Tamarisk
Dolores River Restoration Partnership
Northwest Colorado Watershed Partnership

Northwest Colorado Resource Advisory Council

Mike Wight, Peter Mueller, Season Martin, Clark Tate

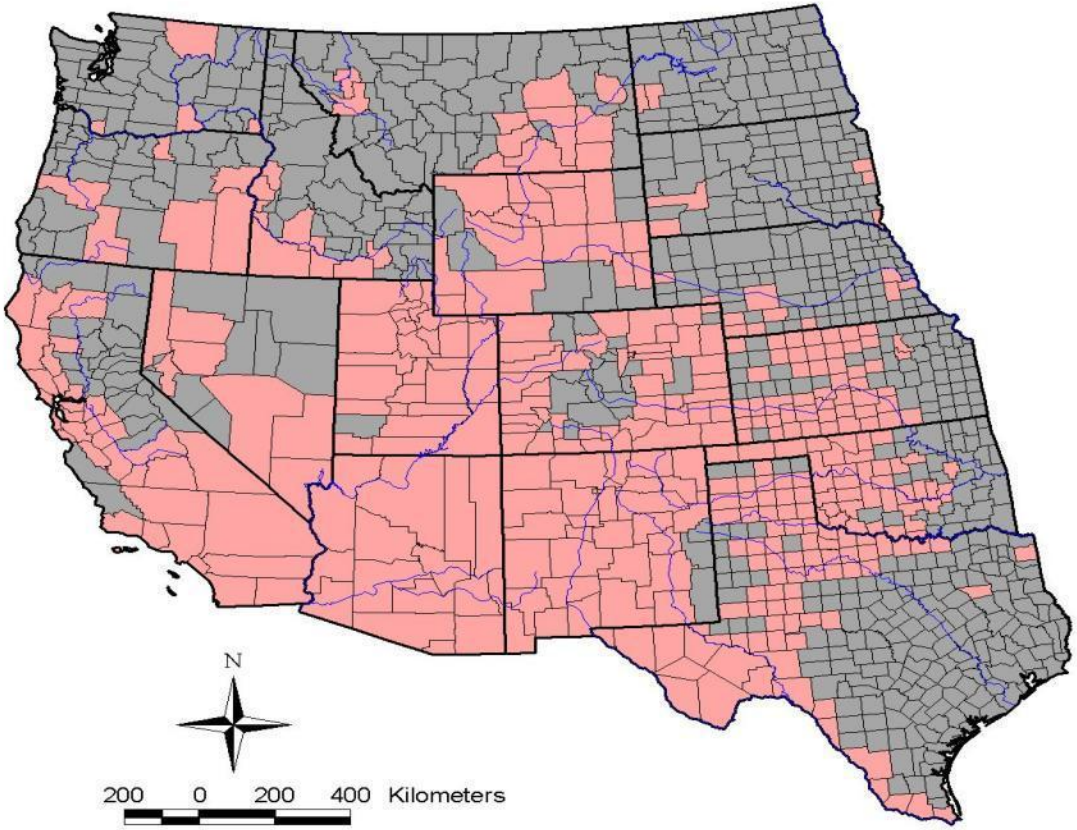
December 8, 2011

a non-profit alliance working to restore riparian lands

Tamarisk Coalition


Tamarisk is a non-native, invasive, water loving plant
that can dominate riverside lands

Distribution



Tamarisk covers approximately **1.6 million** acres of riverside lands within the western United States

Courtesy of Fred Nibling, Bureau of Reclamation


Tamarisk has a Reputation for consuming large amounts of water

USGS
science for a changing world

News Release

April 28, 2010	Peter Soeth, Reclamation	303-445-3615	psoeth@usbr.gov
	Pat Shafroth, USGS	970-226-9327	shafrothp@usgs.gov
	Curt Brown, Reclamation	303-445-2098	cbrown@do.usbr.gov
	Catherine Puckett, USGS	352-278-0165	cpuckett@usgs.gov

Invasive Saltcedar and Russian Olive Trees Consume Similar Amounts of Water as Native Cottonwoods and Willows, Wildlife Effects Mixed

Long considered heavy water users and poor wildlife habitat, non-native saltcedar and Russian olive trees that have spread along streams and water bodies in the West may not be as detrimental to wildlife and water availability as believed.

In a U.S. Geological Survey report requested by Congress and released today, scientists conducted a review of the scientific literature to assess the existing state of the science on the distribution and spread, water consumption, and control methods for saltcedar (also called tamarisk) and Russian olive. They also assessed the considerations related to wildlife use and the challenges associated with revegetation and restoration following control efforts.

The report was a collaboration among the USGS, the Bureau of Reclamation, U.S. Forest Service, and

Tamarisk Induced Changes *in* Channel Structure *and* Associated Habitats

Tim Carlson[1], Greg Newman[2], Tom Stohlgren[2,3]
[1] The Tamarisk Coalition
[2] Natural Resource Ecology Laboratory, Colorado State University
[3] United States Geological Survey, Fort Collins Science Center, Fort Collins, Colorado

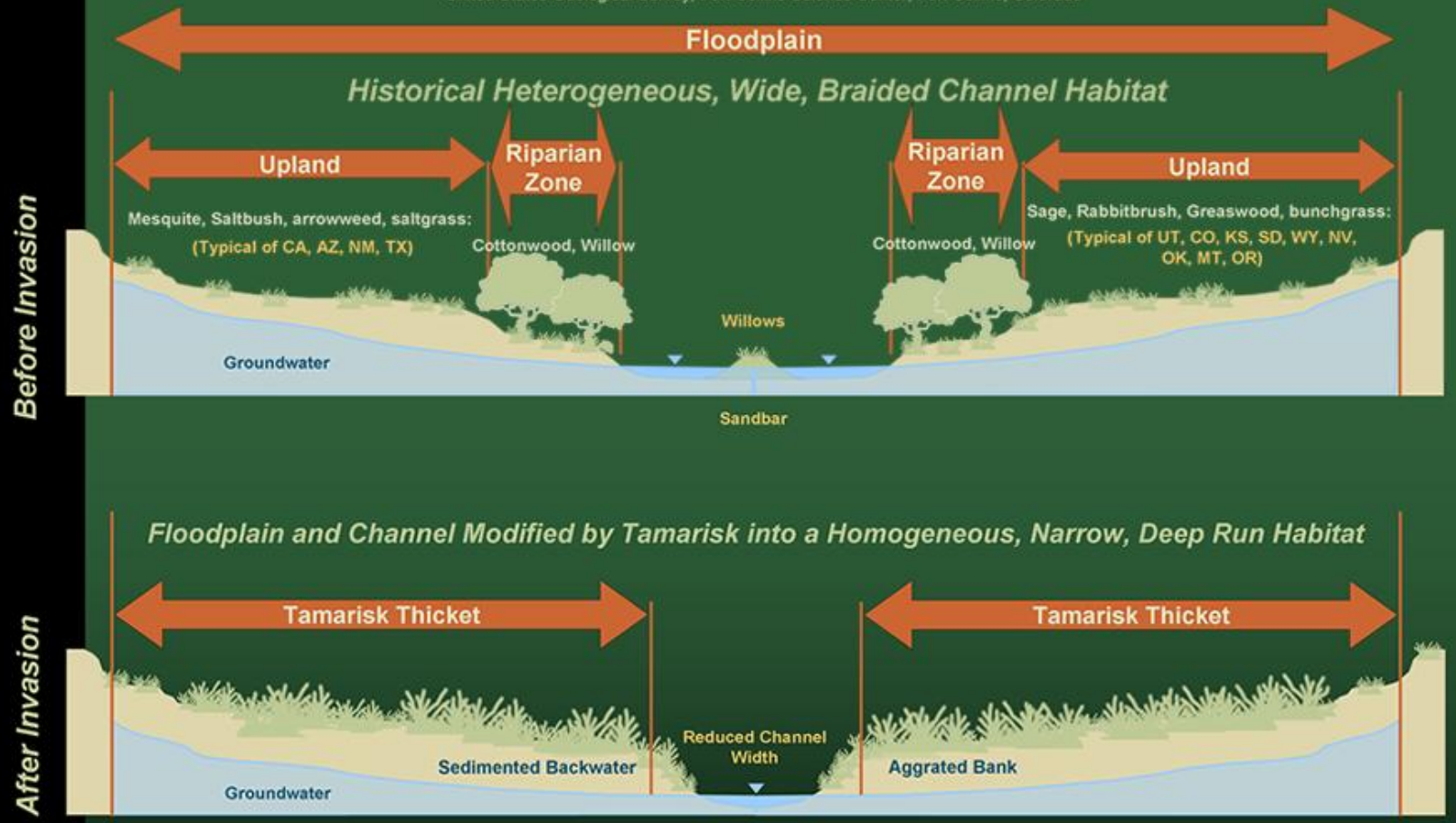


Figure 1

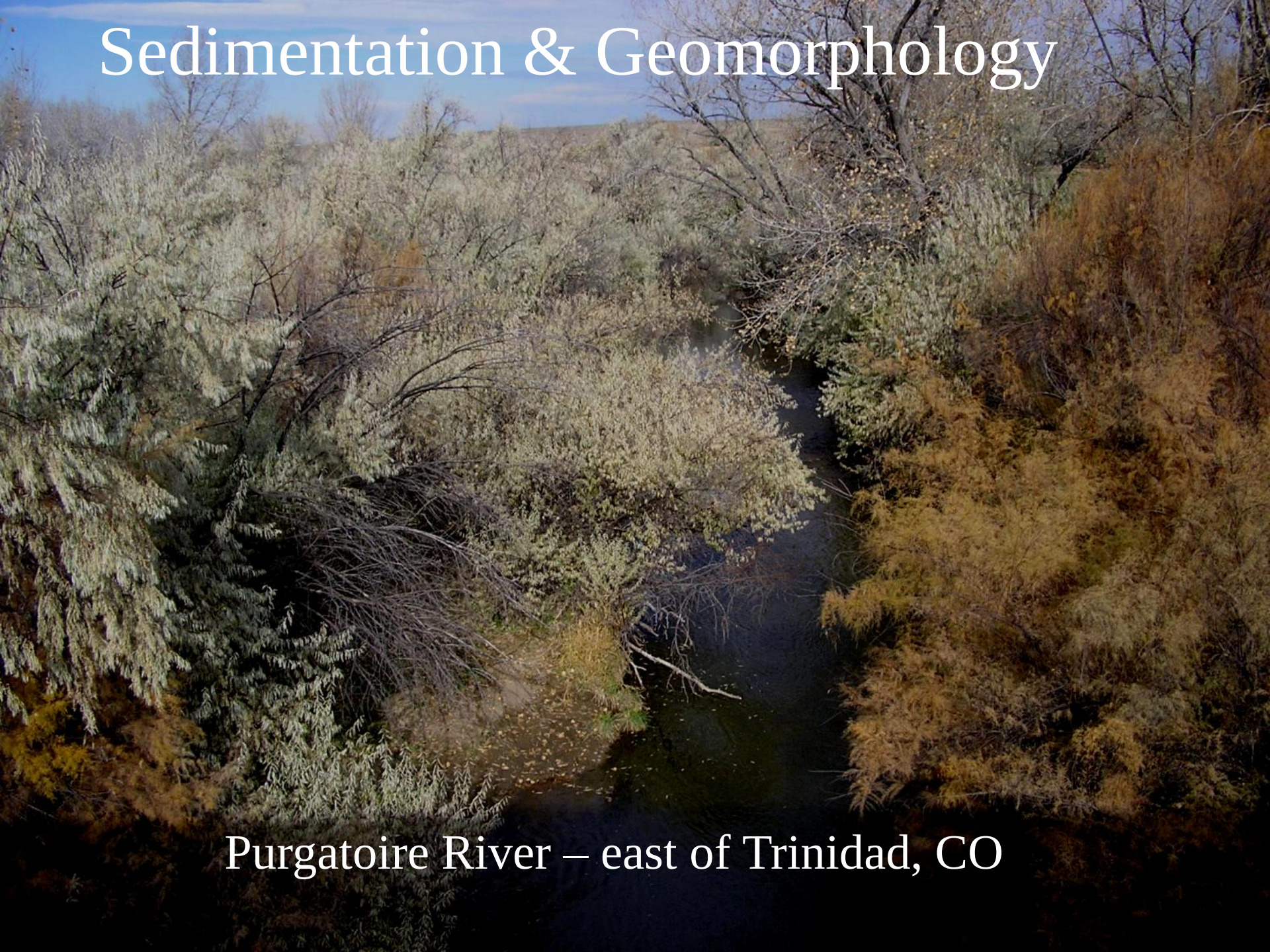
Acknowledgements:
Principle Investigators: Tim Carlson, Tom Stohlgren, Greg Newman
The many helping us out: Jim Graham, Catherine Jarnevich, Tracy Davern, Paul Evangelista, Alycia Waters-Crall, Rick Shory
Key Partners: The Tamarisk Coalition, United States Geological Survey, National Aeronautics and Space Administration, Natural Resource Ecology Laboratory, Colorado State University

Other Impacts

Close-up of flowers
Courtesy of Dr. Phil Westra, CSU


Wildfires
Rio Grande in
Albuquerque 4/2002

Sedimentation & Geomorphology



Purgatoire River – east of Trinidad, CO

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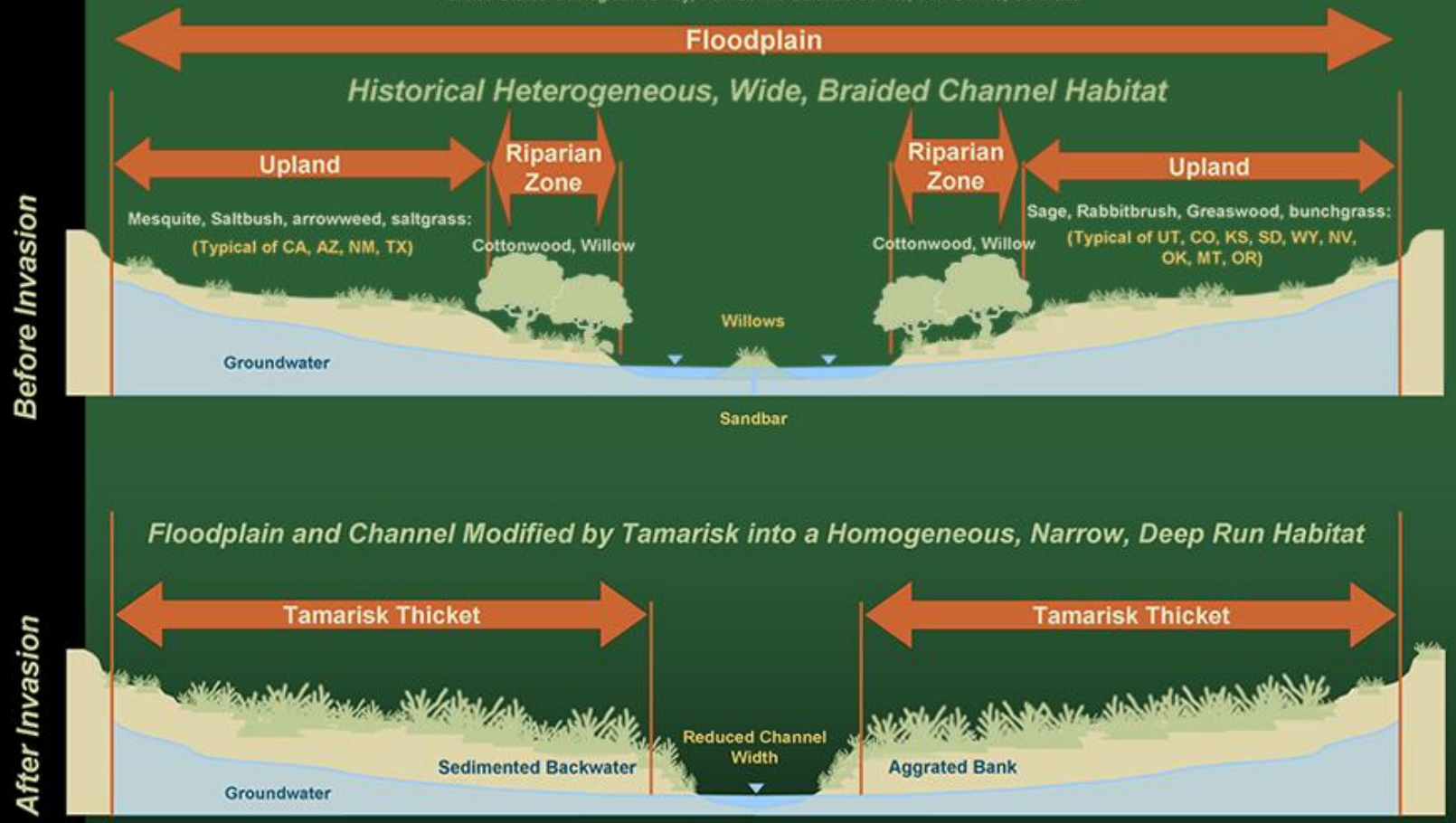

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Less Productive
Wildlife Habitat

Other Invasive Species: Russian Olive

Russian Knapweed

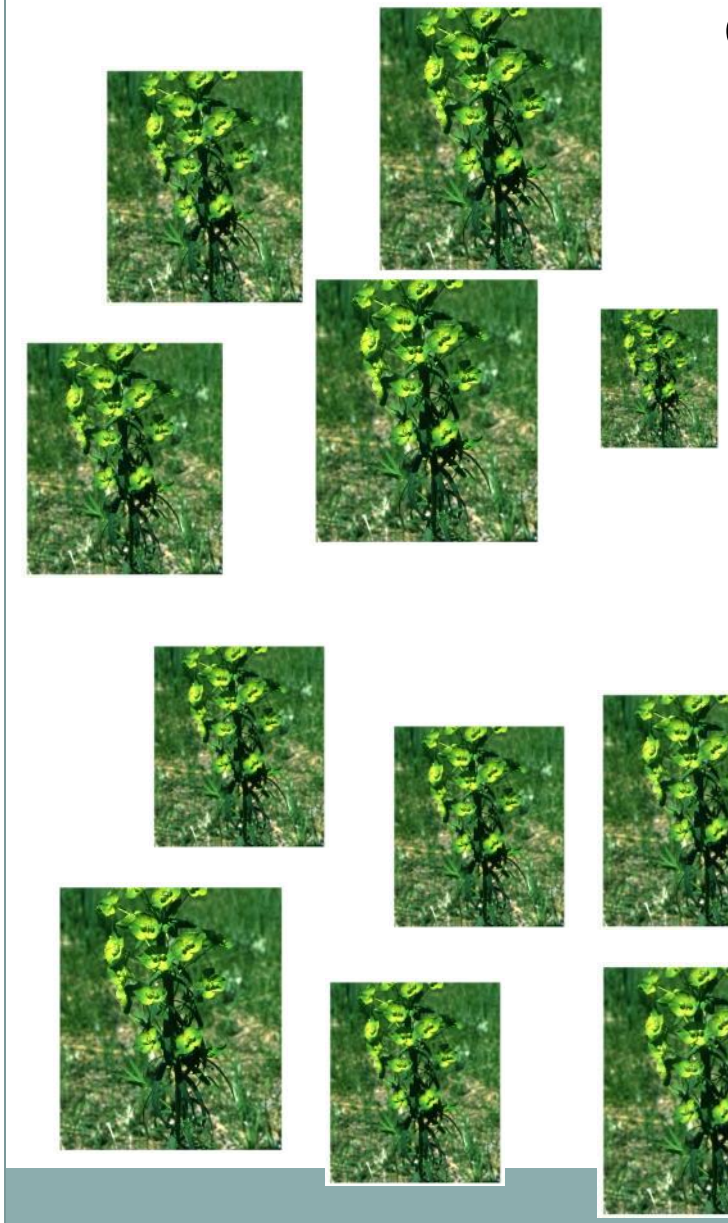

INVASIVES ??
Courtesy of Fred Nibling, US Bureau of Reclamation


Or Natives ??

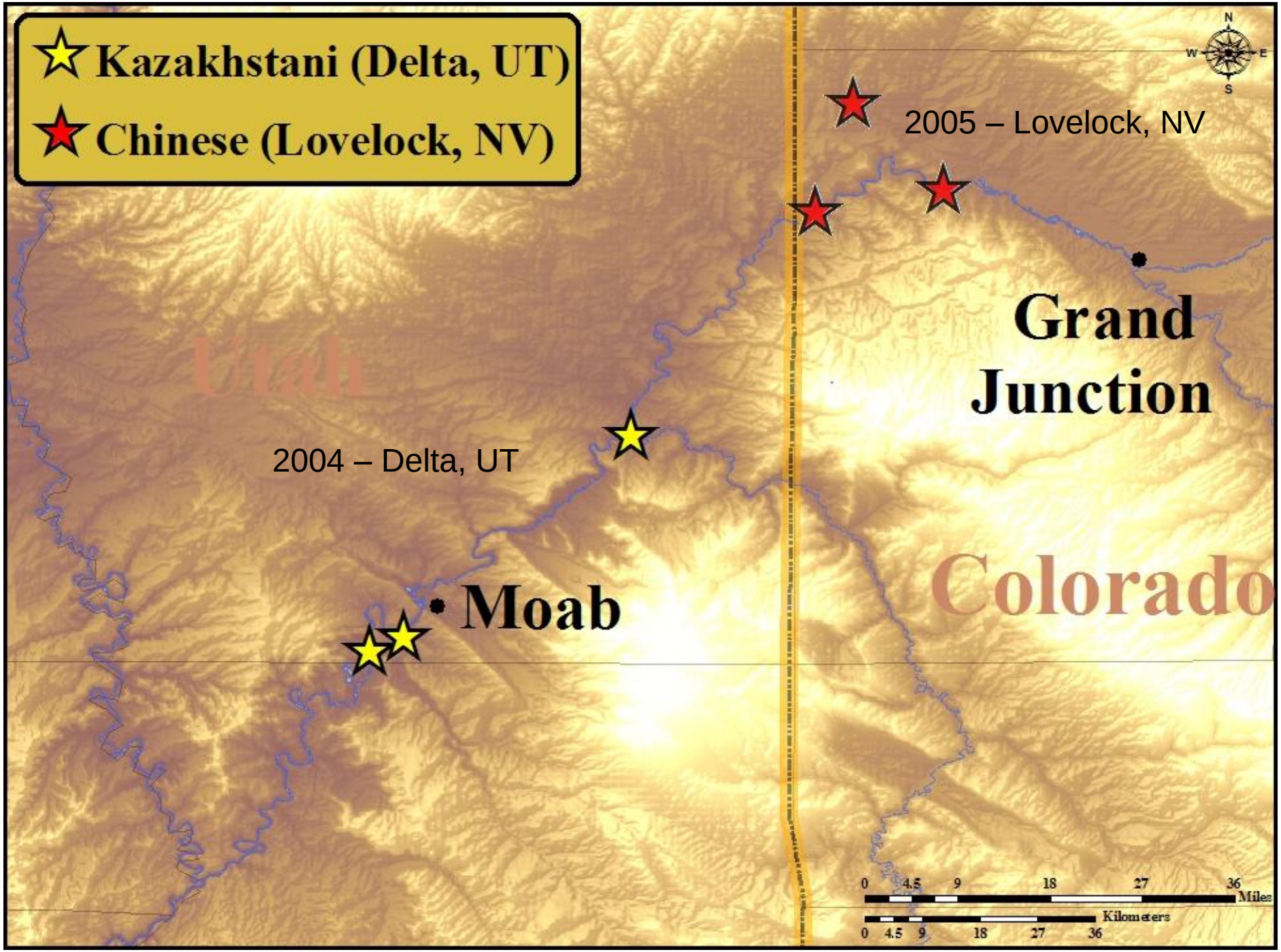
First Saltcedar Biological Control Agent Released in North America in May 2001

Saltcedar Leaf Beetle, *Diorhabda elongata deserticola* from China

The results of weed biocontrol are a new equilibrium between plant and herbivores



herbivore added


Kazakhstani (Delta, UT)
Chinese (Lovelock, NV)
2005 – Lovelock, NV
Grand Junction
Utah
2004 – Delta, UT
Moab
Colorado
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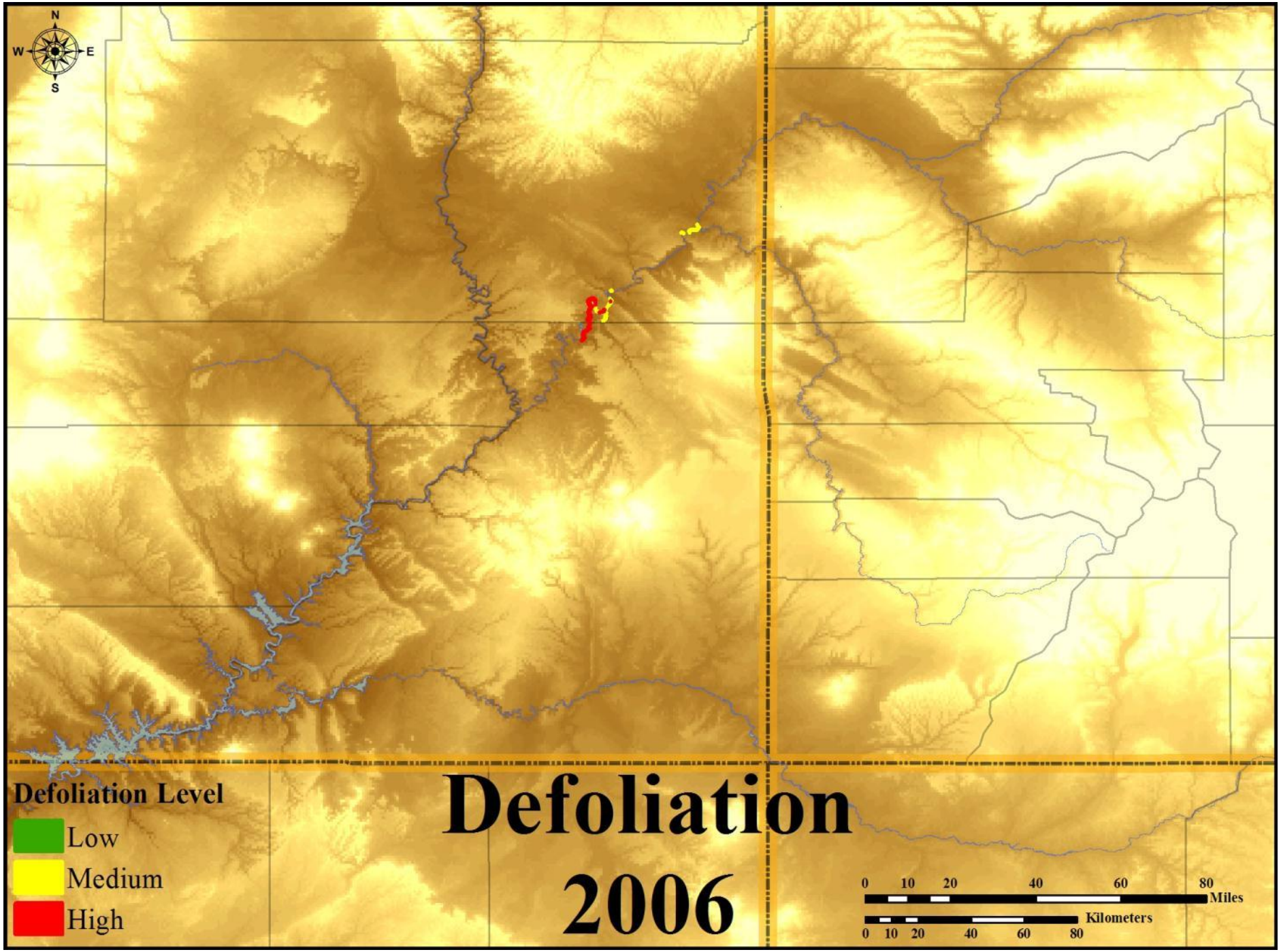
W
E
S
0 4.5 9 18 27 36
Miles
Kilometers
0 4.5 9 18 27 36


N
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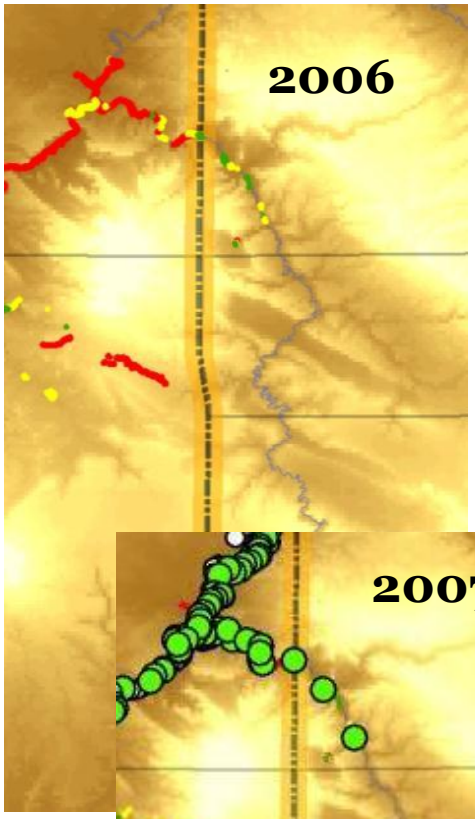
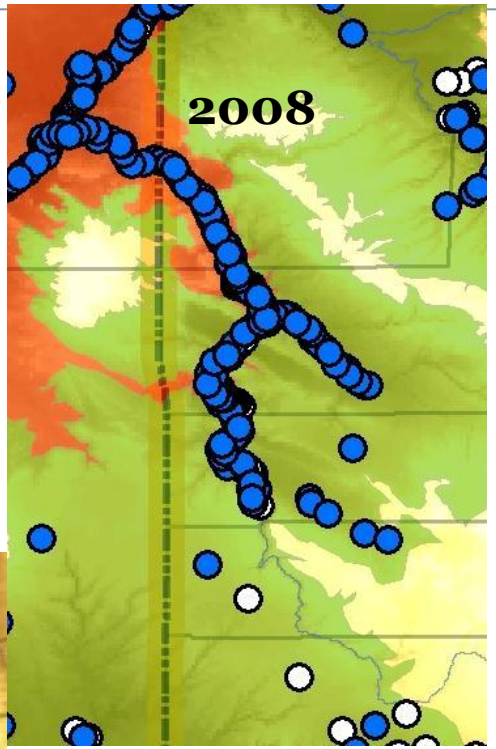
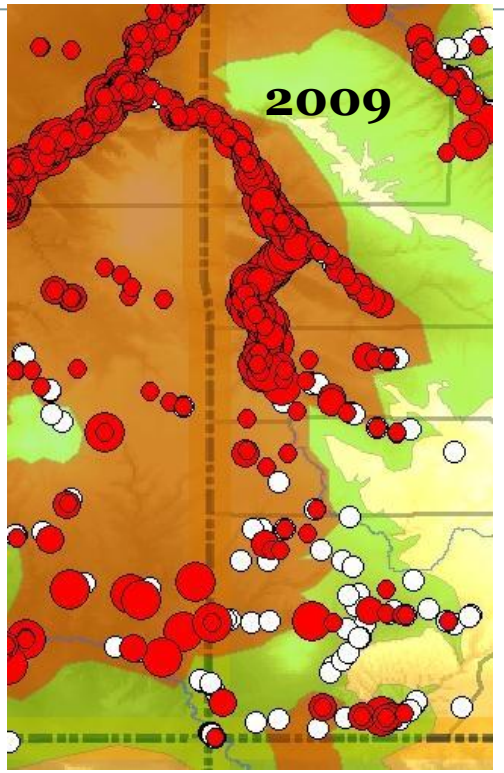
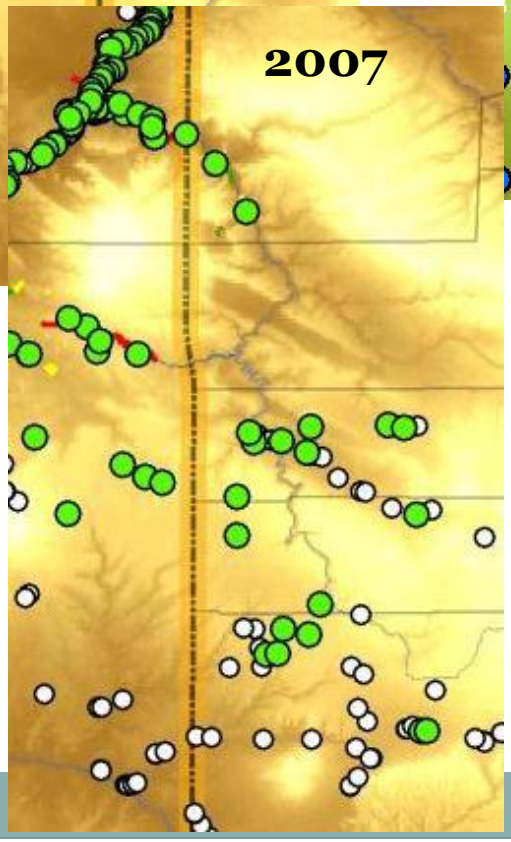
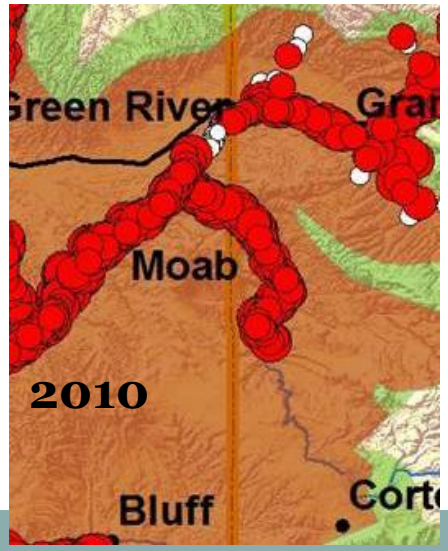
Defoliation Level
Low
Medium
High
Defoliation
2006
0 10 20 40 60 80
Miles
Kilometers
0 10 20 40 60 80


2006


2008


2009


2007

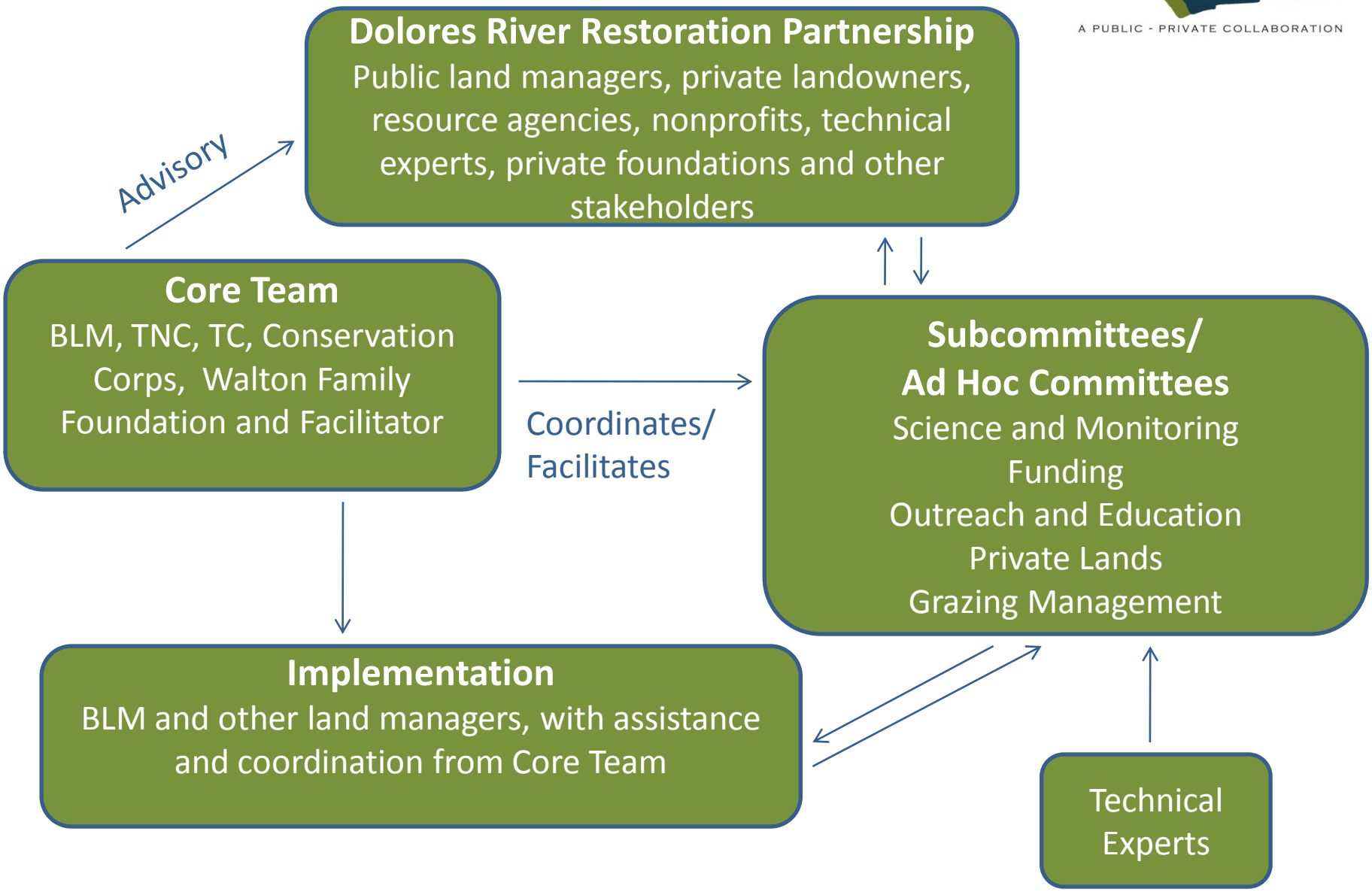

Green River
Moab
2010
Bluff

A PUBLIC - PRIVATE COLLABORATION

Partners (MOU)

-The Nature Conservancy
-The Tamarisk Coalition
-Bureau of Land Management:
Tres Rios, Uncompahgre, Grand and Moab Field Offices
-Walton Family Foundation
-Counties: Dolores, San Miguel, Montrose, Mesa, Grand (Utah)
-Natural Resource Conservation Service - CO
-Colorado Association of Conservation Districts
-Rocky Mountain Bird Observatory
-Canyon Country Youth Corps
-Southwest Conservation Corps
-Western Colorado Conservation Corps
-USFWS- PFW Colorado'
-USFWS-PFW Utah
-University of Utah, Rio Mesa Center
-Colorado Department of Transportation
-Colorado Parks and Wildlife
-Utah Division of Wildlife Resources, Moab

DRRP Organizational Diagram - 2011



Dolores River Riparian Action Plan

Understanding the Problem
Compile Mapping
Identify Stressors & Assumptions
Create Vision/Goals
Define Priorities
Identify Funding
Implementation
Monitoring/Adaptive Management

Vision:

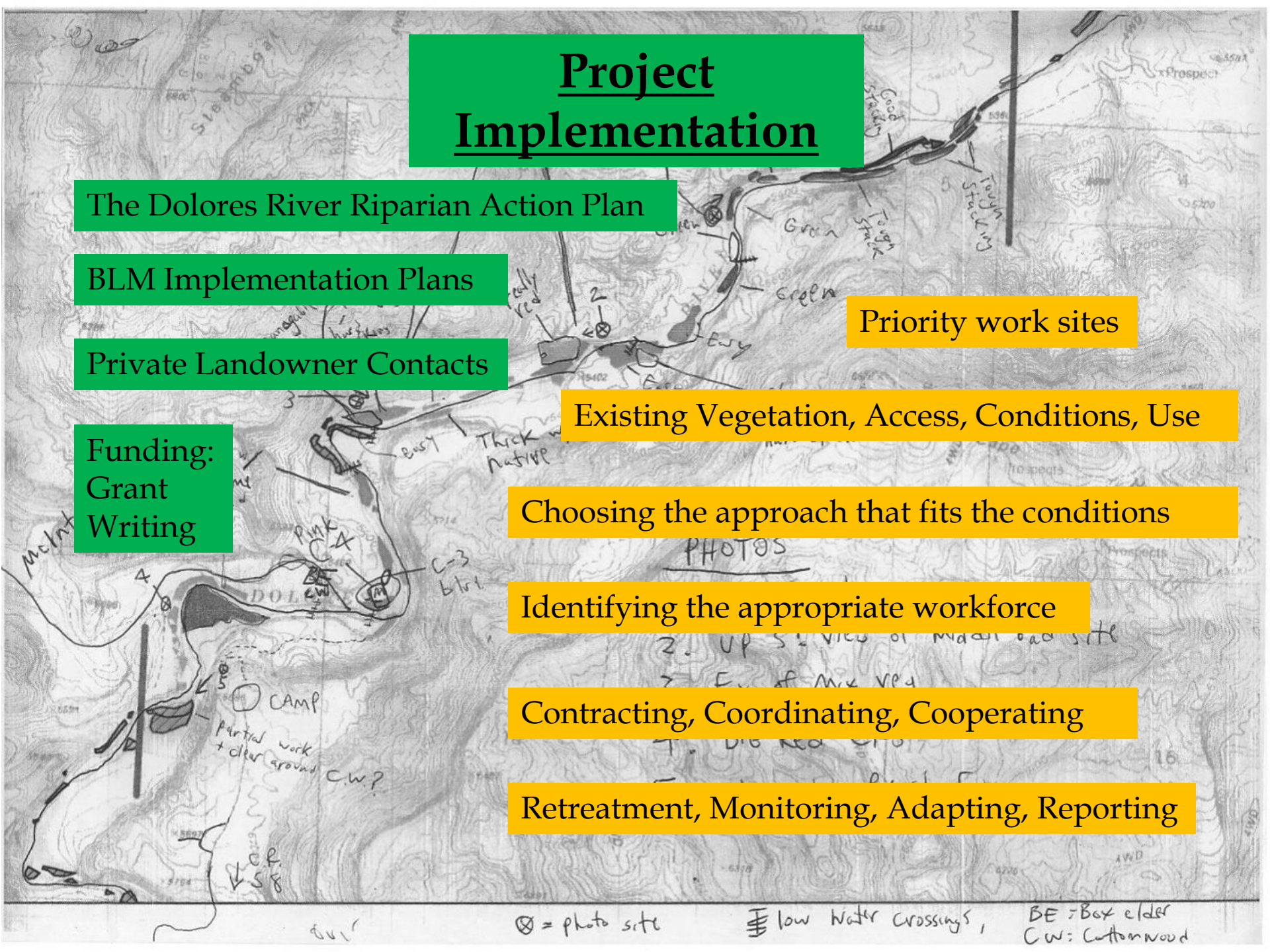
A Dolores River watershed dominated by native vegetation where threats from tamarisk and other invasive species have been mitigated and the riparian areas of the watershed continue to become more naturally functioning, self-sustaining, diverse and resilient over time.

Five Year Goals:

- **A watershed wide approach to reduce tamarisk infestations to 5%**
- **Reduce other invasive species to 15% cover**
- **Increase Employment opportunities for youth and contractors in the area.**
- **Enhance visitor travel, aesthetic enjoyment for recreation**
- **Reduce the risk of wildfire**
- **Improve Wildlife Habitat**
- **Share lessons learned**
- **Monitor changes and incorporate adaptive management**
- **Use the Dolores Watershed and the partnership as a model for others**

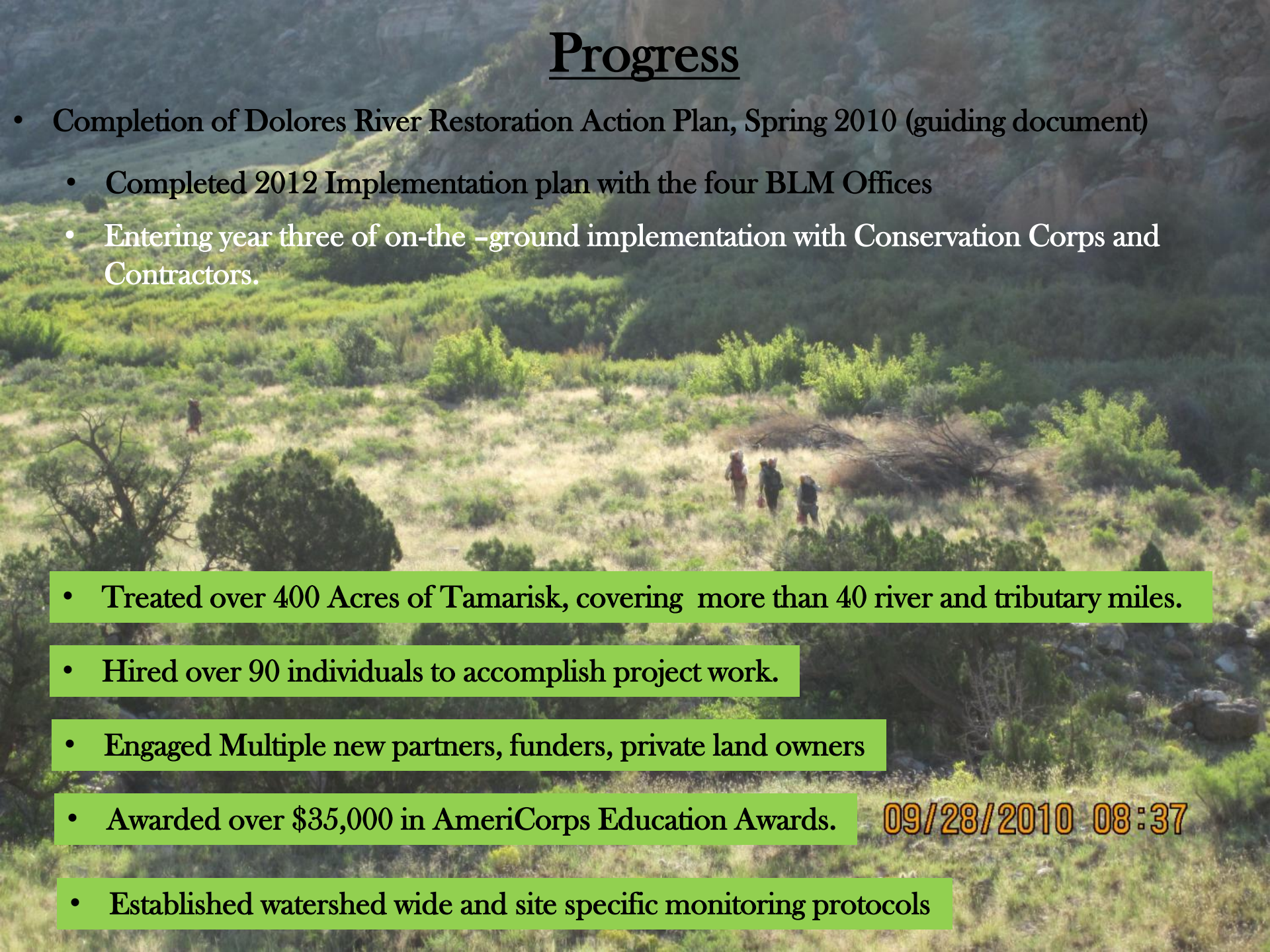
Getting the Work Done: Partnership Sub-Committees

- **Science and Monitoring:** Identifies Shared Methods, Shares Lessons, Adaptive Management, Contracting, Compiling
- **Outreach and Education:** Assist other subcommittees in reaching goals, Identify Audiences, Spread the Word, Events, News, Volunteer Projects…
- **Fundraising:** Assure Financial Support, Identify Grants, Match Funds with Projects
- **Implementation:** Assist BLM w/ Implementation plans, Identify Methods, Contractors, Approach, Get Work Done!
- **Grazing :** Identify How Grazing and Restoration can go Hand in Hand
- **Private Lands:** Connecting with landowners, NRCS,


Project Implementation
The Dolores River Riparian Action Plan
BLM Implementation Plans
Private Landowner Contacts
Funding: Grant Writing
Priority work sites
Existing Vegetation, Access, Conditions, Use
Choosing the approach that fits the conditions
Identifying the appropriate workforce
Contracting, Coordinating, Cooperating
Retreatment, Monitoring, Adapting, Reporting
PHOTOS
CAMP
Partial work + clear ground
C.W.?
⊗ = photo site
low water crossings,
BE = Box elder
CW: Cottonwood

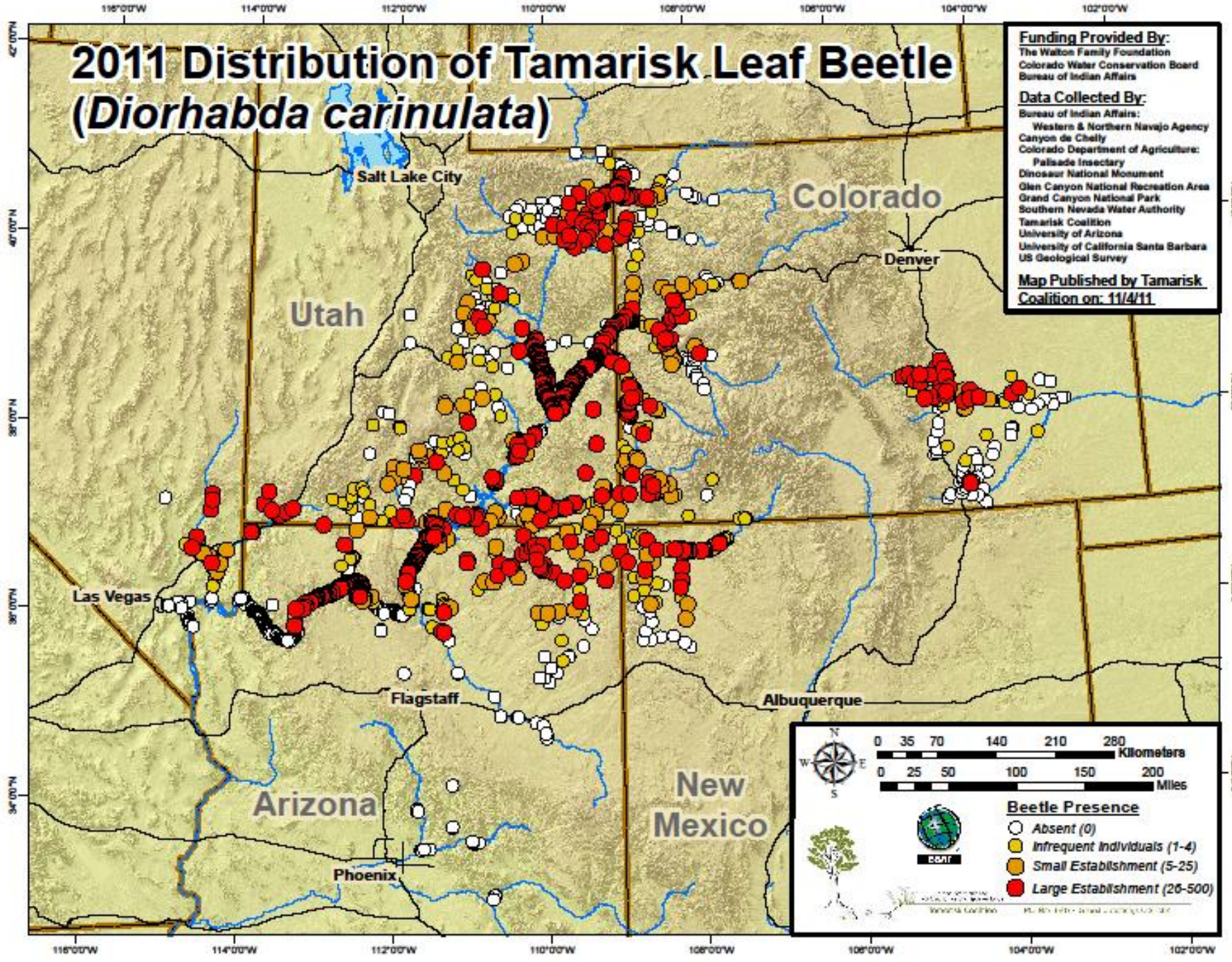
Progress

- Completion of Dolores River Restoration Action Plan, Spring 2010 (guiding document)
  - Completed 2012 Implementation plan with the four BLM Offices
  - Entering year three of on-the –ground implementation with Conservation Corps and Contractors.



- Treated over 400 Acres of Tamarisk, covering more than 40 river and tributary miles.
- Hired over 90 individuals to accomplish project work.
- Engaged Multiple new partners, funders, private land owners
- Awarded over $35,000 in AmeriCorps Education Awards.
- Established watershed wide and site specific monitoring protocols

Workforce!


2011 Distribution of Tamarisk Leaf Beetle
(Diorhabda carinulata)
Funding Provided By:
The Walton Family Foundation
Colorado Water Conservation Board
Bureau of Indian Affairs
Data Collected By:
Bureau of Indian Affairs:
Western & Northern Navajo Agency
Canyon de Chelly
Colorado Department of Agriculture:
Palisade Insectary
Dinosaur National Monument
Glen Canyon National Recreation Area
Grand Canyon National Park
Southern Nevada Water Authority
Tamarisk Coalition
University of Arizona
University of California Santa Barbara
US Geological Survey
Map Published by Tamarisk Coalition on: 11/4/11
Salt Lake City
Colorado
Denver
Utah
Las Vegas
Flagstaff
Albuquerque
Arizona
New Mexico
Phoenix
0 35 70 140 210 280 Kilometers
0 25 50 100 150 200 Miles
Beetle Presence
Absent (0)
Infrequent Individuals (1-4)
Small Establishment (5-25)
Large Establishment (26-500)

The DRRP supports local contractors for mechanical removal projects

Matching Project Types with the Appropriate Workforce

Biocontrol - Inaccessible sites, Sites with High % of Natives & Low & of Tamarisk, Sites with High % of Tamarisk and No Natives (active restoration not feasible)

Mechanical- Access and terrain are appropriate, lower mix with natives

Hand Crews (Corps or other)- remote/difficult terrain, inaccessible for machinery, delicate work around natives, cultural or wildlife resources

Three Corps Collaborate within the DRRP:

- Chainsaw Tamarisk
- Apply Herbicide
- Plant Natives
- Fencing
- Cottonwood Caging

Southwest Conservation Corps

WESTERN COLORADO CONSERVATION CORPS
OF PARTNERS

CANYON COUNTRY YOUTH CORPS
Service Conservation
Education Adventure
UT CO AZ NM

Corps: Building Capacity, Creating Jobs, Fostering Stewardship, Future Conservation Leaders

Opportunities

- Corps Create Jobs and hire young adults.
- Train and teach skills
- Foster stewardship and work ethic through conservation projects
- Prepare members and leaders for positions with Land Management Agencies
- Improve communication skills, sense of community, team building
- Provide opportunities for scholarships, future education through AmeriCorps
- Healthy Lifestyle

Benefits to partnering with corps:

- Management of the logistical support to crews working in a variety of project types and terrain
- Job creation and training for regional, local, diverse youth and young adults.
- Ability to bring additional funding to the partnership through corps multi pronged approach to conservation (AmeriCorps dollars and education awards)
- Staff time that can contribute to grant research, outreach and education, and volunteer projects
- Empower young adults to care about the environment, create stewards through conservation projects
- Media attention
- Creates pathways for careers in public land management or conservation.

Projects

Riparian Restoration

Invasive Species

Trail and OHV

Construction

Fire Mitigation

Forestry

Fencing

Planting

Road Closures

Historical Restoration

Weatherization

Individual Placements

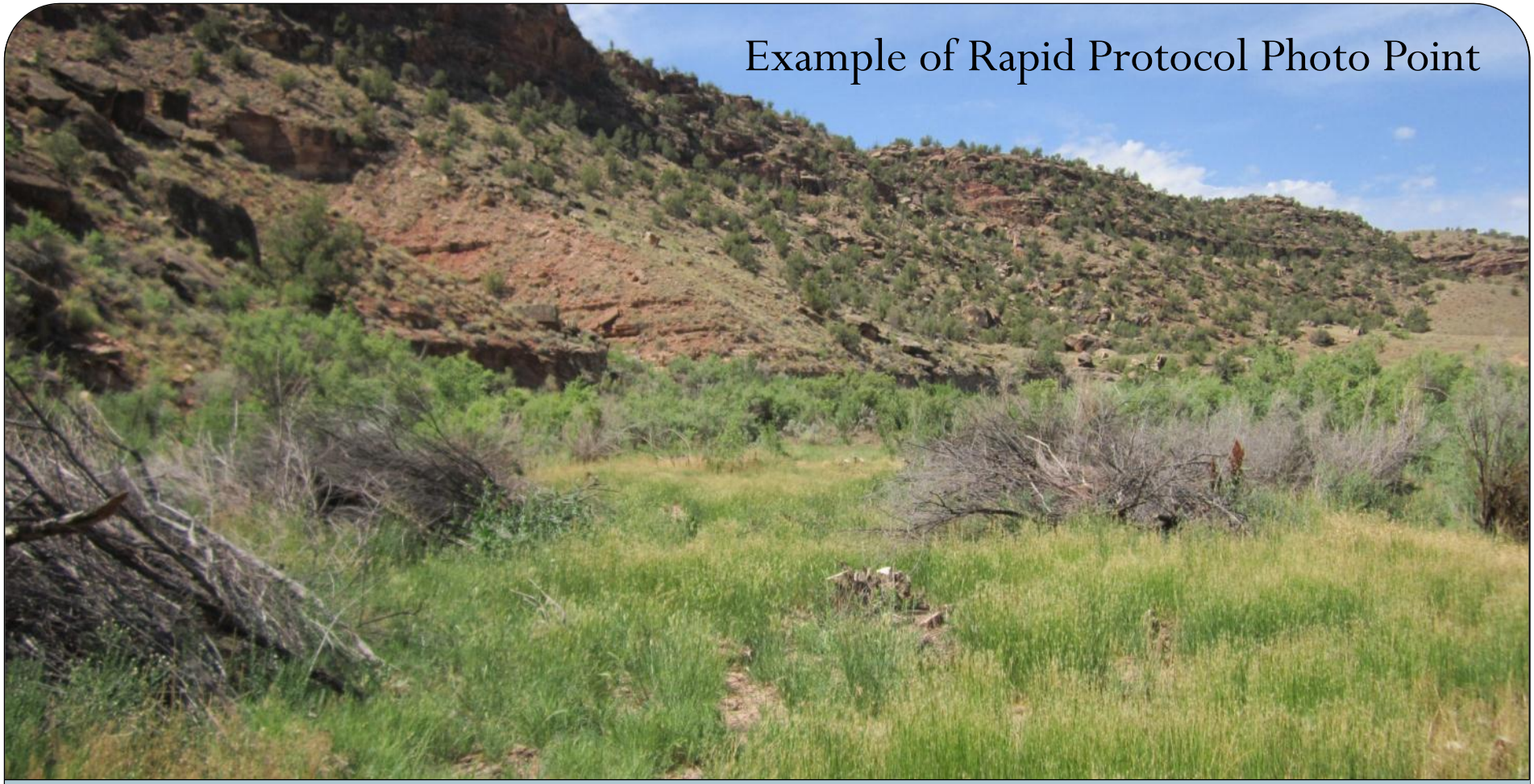
Determining Success

90% of Riverside Habitat Equals Approximately 1,900 acres to reduce non-native and promote native species.

Two Project Monitoring Protocols:

- **Watershed-Wid**e: Intensively monitor 40 sites throughout the watershed (10 in each BLM) office to gauge overall, watershed response

- **Site Specific "Rapid**": Walk through and take pictures of every project site on a rotating basis



DRLG 1_2

UTM NAD-83: 684149 E, 4216926 N Accuracy: 22 ft Date: 7-19-11

Time: 11:04 AM Bearing: 210 Photographer: Royce Young

Notes: Native grasses growing where tamarisk was cut

Determining Success

Adapting to Lessons Learned

- **Annual meeting with the Science & Monitoring Subcommittee & Implementation Committee to Discuss Monitoring Results**
- **Implementation Committee meetings to Share Lessons Learned & to Produce an Annual Lessons Learned Presentation for the Website**

Questions