The Great Basin Restoration Initiative

A Hand to Nature: Progress to Date

Bureau of Land Management

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Introduction: A Look Back, A Look Ahead

In the summer of 1999, the Great Basin burned as it seldom had before. About 1.7 million acres of public land were blackened, leaving behind a landscape that was vulnerable to a takeover by non-native annual grasses and noxious weeds. In the summer of 2000, almost one million more acres of Great Basin rangeland burned.

The fire season of 1999 was alarming to those who care for the Great Basin. With more than 25 million acres already dominated by annual grasses and weeds, and with that figure increasing by some estimates at 4,000 acres per day, the signals were clear: This vast and diverse land was at a crossroads. Little time remained to reverse the downward ecological trend of the Great Basin, and a point of no return was close. Either a comprehensive restoration effort unprecedented in the history of the Bureau of Land Management (BLM) would need to be undertaken or the Great Basin would continue, at an accelerated rate, on a path toward ecological collapse.

A small team of people met to examine the problems facing the Great Basin and began to chart a course that would lead to healthier ecosystems. From those meetings came two reports, "Out of Ashes, An Opportunity," (August 1999), which explained the threats and ecological status of the Great Basin; and "The Great Basin: Healing the Land" (April 2000), which proposed guiding principles and outlined goals and actions in five key areas to help direct restoration work.

Since then, an expanded team representing many disciplines has continued to meet regularly and work on strategies and products to assist restoration work in the Great Basin. The overall effort has become known as the Great Basin Restoration Initiative, or GBRI.

But two years after the devastating wildfires of 1999, it's fair to ask some questions about GBRI. What has been accomplished? What is GBRI's funding outlook? How does GBRI tie into the national fire plan, efforts to improve sage grouse habitat, and other related efforts? And what is the support level from management?

This report addresses these questions, and provides an overall update on the GBRI effort. After two years, it's time to check in, assess and evaluate. It's time to affirm the direction GBRI is headed, and it's also time to pick up the pace.

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GBRI is important to all who care about this unique region of our nation. Restoration can serve as an umbrella effort for much of the good we want to do in the Great Basin. We still enjoy management support and strong backing from an amazing array of interest groups. Our challenge is to provide a clear vision and direction to the restoration work, and take advantage of opportunities as they present themselves.

So the short answer to the tough question is, yes, GBRI is alive and well, and we're just getting started. I am optimistic about future funding. I am optimistic that we in BLM and our partners have the skills and know-how to take care of what needs to be done. I am optimistic that GBRI will make a huge difference in the Great Basin, and that our experiences will have value for other applications. The challenge is huge, but my belief is that BLM and our partners will continue the work in an intelligent and progressive manner.

Restoring the Great Basin is probably one of the most significant challenges any of us will face in our careers. How we handle it will say much to new generations about our ability, vision, and most of all, our stewardship of the land.

Robert V. Abbey
Nevada State Director
GBRI Team Management Representative

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The Great Basin: The Situation Today

Wildland fires burned about 1.7 million acres of public land in the Great Basin in 1999, most of the damage occurring in one five-day period in early August. The following fire season was also destructive, with about 700,000 more acres burning in the Great Basin. By September of 2001, another 600,000 acres had burned in the Great Basin. But the fires were only one part of the problem, and probably not even the bigger part of it. Non-native grasses and noxious weeds threaten the ecological diversity of the land and jeopardize its ability to sustain natural resources. Further, the burned acreage and subsequent invasion by non-native grasses and noxious weeds perpetuates the downward ecological spiral. Since annual grasses in particular cure quickly and carry fire faster, the areas they dominate become more prone to burn. The rest of the picture is easy to see. More fire means more annual grasses, and more annual grasses mean more fire. With roughly one-third of the Great Basin already dominated by annual grasses and noxious weeds, the conclusion is inevitable. The basin's ecological resiliency is dramatically reduced, and many areas in it are on the brink of ecological collapse. In some places especially hard-hit by weeds, restoration efforts already would be too little, too late.

None of this is news. The ecological troubles of the Great Basin have been recognized for decades. Cheatgrass, the most vexing of the annual grasses, has thrived since the late 1800s in the Great Basin. The urgency of restoration work is new. The wildland fires of 1999 and 2000 highlighted the Great Basin's dire condition. Many people – scientists, managers, ranchers, recreationists, environmentalists, elected officials and others – believe that the window of opportunity to rescue at least parts of the Great Basin is closing fast. Natural processes, left on their own, may take hundreds of years or more to rectify the problem.

The Great Basin needs help. BLM is the agency best-suited and best-equipped to assume the leadership role in providing it.

The First GBRI Team Meeting: "Out of Ashes, an Opportunity"

The first GBRI meeting occurred in August of 1999. Even before some of the major fires in Nevada were controlled, the team met in Boise. A report, "Out of Ashes, an Opportunity," summarizes the conclusions reached by the team. Among the report's conclusions are:

- Traditional means of fighting invasive species and restoring native habitat are not enough to reverse the downward spiral of ecological health in the Great Basin.
- Traditional post-fire rehabilitation, which mostly addresses soil stability, is not sufficient to resolve the ecological problems associated with wildland fires. A more encompassing and intensive restoration effort is needed.
- The cost of such an effort would be high, but the cost of doing nothing ultimately would be much higher.
- Close cooperation with key individuals, local government and agencies, and organizations is vital to successful restoration.
- Restoration will not transform the Great Basin to what it looked like 150 years ago, before European settlement, but will restore some areas of high resource values, reduce impacts to other areas from annual grass and noxious weed invasion, and reverse the destructive cycle of wildfire and weeds.

Copies of "Out of Ashes, an Opportunity," may be obtained through the BLM Office of Fire and Aviation's External Affairs staff, at the National Interagency Fire Center, in Boise, Idaho, or at the GBRI website, at www.fire.blm.gov/gbri/

THE SECOND GBRI MEETING: "HEALING THE LAND"

In November of 1999, the GBRI restoration team met again in Boise, Idaho. The results of that meeting, and the recommendations that came from it, are found in a report called, "The Great Basin: Healing the Land." Highlights of the report include:

- It provides background on the ecology and changes within the Great Basin, and explains why existing practices fall short of a true restorative effort.
- The report defines restoration.
- It outlines seven main objectives and guidelines for restoration.
- Ten "guiding principles" of restoration are listed.

- The report proposes a way of organizing and managing restoration work.

- It outlines goals and actions for five critical areas in restoration work: planning; inventory and assessment; implementation; monitoring and evaluation; and science.

Much of this progress-to-date document will be devoted to reporting on the goals and actions listed in "The Great Basin: Healing the Land." Copies of "The Great Basin: Healing the Land" are also available from the Office of Fire and Aviation's External Affairs staff in Boise, Idaho, or at the Great Basin Restoration website, www.fire.blm.gov/gbri/

DEFINITION OF RESTORATION

Restoration, as defined by the GBRI team in the report, "The Great Basin: Healing the Land," is:

"Implementation of a set of actions that promotes plant community diversity and structure that allows plant communities to be more resilient to disturbance and invasive species over the long term."

This definition gives field offices the latitude to conduct a wide range of activities under the label of restoration, as long as the actions promote diversity and the ability of the restored community to better resist or recover from disturbances such as weed invasion or repeated wildland fires. Use of native plants in restoration projects is emphasized where the seed is available and adapted to the site being restored. Many activities (fire rehabilitation, wildlife habitat restoration, and so forth) currently funded under other programs meet this definition, and therefore may be included under the umbrella of GBRI.

GBRI FUNDING

No permanent account exists for restoration, and the Great Basin Restoration Initiative (GBRI) is not a separate line item in the budget. Restoration funding, therefore, arises through several avenues including numerous subactivities and the National Fire Plan, and can appear to be done on a piecemeal approach. Efforts such as GBRI are a mechanism to regionally integrate these funding appropriations. Regionally integrated

approaches such as GBRI are more suited for the long-term planning and research critical to successful restoration across large landscapes, which cross administrative boundaries, for example, state and district or field offices.

FY 2000

About $2.81 million in funding was applied to projects and programs that were restoration-related, and were primarily conducted within the GBRI area. Of this $2.81 million, about 62% (almost $1.74 million) was applied to projects that are directly related to GBRI (weed management projects). The remaining $1.08 million was applied to such things as riparian restoration, implementation of standards and guidelines on high priority allotments, and GIS mapping of sagebrush habitat, all of which are restoration-related, but not directly tied to on-the-ground restoration of uplands, the primary focus of GBRI.

FY 2001

Congress provided Emergency Supplemental Funding for restoration of $17.1 million. Of that, $7.35 million was applied to projects conducted within the GBRI area. Breaking down the $7.35 million, $4.02 million was on-the-ground restoration work. Much of the $9.75 million remaining from the original $17.1 million was applied to wild horse care after wildfire ($4.7 million), and control of grasshoppers ($1.4 million). Including the wild horse care as at least indirectly benefitting long-term restoration of the Great Basin, about $8.7 million of the $17.1 million appropriated by Congress was applied to on-the-ground restoration efforts within the GBRI area.

Here is a breakdown of the $7.35 million:

1. Cheatgrass and weed control – $3,819,000 for on-the-ground restoration work.
2. Fence repair/replacement because of wildfires – $2,711,000.
3. Reseeding/fuels reduction/seedbed preparation – $175,000 for on-the-ground restoration work.
4. Road repair – $ 145,000.
5. Vegetation treatment environmental impact statement supporting restoration projects – $137,000.
6. Watering structures (pipelines, guzzlers) – $108,000.
7. Boise Regional Seed Warehouse – $102,000.

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8. Great Basin Restoration Initiative, coordinator position – $75,000.
9. Miscellaneous – $79,000 (i.e., native plant seed research, tree and riparian shrub plantings, on-the-ground restoration work).

Additional funding, separate from the Emergency Supplemental Funding, in the amount of $1.02 million, out of a $1.5 million appropriation for invasive species control, was allocated to the GBRI area. Here is the breakdown of the $1.02 million.

1. Northeast California/Northwest Nevada, Sagebrush Steppe/Sage Grouse Recovery Project – $159,000.
2. Nevada Great Basin Restoration Project – $812,000.
3. Western Utah Sagebrush/Sage Grouse Restoration Project – $50,000.

These projects were under BLM's "Restoration of Threatened Watersheds" budget theme.

Additional funding, in the amount of $1.37 million, was allocated to the GBRI area for sage grouse/sagebrush habitat restoration and native plant/seed development. Here is the breakdown of the $1.37 million.

1. Nevada sage grouse recovery in Great Basin initiative – $168,000.
2. Nevada native seed banking agreement – $278,000.
3. Idaho greater Owyhee sagebrush ecosystem restoration – $375,000.
4. Oregon special status seed banking/sage grouse habitat restoration/Jack Creek restoration – $345,000.
5. Oregon native plant restoration on Steens Mountain – $85,000.
6. Development of native plant material for restoration – $117,000.

These projects were under either BLM's "Restoration of Threatened Watersheds" budget theme, or the "Public Land Treasures" budget theme.

Finally, there are benefits to restoration in the GBRI area attributable to hazardous fuel reduction treatments implemented under the Department of the Interior's National Fire Plan. Hazardous fuels treatments include prescribed fire, mechanical, and chemical treatments designed to reduce hazardous fuels and/or to restore fire to its natural role in ecosystems. BLM received $17.0 million in Title I funds (available for immediate use) and $74.7 million in Title IV funds (requires the declaration of an emergency by the President before they are available for use) for hazardous fuel treatment. BLM expects to achieve the following acreage

targets (as of 5/22/01) for hazardous fuel treatment in FY 2001 in Oregon, Idaho, Nevada, and Utah, the "core" states within the GBRI area. Included in the National Fire Plan budget for BLM was about $5 million for the "Native Plant Materials Development Project," of which $1.7 million was allocated to GBRI states in FY 2001. These funds will be used to increase availability of native plant seed through both research and by involving private growers in production.

State	*Acreage of Hazardous Fuel Treatment Projected–FY 2001*
Oregon	30,377 acres in wildland urban interface 29,623 acres of hazardous fuels elsewhere
Idaho	37,700 acres in wildland urban interface 48,306 acres of hazardous fuels elsewhere
Nevada	14,565 acres in wildland urban interface 30,435 acres of hazardous fuels elsewhere
Utah	5,510 acres in wildland urban interface 15,191 acres of hazardous fuels elsewhere

FY 2002 Budget Justifications

Funding provided by the FY 2001 Emergency Supplemental Funding for restoration that came through several subactivities: rangeland management, soil, water and air; riparian management; public domain forest management; wild horse and burro management; wildlife management; and threatened and endangered species management. Funding will continue to be channeled in FY 2002 and FY 2003 to complete restoration activities started in FY 2001.

BLM plans to continue making progress toward achieving its resource conservation and restoration goals by directing funding to the highest-priority areas. BLM identified priority subbasins – geographic areas that range in size from 250,000 acres to 2.5 million acres – that will receive the most attention and funding in FY 2002. The intent in these subbasins is to begin resource protection projects designed to address multiple resource objectives on an integrated basis. The GBRI area is a hotspot for these priority subbasins, because 40 of the identified 82 high-priority subbasins in the 11 western states lie within the GBRI area.

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The following table lists specific projects within the GBRI area planned for expenditure of FY 2002 funds; most of these projects lie within high priority identified subbasins previously mentioned:

Utah

Project: Kanab Subbasin Weed Control and Upland Vegetation Treatments

Potentially Funded By: Soil, Water, and Air

Project**:** Southeast Great Basin Sagebrush Restoration
Potentially Funded By: Rangeland Management, Wildlife Management

Project: Southwest Utah Endangered Species Habitat Restoration
Potentially Funded By: Threatened and Endangered Species Management

Nevada

Project: Eastern White Pine Native Shrub Restoration
Potentially Funded By: Rangeland Management, Wildlife Management

Oregon

Project: Upper Malheur Subbasin Forest and Woodland Treatments
Potentially Funded By: Public Domain Forest Management

Idaho

Project: Shoshone Basin Sage Grouse and Meadow Habitat Restoration
Potentially Funded By: Wildlife Management

Project: Owinza Shrub-Steppe Enhancement for Special Status Species
Potentially Funded By: Threatened and Endangered Species Management

As stated previously for FY 2001, there are benefits continuing into FY 2002 for restoration in the GBRI area attributable to hazardous fuel reduction treatments implemented under the National Fire Plan. Acreage targets for hazardous fuel reduction treatments – BLM-wide and therefore not restricted to the GBRI Area – are 100,000 acres in wildland urban interface areas, and 200,000 acres elsewhere, for a total of 300,000 acres. BLM is requesting $86 million in FY 2002 for hazardous fuels operation, $57 million of which is targeted to wildland urban interface fuels reduction,

with the remaining $29 million targeted for hazardous fuels reduction elsewhere. The "Native Plant Materials Development Project" is expected also to be funded in FY 2002.

GBRI AND FIRE MANAGEMENT

Efforts to restore the Great Basin and BLM's overall fire management program are closely linked in several ways. The complementary nature of fire management and restoration is being recognized within BLM, the Department of the Interior and the Department of Agriculture as never before.

The importance of restoration and rehabilitation was stated clearly in a report to former President Clinton, "Managing the Impacts of Wildfire and the Environment: A Report to the President in Response to the Wildfires of 2000." In the section entitled, "Key Points and Recommendations," restoration is featured prominently. The report reads, "Restoration activities include longer-term actions to repair or improve lands that are unlikely to recover naturally from severe fire damage. Examples include planting or seeding native species ... and other efforts to limit the spread of invasive species. Priorities include preventing introduction of non-native invasive species, promoting restoration of ecosystem structure and composition, rehabilitating threatened and endangered species habitat, and improving water quality."

The vital nature of restoration is echoed in other key documents. For example, the report, "Review and Update of the 1995 Federal Wildland Fire Management Policy," states, "The full range of fire management activities will be used to sustain ecosystem sustainability, including its interrelated ecological, economic, and social components." Later, the document reads, "Rehabilitation and restoration efforts will be undertaken to protect and sustain ecosystems, public health, safety, and to help communities protect infrastructure."

In the Department of the Interior's draft report "Integrating Fire and Natural Resource Management – A Cohesive Strategy for Protecting People by Restoring Land Health, " restoration is portrayed as vital to successful land management. Ecosystem restoration is one of three priorities listed for the Department of the Interior in the strategy. "The invasion of non-native plants has negatively affected ecosystems in many ways, including native species endangerment, reduced site productivity,

and degraded water quality. In some areas, non-native species have also greatly increased the fuel loadings, resulting in fire occurring both more frequently and more intensely," the document says in its "Background, Land Use History, and Condition of the Land."

Further, the document warns, "Without increased restoration treatments in these ecosystems, wildland fire suppression costs, natural and cultural resource losses, private property losses, and environmental damage are certain to escalate as fuels continue to accumulate and more acres become high-risk."

These and other documents affirm the integrated nature of fire and resource management. They also illustrate the awareness and importance credited to restoration at the highest level of the federal government. Restoration, intertwined with fire management, is a concept and practice judged as vital to the future health of public land.

PARTNERSHIPS

GBRI is supported by an impressive list of organizations. Not only is the number of groups impressive, but the diversity of interests they represent is remarkable. That's a good indicator of the widespread backing enjoyed by GBRI.

Among the groups that have expressed support for GBRI are:

Agencies
U.S. Geological Survey (USDI)
Agriculture Research Service (USDA)
Natural Resources Conservation Service (USDA)
Forest Service (USDA)
Bureau of Indian Affairs (USDI)
Bureau of Reclamation (USDI)
National Park Service (USDI)
Fish and Wildlife Service (USDI)
Nevada Department of Conservation and Natural Resources
Nevada Department of Agriculture
Nevada Division of Emergency Management
California Department of Fish and Game
Lassen County Fish and Game

Universities and Colleges

University of Nevada Reno
Community College of Southern Nevada
Utah State University
Oregon State University
Brigham Young University
University of Utah
Idaho State University
University of California (Berkeley)
Great Basin College

Interest Groups

Rocky Mountain Elk Foundation
The Nature Conservancy
Mule Deer Foundation
Nevada Cattlemen's Association
Nevada Woolgrower's Association
Society for Range Management
Red Rock Audubon Society
National Cattlemen's Beef Association
Northwest Chapter of the Society for Ecological Restoration

Native American Tribes

Pyramid Lake Paiute Tribe
Walker Lake Paiute Tribe
Fallon Paiute-Shoshone Tribe

Others:

Western Governors Association
U.S. Senator Larry Craig (Idaho)
Nevada Gov. Kenny Guinn
U.S. Rep. Michael K. Simpson (Idaho)
U.S. Senator Harry Reid (Nevada)
U.S. Rep. James A. Gibbons (Nevada)
State Senator Dean A. Rhoads (Nevada)

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This is only a sampling of the organizations and individuals who have demonstrated support for GBRI. Dozens of briefings and meetings have taken place among GBRI team members and interested individuals and organizations. GBRI is one of those unusual efforts where support is widespread and represents a diversity of interests and viewpoints.

GETTING THE MESSAGE OUT

The GBRI team was successful in getting the word out about the plight of the Great Basin and potential for restoration through a variety of mediums. Presentations at conferences such as the Department of the Interior's 2001 Conference on the Environment, the Society for Range Management, Society for Ecological Restoration, National Wildlife Society and others, provided information to and helped develop additional partnerships. GBRI team members participated with the "Born of Fire Consortium," a group of academics, research agencies and interested non-government organizations assembled after the 1999 wildfire season to assist in helping further the objectives of GBRI.

Briefing papers and presentations were given to key congressional staffs, upon request. The information was also used by other non-government organizations to further describe the plight of the Great Basin, and increase support for GBRI goals. For example, the National Wildlife Federation published, in its magazine, a story entitled, "America's Forgotten Ecosystem."

Besides the previous two documents mentioned earlier in this report, the GBRI team completed and distributed a brochure, poster and portable display about the Great Basin. A Great Basin website has also been launched. It will serve as an information source on the Great Basin for both the public and for BLM.

HOW GBRI FITS WITH OTHER INITIATIVES

A fair question to ask is, "How does GRBI fit in with all of the other programs and initiatives BLM is involved with?" Does GBRI conflict, supersede or take a secondary role to the Sagebrush Ecosystem Conservation Initiative, noxious weed reduction, or the direction provided by the Interior Columbia Ecosystem Management Plan (ICBEMP)? How does GBRI fit in with land-use plans? How does it fit in with the National Fire Plan?

The short answers to the questions above are GBRI fits well with the other BLM efforts, and no, no, no, and yes, it should be compatible with existing and new land-use plans and the National Fire Plan. The overall objective of GBRI, as explained in "The Great Basin: Healing the Land," is to "... maintain or reestablish plant communities that are healthy and capable of sustaining wildlife populations, clean water and air, recreation, and traditional multiple uses of the land. It will increase plant communities' resiliency to disturbances such as fire." The objective of other efforts and initiatives, in general terms, are in harmony with what GBRI aims to achieve.

In other words, what's good for sage grouse, or what's good for a threatened plant species, will be provided for through restoration efforts associated with GBRI. These efforts, while they may sometimes overlap, will work in concert to produce needed results.

Coordination among the leaders of the various initiatives is a must, to minimize duplicate work, extend resources, and identify which areas should be treated first. This coordination will be helped when the GBRI coordinator is selected and begins work.

Watershed prioritization is one example of how GBRI and another initiative support each other. The GBRI restoration team has embarked on a process that will allow the field to prioritize watersheds – the 5th level of the Hydrological Unit Hierarchy, ranging in size from 40,000 to 250,000 acres – for restoration and conservation. (For more detail, see "Profiles of Progress – Watershed Prioritization Worksheet" on page 17.) Prioritizing restoration for large land masses, which contain numerous landscapes, rather than prioritizing restoration to disparate tiny parcels, is a concept that sprang from ICBEMP. ICBEMP promotes use of a multi-scale approach to ecosystem management, with use of broader-scale, context-setting for prioritization of restoration at finer scales. For the Great Basin, it means that biological, social and economic conditions within each watershed with the GBRI area are assessed, so that the most critical watersheds in need of restoration and conservation can be identified and drive project prioritization. The watershed prioritization process will dovetail nicely with BLM's ongoing national level identification of conservation/restoration priority subbasins – the 4th level of the Hydrologic Unity Hierarchy, ranging in size from 250,000 acres to 2,500,000 acres.

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In summary, GBRI is intended to be one of the regional pieces of multi-scale restoration/conservation planning in BLM. As a regional piece, it is at a finer scale than the national level, but at a broader scale than the project level.

GBRI's restoration concepts will be plugged in to the Conservation/ Restoration Working Group, one of the elements of the Sagebrush Ecosystem Conservation Initiative. The Sagebrush Ecosystem Conservation Initiative includes restoration because BLM realizes that long-term conservation of sagebrush ecosystems and habitat can only be sustained with periodic restoration where needed. Without periodic, strategically located restoration, threats from noxious weeds and other undesirable plants, such as cheatgrass, will go unchecked and lead to the unraveling of all conservation efforts.

Profiles of Progress

What follows is a sampling of restoration projects that have been completed or started in the Great Basin. The list includes an array of activities, from field accomplishments to mapping and organizational work needed to support GBRI.

GBRI Coordinator Position

Progress has been made on the GBRI coordinator position. The position description was completed, approved by the personnel management committee, and the vacancy announcement is now being advertised. The coordinator will work under the supervision of the Nevada state director and work in the Nevada State Office, with reporting responsibilities to all state directors in the Great Basin. Funding for the position is secure.

The chief duties of the coordinator will be:

- Ensures coordination and consistency of restoration and conservation activities in and among the Great Basin states and the Washington Office.
- Coordinates and guides development and refining of criteria at the scale of watersheds and at the scale of projects within watersheds.

- Monitors GBRI accomplishments and expenditures.
- Conducts and coordinates outreach activities.
- Maintains a perspective of inventory and research needs throughout the Great Basin.
- Provides technical expertise and technology transfer.
- Coordinates and monitors development of plant materials and plant production programs.

Cooperative Ecosystems Studies Units (CESU)

CESUs are a network of cooperative study units designed to provide research, technical assistance and education to agency managers and other resource professionals. Each CESU is organized to work in partnership with federal agencies. CESUs are based at universities and focus on a particular biogeographic region of the country. Some federal agencies contribute research scientists and/or other professionals to work at CESUs under five-year agreements, subject to renewal.

A Great Basin CESU was approved, hosted at the University of Nevada/Reno, becoming operational in August 2001. Other partners in the Great Basin CESU include Utah State University, California State University at Fresno, Desert Research Institute, D-Q University, Great Basin College, Haskell Indian National University, Idaho State University, Oregon State University, University of Nevada at Las Vegas, University of Utah, and the White Mountain Research Station in California. Federal partners besides BLM include the U.S. Geological Survey, the National Park Service, and the Forest Service. The Great Basin CESU could be of great assistance in helping with the research, inventorying, monitoring and other related science needs of GBRI.

The BLM contact for the Great Basin CESU is John Haugh of the Washington Office.

Joint Fire Science Program Project Proposal

Three GBRI team members participated with representatives from academia and other federal research agencies in the four major states in the Great Basin to develop a "broad-scale regional experiment on using

surrogates for fire in managing fuels and achieving restoration in the Intermountain West" proposal. The proposal was submitted to the joint Fire Science Program (JFSP) by a subgroup of the "Born of Fire Consortium." The overall objective of the proposal was to develop and implement a standard protocol that incorporates site-specific fuels management and restoration treatments into a multi-scale design for landscape restoration on Intermountain rangelands. GBRI representatives provided guidance relative to the research needs identified in the "Healing the Land" strategy, plus, they assisted in writing the proposal.

The request is similar in intent to a current study of eleven forested sites in various locations in the United States.

The funding proposal, however, was denied. It is expected that the proposal will be resubmitted in the near future.

Other JFSP proposals that had help from GBRI team members included one dealing with the hydrological effects of prescribed burning in the Owyhee Mountains and post-fire recovery of good condition sagebrush-steppe rangelands in eastern Idaho.

Watershed Prioritization Worksheet

One product of the GBRI team is the "Conservation/Restoration Prioritization Worksheets for Watersheds." The worksheet is an analytical tool that assigns a numerical value to watersheds. (See Appendix 1 for a sample of the worksheet and more details on how it works and has been used in BLM.)

The numerical value of a watershed is derived as a cumulative rating for the following conditions:

- Wildland-urban interface (public health and safety concerns)
- Similarity of existing wildland fire regime to the historic range of variability of wildland fire regime
- Special status species and species/habitats of concern
- Integrity of current plant communities or plant associations, relative to invasive species abundance
- Riparian area function and condition (includes water quality)

- Soil properties (e.g., erodibility by water, erodibility by wind, salinity, sodicity)
- External partnerships/collaboration
- Cultural and historical resources and cultural landscapes

The worksheet further provides a means to assess the functionality of a watershed (functioning, functioning at risk, improperly functioning with potential for recovery under reasonable costs, or improperly functioning with uneconomical recovery costs).

Taking into account the numerical rating and assessment of the functionality of a watershed allows for the final step: determining if the watershed is a candidate for conservation, a candidate for restoration, or a candidate for neither conservation or restoration.

The worksheet should prove to be a good means of helping to set priorities about which watersheds need the most and quickest restoration attention in the Great Basin. GBRI team members may schedule training in the future at field locations regarding how the worksheet should be used.

Identifying Subbasins in the Great Basin

A project to produce an objective and definitive means of identifying the geographic extent of the GBRI area (using subbasins as the component hydrologic units) was completed by Mike "Sherm" Karl, Bruce Durtsche and Karen Morgan. Using a GAP Composite Vegetation Data Theme, the percentage of each of seven vegetative types present was calculated for the GBRI area, plus a buffer along the outside of the boundary, as determined by members of the restoration team. The total percentages ranged from zero (subbasins that had no acreage classified among the seven vegetation types) to 98.5 percent. All subbasins containing at least 20 percent of their area within the seven GAP vegetation types were identified as part of the GBRI area. This GBRI area includes portions of previously unaffected states (Montana, Wyoming and Arizona). It is anticipated that the final GBRI area boundary will shrink slightly and the final number of included subbasins likely will be 151. The results of the work provide a common delineation of the GBRI area, plus a description of the different vegetation types located in the GBRI area.

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National Science and Technology Center (NSTC) Contributions

NSTC has developed several other products supporting GBRI, one of which is the delineation of the GBRI area and the included subbasins, mentioned previously. Other products include:

- General GIS support in preparing mid- to broad-scale digital data bases and maps. For example, one product is a map that shows the change in cheatgrass areas in the Great Basin on a landscape basis. The primary objective of the task was to produce quantifiable data and a map showing changes, both increases and decreases, in cheatgrass over time. The satellite imagery used for this mapping effort is the National Oceanic and Atmospheric Administration's "Advanced Very High Resolution Radiometer" (AVHRR) satellite data.

- Several specific remote sensing and GIS-related products.

- Support toward developing the GBRI conservation/restoration prioritization worksheet for watersheds. NSTC specifically provided criteria for soils and special status species.

- The GBRI team requested information on existing inventories of eight specific weed categories (all thistles, all knapweeds, leafy spurge, cheatgrass, tamarisk, medusahead, skeleton weed and tall white top). Based on the collected data, the goal was to prepare a map showing the degree of infestation in Great Basin counties. Despite difficulties in obtaining data, the product was delivered in December of 2000. The GBRI team requested that where noxious weed data existed for a specific county, that the entire county be highlighted as having that weed. The subsequent map underscores the need for consistent, reliable data.

- The GBRI team also requested historical change detection mapping for cheatgrass and pinyon-juniper communities. A study area in Utah was selected for the pinyon-juniper project, and another in Idaho was selected for cheatgrass. In Utah, aerial photography from 1938-1939 was compared with aerial photography from 1997-1998 to interpret and produce 16 USGS 7.5 minute topographic, digitized quadrangles. Change detection analysis will be completed at NSTC, with the results delivered to the GBRI team. In Idaho, the aerial photography used as a basis for comparison is

from 1950-1951, 1987 and 2000. The work will also result in a series of 7.5-minute USGS topographic quadrangle maps, which will be subsequently digitized and interpreted. The final product is expected to be finished in the fall of 2001.

Emergency Fire Rehabilitation in Nevada

In FY 2000, rehabilitation was conducted on 500,000 acres, with another 300,000 acres planned for FY 2001. The rehabilitation projects included applying diverse seed mixtures on more than 50 different burns in northern and central Nevada during the two-year period. More than 2.5 million pounds of native seed was used in this effort. The work of the field offices represents a good first step in restoration of these burned areas. An additional 1.5 million acres of burned area are being protected to allow for natural recovery.

Cheatgrass Control Efforts in Elko, Carson City, and Winnemucca

Efforts to refine control strategies for cheatgrass in areas where it has established monocultures are currently being conducted in the Carson City and Winnemucca field offices. Both districts applied an herbicide and will be seeding the treated areas this fall. Additionally, the Elko Field Office worked with the University of Nevada-Reno Cooperative Extension program on a sheep-grazing trial to determine the effectiveness of using sheep to reduce cheatgrass competition.

California Funding for Weed Treatment and Sage Grouse Habitat Improvement

California's Eagle Lake Field Office received $158,000 for weed treatment and sage grouse habitat improvement work. A weed abatement and treatment program received $100,000; a cooperative soil survey with Natural Resource Conservation Service was allotted $25,000; and a sage grouse habitat assessment, conducted jointly with the California Department of Fish and Game and the Nevada Division of Wildlife was funded at $28,000. A challenge cost-share for $5,000 with the Lassen County Fish and Game Commission allowed purchase of materials and tools to repair damaged sage grouse water developments.

The Great Basin Restoration Initiative

A Hand to Nature: Progress to Date

Great Basin Native Plant Selection and Increase Project

A working group of the Great Basin Restoration Initiative cooperated in developing a funding strategy to increase availability of native plants for rehabilitation after wildfires and restoration of disturbed wildlands. The strategy, using an applied science approach, integrates several state proposals to increase native plant production, knowledge and use within the Great Basin. Partners in the collaborative approach include BLM offices in Utah, Idaho and Nevada; USDA Forest Service Shrub Sciences Lab; Utah Crop Improvement Association; Agricultural Research Service in Logan, Utah; Utah Division of Wildlife Resources; and the Natural Resources Conservation Service. Other cooperators may join in the future.

The proposal integrated native plant development submissions previously prepared by Idaho, Utah and Nevada BLM offices that were consistent with the "Goals and Actions" contained in the GBRI report "Healing the Land." The project represents a regional approach to native plant enhancement encompassing the majority of the Great Basin desert, the largest block of public rangelands (about 75 million acres) in BLM. The proposal meets an important objective of the GBRI strategic plan, also outlined in "Healing the Land."

Priorities for funding include selection of native seed sources to their culture, seed increase, and use on degraded rangelands. The proposal has four categories and includes 54 native plant species. The categories are: (1) Increasing native plant materials for restoration; (2) Managing re-establishment of seed sources and technology to improve the diversity of introduced species monocultures; (3) Technology transfer; and (4) Genetic research of native plants. Studies and activities will focus on maximizing the increase in native plant materials available for rehabilitation of burned rangelands and restoration of degraded rangelands in the Great Basin.

Total funding for the project is $4.6 million over five years. The majority of the funds will be transferred to the USDA Forest Service's Rocky Mountain Research Station, Shrub Sciences Lab in Provo, Utah, through an interagency agreement. The expected funding to begin the project in FY 2001 is $800,000.

Cheatgrass Control Projects in Washington

All the necessary planning and clearances for the Rattlesnake Cheatgrass Control Project will be completed this year, with the field work scheduled for next fiscal year. The 20-acre project site is about 15 miles southeast of Yakima, Washington, an area subject to frequent wildland fire. The area is virtually a mat of cheatgrass. Plans are to treat the site with a chemical, followed by seeding with native plants. Funding for the project totals $40,000.

In the Border Resource Area, 300 acres of cheatgrass were treated with chemicals and then re-seeded.

Chemical Treatment Cooperative Program in Oregon

The Burns District entered into a three-year cooperative program with Oregon State University to assess the impacts of fall application of the herbicide, "Oust," where native vegetation has been invaded by medusahead. The study will evaluate the impacts on the associated species and provide a scientific basis for the decision to use or not use Oust, after an injunction on herbicide use is lifted. Heavy infestations of medusahead are occurring in habitat of threatened and endangered species, as well as in areas of forb species critical for sage grouse. Total funding for the project is $44,000.

Also in the Burns District, several small sites infested with medusahead were treated with an herbicide and removed manually in the last two years.

Variety of Restoration Projects in the Vale Field Office

Planning for restoration work has been completed on Succor Creek (2,000 acres) and Bully Creek (3,500 acres), and is in progress for the McDermitt Complex, totaling 30,000 acres. Rehabilitation work was augmented by spraying 1,000 acres of rush skeletonweed on the Jackson fire. Also on the Jackson fire, the Vale Field Office seeded 2,000 acres with sagebrush, and planted native vegetation on an additional 11,000 acres.

On the Kern fire, 326 acres were seeded with non-native plants, 1,630 acres were seeded with native species, and 3,700 acres of sagebrush was seeded. The Vale Field Office seeded 600 acres with non-native vegetation and 600 acres of sagebrush on the Wildhorse fire. Alkali Flat was a burn-

and-spray project of 1,000 acres, which was seeded under the Jackson emergency site rehabilitation after it was burned over.

In addition, the Vale Field Office seeded about 5,500 acres of non-native species and 2,500 acres of native vegetation as part of the rehabilitation of the White Mule fire. Finally, a 600-acre experimental site was sprayed and seeded as part of an effort to determine which chemicals are most effective in reducing competition with annual grasses while not harming native vegetation.

Restoring A Former Agricultural Site in the Prineville, Ore., District

In 1992, the Farmers Home Administration transferred title to 512 acres near Clarno, Oregon, to BLM. Experts from the U.S. Fish and Wildlife Service found unusually high values for fish, wildlife and other resources. The land was transferred to BLM, in part, because it manages adjacent public land in the federally designated John Day Wild and Scenic River. A 70-acre agricultural field, now in public ownership, had been leased to grow crops.

In 2001, a Record of Decision was signed for the John Day Wild and Scenic River Management Plan. The plan directed the 70 acres be taken out of commodity production and planted with perennial vegetation. Land surrounding the parcel have weed problems, and the risk of the field being infested was high unless BLM took quick action.

The Prineville Field Office, under the auspices of GBRI, planted perennial grasses, irrigated to establish the grasses, and sprayed weeds on the 70 acres. Although spraying to control weeds occurred three times, the results are promising.

Fillmore Field Office (Utah) Completes Fire, Weed and Sage Grouse Work

The Fillmore Field Office completed a variety of restoration projects. On the Railroad Fire, 20,100 acres were seeded, and 10,500 acres were treated for knapweed with better than a 95% control rate. Two-hundred acres were treated for Scotch thistle and low white-top. Seed mix comparison trials were conducted on the site, using two rates of native seed mix, a BLM seed mix, and Agricultural Research Service seed mix, and control plots.

On five separate fires, more than 23,400 acres were seeded, all of which appear to be successful thus far. More than 200 acres of white top and squarrose knapweed were treated as part of the West Mona emergency fire rehabilitation (EFR).

Other investigations in the Fillmore Field Office examined knapweed competition. These investigations included planting of desirable species planted into plots of established knapweed; planting knapweed into established plots of different species; and planting knapweed with desirable species. The results of the investigation will provide information about how to slow this aggressive invasive species. On another project, investigations were directed toward controlling cheatgrass with four herbicides. Yet another promising investigation concerns release of the salt cedar leaf beetle, a potential biological control for salt cedar.

In 2000, noxious weed control was completed on 800 acres outside of EFR sites, with another 700 acres completed to date in 2001.

In conjunction with the Cedar City Field Office, an inventory of sage grouse populations and habitat was completed following disturbance of habitat by wildland fire.

The Fillmore Field Office is planning to restore 2,100 acres of a cheatgrass monoculture through prescribed fire, herbicide application, and reseeding in the fall of 2001.

This is a sampling of work being done. Other restoration projects are being completed or planned in the Fillmore Field Office.

Idaho Sagebrush Seeding After Wildfires

Sagebrush and wildlife, especially sage grouse, are closely linked in Idaho and other western states. Over the last ten years, wildfires have burned an average of 250,000 acres of public land in Idaho, much of it sagebrush. Concerns about sagebrush loss due to wildfires resulted in a concerted effort to reseed sagebrush after wildfires, where sagebrush was present prior to the fire. This concern is well-illustrated in southeastern Idaho, in a 700,000 acre area called the "Big Desert." Since 1996, 76 percent of the sagebrush in this sage grouse stronghold have been lost to wildland fire. In 2000, of the 117,000 acres burned, 101,000 were aerially seeded to sagebrush. To protect these seeded areas from future fires, greenstrips (strips of fire-resistant vegetation) were seeded along 24 miles

of roads to reduce the risk that a future wildfire will wipe out all of the current sagebrush restoration. Monitoring and evaluation is continuing to determine the success of the current effort and to modify treatments in the future, if results are unsatisfactory.

WHAT COMES NEXT?

GBRI has been around for two years, yet it remains a work in progress. The effort is beginning to show results, some of which are highlighted in this report. But it's also fair to say that not enough has been done, and the majority of the work looms ahead for years. As Nevada State Director Bob Abbey said in his introductory statement, it's time to pick up the pace. BLM and its partners need to do that, if for no other reason than the ecological deterioration of the Great Basin is accelerating. Maybe it's a race, and if it is, it's a race that the Great Basin and BLM cannot afford to lose.

Some steps that must be taken in the near future are clear.

- *The Great Basin coordinator position must be filled.*

The work of the GBRI team has progressed about as far as it can go without a coordinator. The effort needs a full-time coordinator to take care of the day-in, day-out details, to promote the work, to provide the vision and technical support, and work with partners. The GBRI coordinator also must provide the all-important link to the state directors, field managers and specialists in the Great Basin, who will be responsible for carrying out much of the work. With the position advertised, this important step is much closer to being taken.

- *A consistent source of funding must be established.*

The Great Basin biogeographic region contains the highest concentration of land managed by BLM, and it is imperiled. Piecing together a budget works only for awhile. What is needed now is a consistent source of funding that will allow the proper prioritization, planning and project work to be accomplished.

- *Coordination among other programs and initiatives within BLM must improve.*

GBRI, on a regional scale, has the same aim as other initiatives in BLM. All of them seek to improve the health of ecosystems. A concerted effort to work closely and pool resources must be made to make all of these efforts as efficient and as effective as possible. It's vital that restoration work in the Great Basin needs to be approached in a holistic manner, and not competitive, fractured efforts varying according to jurisdiction or resource program. Also, more base resource information needs to be obtained to help ensure maximum cost-effectiveness and success in restoration. Soil information and potential plant community information is an example of where more information is needed. Ensuring that the necessary coordination within the agency takes place will be a primary responsibility of the GBRI coordinator.

- *Work with partners, educational efforts, and overall visibility of GBRI needs to accelerate.*

GBRI enjoys wide support among interest groups, elected officials, academia and many other organizations and individuals. Yet the support remains undirected in many ways. It needs to be translated into restoration work at the field level. At the same time, there is a striking need for more education about the ecological challenges facing the Great Basin, for both internal and external audiences. While the visibility of GBRI has been good, and several information products have been produced, an overall long-term communication strategy needs to be developed, soon after the coordinator is selected.

- *Restoration planning must be completed.*

Restoration work takes time and planning. One area manager in the Great Basin said his "reserve of restoration projects is exhausted." He suggested it takes a minimum of three years to properly conduct restoration work – a year to design the project, with appropriate consultation; another year to meet the conditions of the National Environmental Policy Act and other requirements; and the third year to

conduct on-the-ground restoration. The time and planning factors must be accounted for as restoration work is considered and budgets prepared.

SUMMARY

GBRI has made progress since its inception in the wake of the 1999 wildfire season. The effort has a mixture of products and field work to its credit. Public and employee awareness is increasing, both of the ecological problems confronting the Great Basin, and some of the steps being taken to address those challenges. The very term "restoration" is becoming more understood and accepted, both within BLM and among cooperators and interest groups. Restoration is prominently featured in several key documents, including the report to former President Clinton, "Managing the Impacts of Wildfire and the Environment: A Report to the President in Response to the Wildfires of 2000," which became the starting point for the National Fire Plan.

GBRI, though, needs to gain more momentum. The difficult fire season of 2000 accentuated the restoration needs in the Great Basin. GBRI must take root and become a part of the BLM mainstream. Selecting a coordinator and securing funding are two important steps toward that achieving that goal.

Challenges in the Great Basin will be resolved in one way or another. If restoration work withers and dies, nature will provide the resolution, with harsh and unacceptable consequences. If BLM and its cooperators continue the work and allot the attention and resources required by the problems of the Great Basin, then the story will have a much more acceptable outcome.

As Bob Abbey wrote in his opening introduction to this progress report, restoring the Great Basin is the perhaps the most significant challenge any BLM employee will face, and how we react says much about our ability, vision and how we chose to care for the land.

Appendix 1
Great Basin Restoration Initiative (GBRI)
Use by Field Units of "Conservation/Restoration Prioritization Worksheet for Watersheds"

Background

The "Conservation/Restoration Prioritization Worksheet for Watersheds" has its origin in the BLM report "The Great Basin: Healing the Land." In "Healing the Land," seven objectives are identified for restoration. One of them is:

Develop Criteria for Prioritizing Restoration Work and Funding

Common criteria for setting restoration priorities would ensure consistency in allocating funds for the work. They would also provide clear guidance to field and resource area offices regarding what restoration work is considered most important. The criteria should be developed in consultation with field representatives.

During the course of several Great Basin Restoration Initiative (GBRI) meetings, eight criteria were identified by GBRI team members, several of whom are field representatives. The eight criteria are listed below, and include biological, physical, social, and economic considerations.

1. Wildland-urban interface (public safety and health concerns)
2. Similarity of existing wildland fire regime to the historic range of variability of wildland fire regime
3. Special-status species and species/habitats of concern
4. Integrity of current plant communities or plant associations, relative to invasive species abundance
5. Riparian area function, including water quality
6. Soil properties (e.g., erodibility by water, erodibility by wind, salinity, sodicity)
7. External partnerships/collaboration
8. Cultural and historical resources and cultural landscapes

The eight criteria were identified with the expectation that they would be assessed and ranked at a landscape scale, in this case watersheds. That way, watersheds can be ranked for their restoration and conservation priority.

A Hand to Nature: Progress to Date

Watersheds were selected as the geographic area for prioritization for two reasons. First, the BLM Washington Office, in the FY 2001 Annual Work Plan General Directive, states that priority subbasins for conservation/restoration will be identified, and within those subbasins, priority watersheds will be identified. Watersheds are nested hierarchically within subbasins, with watersheds conforming to the 5th level of the Hydrologic Unit Code and ranging in size nationally from 40,000 to 250,000 acres, whereas subbasins are the 4th level of the Hydrologic Unit Code and average about 450,000 acres in size, ranging from 250,000 to over 2 million acres in size. A national level assessment of biophysical and socio-economic conditions suits identification of subbasins for conservation/restoration prioritization, whereas a regional level assessment – for example the Great Basin Restoration Initiative – suits identification of watersheds for conservation/restoration prioritization within the subbasins for the region.

Secondly, consistent with language in "Healing the Land" and the BLM's FY 2001 Annual Work Plan General Directive, restoration is to be focused on ecosystems that are larger than the site-specific scale, and that deal with all biophysical and socio-economic issues in an integrated manner.

Use of the Prioritization Worksheet by Field Units within GBRI

Idaho, Nevada, California, and Oregon have made some use of the Prioritization Worksheet to date. It is still premature to expect the field units to use the Prioritization Worksheet for its intended role, because the priority subbasins for conservation/restoration at the national level have yet to be finalized by the Washington Office, though that is expected to happen soon. The Prioritization Worksheet then will be ready to use for the GBRI area.

Here is a summary of how Idaho, Nevada, California, and Oregon have used the Prioritization Worksheet to date:

Idaho

Idaho received $1.2 million for "cheatgrass and weed control" in FY 2001. The Prioritization Worksheet for watersheds was used by the Upper and Lower Snake River field offices to prioritize watersheds for "cheatgrass and weed control" restoration, within the restoration priority subbasins identified in the Interior Columbia Basin Ecosystem Management Project's Final Environmental Impact Statement. In addition, all field offices were

directed to use the Prioritization Worksheet to assist in prioritizing fuels management projects on the landscape.

Nevada

An earlier, October 2000, version of the Prioritization Worksheet was used to prioritize projects across Nevada. The thinking was that the criteria contained in the Prioritization Worksheet seemed applicable to the project scale, as well as the watershed scale. Each field office attempted to apply the Prioritization Worksheet to their proposed projects. Difficulties with the Prioritization Worksheet's use at that time centered on two points:

1. A lack of narrative descriptions for the criteria, which if present, would have assisted the field in its interpretation of how to rank the criteria; and,

2. Because of the lack of narrative descriptions, there were broad differences in rankings for individual criteria among field offices.

These difficulties tended to skew the results of project prioritization, and caused a general feeling of discontent in some field offices. To lessen the discontent and provide a greater basis of commonality, the criteria were changed to broader criteria, which were noxious weeds, cheatgrass, wild horse and burros, special status species, watershed quality, and soils. Each field office then compared and ranked their projects based on these criteria. This process was deemed more subjective than if the Prioritization Worksheet had been used in full.

In February 2001, the Prioritization Worksheet surfaced again during deliberations based on the FY 2001 Annual Work Plan General Directive to identify watersheds within conservation/restoration priority subbasins. The field offices were given direction in the General Directive to use water quality, special status species, public health and safety, rangeland health, and wild horse and burros as five criteria for prioritizing subbasins. The field offices performed this operation but did not further identify watersheds within these subbasins. The perception was that the Prioritization Worksheet was complex, with numerous rankings, and the data that would be required to populate the Prioritization Worksheet was suspect.

Training on the Prioritization Worksheet may be provided to address the concern about complexity.

A Hand to Nature: Progress to Date

California

To date, the Prioritization Worksheet was introduced to the field offices and its importance for consistency was stressed. In addition, the Prioritization Worksheet was presented at the annual GIS workshop as a tool for prioritization. One difficulty raised was that California has yet to delineate all of its watersheds, so it is premature to expect the field offices to prioritize watersheds with the worksheet. According to the General Directive in the FY 2001 Annual Work Plan, states have until March 31, 2002, to delineate their watersheds.

Oregon

The Vale District used the concepts of the Prioritization Worksheet, rather than the worksheet itself. The other eastern Oregon offices (Burns, Lakeview and Prineville) do not have team representation yet on GBRI and have not used the Prioritization Worksheet. Vale used most of the criteria in the Prioritization Worksheet during its priority-setting deliberations over which Geographic Management Areas (GMAs) in their Resource Management Plan should be prioritized for rangeland health assessments and rangeland health evaluations. GMAs are contiguous groupings of watersheds (and also livestock grazing allotments) that share similar resource potential and land-use issues, and are comparable to subbasins in geographic extent. The message is that the criteria contained with the Prioritization Worksheet were used in the intended manner, to prioritize actions within watersheds or livestock grazing allotments within the GMA.

A difficulty expressed by the Vale District in its use of the Prioritization Worksheet is that issues such as livestock grazing are administered at a management unit (that is, allotment) that differs from a watershed unit. When watersheds are ranked through the Prioritization Worksheet entail a change in livestock grazing management to achieve restoration, the changes in livestock grazing management must be done at the allotment unit level, allotment by allotment. *Watersheds have yet to be mainstreamed into the BLM as management units*. The GBRI Prioritization Worksheet is a useful tool to help focus on the watersheds and areas that need attention. However, use of the Prioritization Worksheet for prioritizing funding allocations at the watershed scale is problematic, because not all management changes (for example, livestock grazing) can be administered at the watershed scale. Therefore, not all units of accomplishment can legitimately be tied solely to a watershed unit, either.

In the context of livestock grazing, watersheds are merely unfenced areas, within which are pastures or allotments. Or, watersheds might actually lie within an allotment or allotments, and watersheds need to be considered in context when management adjustments or restoration projects are proposed.

Appendix 2
Members of the Great Basin Restoration Initiative Team

Robert V. Abbey,	Nevada State Office Management Team Representative
Diana Brink	California State Office
Bruce Durtsche	National Science and Technology Center
Pat Fosse	Dillon Field Office
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