://www.ntc.blm.gov/krc/viewresource.php?courseID=249&programAreaId=96>.

⁷⁰ BLM's payroll, jobs, and output estimates: *The Department of the Interior's Economic Contributions* [Fiscal Year 2010], June 21, 2011, pp. 7, 12-13; link: <http://www.doi.gov/news/pressreleases/upload/DOI-Econ-Report-6-21-2011.pdf>. BLM and DOI FY10 budgets: *The Department of the Interior Fiscal Year 2011 Interior Budget in Brief*, BLM Budget Highlights, 2011 (p. 11) and Appendix A: Comparison of 2009, 2010, and 2011 Budget Authority (p. 14); link: <http://www.doi.gov/budget/2011/11Hilites/toc.html>. For FY 2010, the BLM / DOI comparisons are: jobs 550,016 / 2,216,985; total output \$122.11 billion / \$363.18 billion; payroll: \$733 million / \$5.05 billion; and budget \$1.317 billion / \$19.956 billion. [footnote corrected 9-28-11]

⁷¹ The BLM: A Sound Investment in America, 2011; link:

http://www.blm.gov/wo/st/en/prog/planning/social_science.html.

⁷² Links to the Economic Profile System – Human Dimensions Toolkit (EPS-HDT) version 6.01 and explanatory factsheets and training videos are available on the NTC's Knowledge Resource Center:

<http://www.ntc.blm.gov/krc/viewresource.php?courseID=504&programAreaId=96>.

⁷³ Ecosystem Research Group, Missoula, Montana, *Sublette County Socioeconomic Impact Study: Phase I Final Report*, Figure ES-2.

⁷⁴ Colorado Plateau Rapid Ecoregional Assessment, Memorandum I-2-C: Data Identification & Evaluation, Section III: Data Needs Assessment. Dynamac Corporation, December 4, 2010. URL:

http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs/landscape_approach/documents1.Par.64529.File.dat/ColoradoPlateauREA_12-05-10FinalMemorandum_I-2-c.pdf, accessed 11/6/2011.

⁷⁵ Neil E. West, Synecology and Disturbance Regimes of Sagebrush Steppe Ecosystems. *In: Proceedings: Sagebrush Steppe Ecosystems Symposium*, Bureau of Land Management, Idaho State Office, Boise, Idaho, Publication No. BLM/ID/PT-001001+1150, 1999, pp. 19-20. URL:

<http://ris.wr.usgs.gov/general/SSSymp.pdf#page=18>. Accessed 11/6/2011.

⁷⁶ Knight, Richard L., George N. Wallace, and William E. Riebsame. 1995. Ranching the View: Subdivisions versus Agriculture. *Conservation Biology* 9(2):459-61.

⁷⁷ Department of the Interior Task Force on Climate Change, Report of the Subcommittee on Land and Water Management, 2008. URL: http://www.usgs.gov/global_change/doi_taskforce.asp.

⁷⁸ Anisimov, O.A., et al. 2007. "Polar regions (Arctic and Antarctic)." *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, M.L. Parry et al., Eds., Cambridge University Press, Cambridge, p. 666.

⁷⁹ Orlove, Benjamin S., and Stephen B. Brush. "Anthropology and the Conservation of Biodiversity." *Annual Review of Anthropology* 25 (1996): 329–52.

⁸⁰ 2010 All-National Petroleum Reserve-Alaska IAP/EIS: Chapter 3, Affected Environment, Sec. 3.4.3 (Subsistence), Figure 3-5 (draft 11/2011).

⁸¹ Millennium Ecosystem Assessment, *Ecosystems and Human Well-being: Synthesis*. Island Press, Washington, DC., 2005.

⁸² Overpeck, J. and Udall, B. 2010. "Dry Times Ahead." *Science* 25 June 2010, Vol. 328 no. 5986 pp. 1642-1643.

⁸³ The Information Quality Act, Public Law 106-554, §515. Interior Department policy on Integrity of Scientific and Scholarly Activities, 305 DM 3. OMB, Final Information Quality Bulletin for Peer Review (Bulletin M-05-03), 2004. URL: http://www.whitehouse.gov/omb/memoranda_fy2005_m05-03.

⁸⁴ Section 202(c)(2) of FLPMA requires BLM to integrate physical, biological, economic, and other sciences in developing land-use plans (43 USC 1712(c)(2)). FLPMA regulations 43 CFR 1610.4-3 and 1610.4-6 also require BLM to analyze social, economic, and institutional information. Section 102(2)(A) of NEPA requires Federal

agencies to “insure the integrated use of the natural and social sciences . . . in planning and decision making” (42 USC 4332(2)(A)).

⁸⁵ Executive Order 12898 of February 11, 1994, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.”

⁸⁶ Assessment of Social and Economic Capabilities – USDI Bureau of Land Management, 2008, p. 308.

⁸⁷ The revised Interior Department Environmental Justice Strategic Plan is available at:
<http://www.doi.gov/oepc/justice.html>.

⁸⁸ Title VIII of the Alaska National Interest Lands Conservation Act, 16 U.S.C. 3111-3126.

⁸⁹ Federal Land Policy and Management Act, §202(c)(9).

⁹⁰ Employee Survey, ASEC, 2009, Table 5, p. 65.

⁹¹ Information on the Cooperative Ecosystems Studies Units (CESU) Network is available at:
<http://www.cesu.psu.edu/default.htm>.