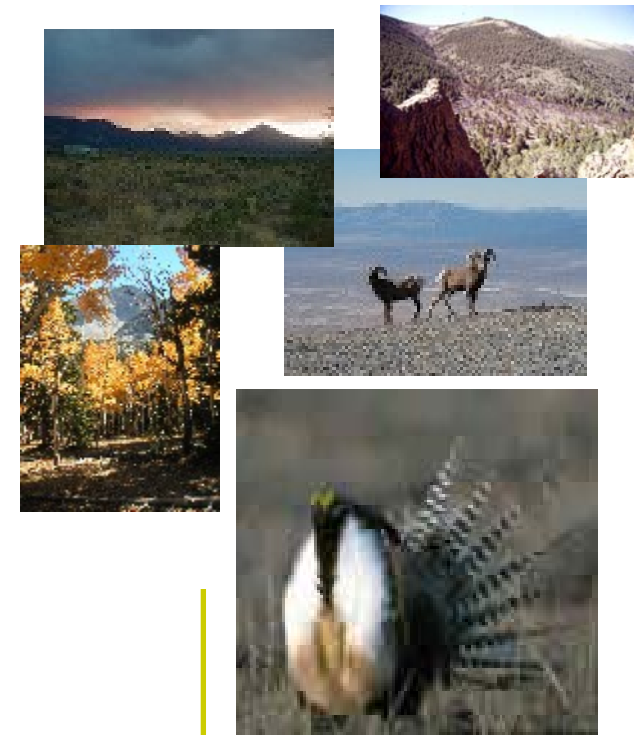




Great Basin Environmental Program Proposal



GREAT BASIN ENVIRONMENTAL PROJECT BUDGET

The budget is separated between the first two years and the subsequent years, and shows in principle how the funds will be allocated.

First two years (each year)

\$2 million Federal Grant to University of Nevada, Reno

Expenditures:

- \$1.0 million State agencies
- \$.5 million Grants and contracts
- \$.5 million UNR management

Out years (each year)

\$25 million Federal Allocation

Expenditures:

- \$12.5 million State agencies
- \$ 9 million Grants and contracts
- \$3.5 million Agency office

FEDERAL AGENCIES AND THE FEDERAL LEAD

The lead federal agency for the aquatic based environmental programs, such as the Chesapeake Bay Program, is the U.S. Environmental Protection Agency. However, for the Great Basin Environmental Program, the lead federal agency may be an agency that focuses more on terrestrial issues related to the environment.

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FIRST STAGE

During the first two years the Great Basin Environmental Program will be managed by the University of Nevada, Reno. Among the tasks to prepare for the full implementation of the Great Basin Environmental Program are the following:

- Consulting with the Governors of the Great Basin States about the Program and their Participation
- Consulting with the Federal Congressional Delegations about their Participation
- Consulting with the State Legislatures about their Participation
- Working with the Educational, Federal and State Agency Partners and the Private Sector Partners
- Setting Up and Operating the Great Basin Foundation Outreach for the Great Basin Environmental Program to the General Public

It is estimated that these tasks will require about two years and the cooperation of all parties that will be involved. The cost will be about \$3 million dollars per year.

SECOND STAGE

In the years forward, the lead federal agency will manage the program. The University of Nevada, Reno will have a role similar to the other cooperating land grant institutions. The lead federal agency will discharge the following functions:

- Staff the Group of Governors and the Congressional Delegations who will be Responsible for the Overall Management of the Great Basin Environmental Program
- Staff the Committees or Working Groups who will Develop the Strategies for Accomplishing the Goals set out by Senior Management Team
- Develop, Manage and Report on the Monitoring Schemes for the Issues to be Addressed as set out by the Management Team
- Conduct the Mapping and Program Coordination Necessary to Meet the Management Team Goals
- Coordinate with the Private Sector, NGOs, the Foundation and Others
- Establish Competitive Contracts and Grants with the State Agencies, Educational Institutions, the NGOs, as well as Other Private and Public Sector Participants



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EXECUTIVE SUMMARY

The proposed Great Basin Environmental Program is a bold and innovative environmental management initiative modeled after the Chesapeake Bay Program and approximately 25 other estuarial environmental programs that have been operating in the United States since the approval of the Clean Water Act. It will be the first such program aimed at a terrestrial area, the Great Basin, designated as one of the most imperiled ecosystems in the United States. The proposal will establish partnerships and integrate efforts with federal agencies, state agencies, NGOs and the private sector to address critical ecosystem issues.



Although not an estuarial area, the Great Basin Environmental Program has many similarities to those that have been designated for special environmental action in the United States. At the heart of the ecosystem issues for the Great Basin is the rapid increase in the population and the tendency of the population to live in urban areas. This increase in population and changing distribution of the population has put significant stress on the environment in the Great Basin, and threatens to change the environment in irreversible ways. If the Great Basin is to continue

to be a place of choice for residents and visitors, new and more effective approaches to the environment and its special ecosystems will have to be formulated and implemented.

The feature of the Chesapeake Bay Program and other estuarial programs that has made them effective is the broadness of the management approaches, the coordination of groups that have capacities for addressing the issues, and the ability to engage the private citizens in efforts to better manage the environment. Similar characteristics will be evident in the Great Basin Environmental Program. Existing federal and state agencies will be more effective through closer collaboration, NGOs will become more involved in addressing issues of greater scope, and the private sector and citizens will be engaged through a foundation that has as its mission addressing the environmental issues of priority to the Great Basin.

There are several excellent Great Basin programs in place for conducting scientific research, on-the-ground implementation and management, providing educational programs and facilitating public input in the decision making process. These include, but are not limited to, the Great Basin Ecosystem Studies Unit, the BLM Great Basin Restoration Initiative, the U.S. Forest Service Great Basin Collaborative Watershed Research and Management, Great Basin USGS National Biological Information Infrastructure, Eastern Nevada Landscape Coalition, Northern Nevada Stewardship Group, and the Great Basin Plant Materials Center. In addition, state agencies in all of the Great Basin states are also actively contributing to the regulation and management of Great Basin land and related natural resources. However, most of these programs have either minimal or no funding. This proposal requests new funding to establish the Great Basin Environmental Program as an umbrella organization to effectively coordinate the efforts of these various programs and to jointly develop priorities to address the critical issues of the Great Basin.

- **Water Conservation and Use**—surface water availability and usage patterns, ground water availability and recharge, water quality and water resources management. Here the issue was that most of the surface water is over subscribed in terms of use. New, more efficient water technologies will be required to alleviate these problems. Much of the ground water has low recharge, and is thus a fixed asset of the Great Basin. Population pressures mean that current ways of using water must change.

- **Land Use and Health**—large scale landscape management, land use patterns and changes, public and private lands, agriculture, forestry and mining as historical industries, soils and soil erosion and changing tenure and land policies. Land is a primary resource of the Great Basin and is being influenced by its use and fires and other episodic events. The federal government is responsible for managing much of the land, and in turn, leases portions of the land to ranchers for livestock grazing.

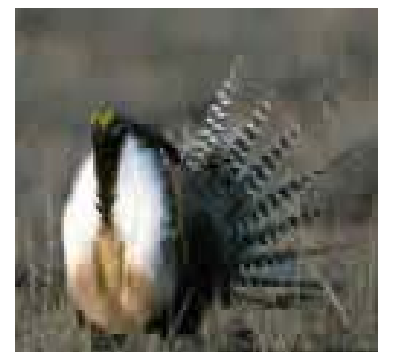


- **Urban, Rural, Wildlands Mosaic**—the urban rural interface, wildlands and their place, economies of sparse settlements, air quality and conflicting values and preferences and how they are changing. The predominance of urban growth as the population increases is causing numerous problems and cries out for better management. At the other extreme there are the wildlands, and how this should be managed with increasing populations and the advent of technologies that make them accessible by citizens.

- **Cultures and Communities**—cultural resources, preservation and celebration. Historical, anthropological issues, as well as political and institutional changes all present continuing issues of balance and tension for residents and visitors of the Great Basin. Many of the native cultures are under great pressure. The same is true for immigrant populations. When these cultures are gone they cannot be recovered. Yet their existence and functioning adds to the diversity of life and enjoyment for the Great Basin residents and visitors. It is vital that these communities and cultures be sustained and allowed to flourish.



- **Biodiversity**—endangered species, ecosystem health and sustainability, and incentives for biodiversity conservation are among the issues. The isolated character of the Great Basin waters, land and other habitats makes for special diversity concerns. Population pressure, technology and climate change are affecting the biodiversity impacts that require careful management if the diversity is to be maintained and to grow. These populations are themselves indicators of the health of the environment, and essential to effective management of the ecosystems of the Great Basin.





These committees or working groups are also effective ways of getting interagency cooperation and sharing of funds. Cost sharing is common among the state and federal agencies as well as NGOs, the private sector and the foundation. The total amount of funding for the Chesapeake Bay Program has been estimated close to \$1.5 billion between 2000 and 2005. The Great Basin Environmental Program represents an important way to focus the environmental effort on a set of issues and facilitate groups who have resources to address these issues in a collaborative way.

Mapping of the Great Basin will also be a responsibility of the lead agency. The maps are of watersheds, ecological zones, ground water sources, population growth and distribution and other factors that make the work of the committees or working groups more effective. These maps are a way of getting committees or workgroups to pull together on the basis of shared knowledge and not a directive culture.

The Great Basin Environmental Program will enhance existing environmental initiatives currently operating in the basin. Efforts that are under way in the Great Basin or in parts of the Great Basin include, but are not limited to the Joint Fire Sciences Program, the Sage Steppe Project, USDA IFAFS Restoration of Cheat Grass Infested Range Lands, the New Collaborative Management and Research in the Great Basin Effort. It is anticipated that some of these projects could be singled out by the governors and the congressional delegations for direct support by the Great Basin Environmental Program.

GREAT BASIN ENVIRONMENTAL ISSUES

An initial organizational workshop for the Great Basin Environmental Program was held at the University of Nevada, Reno on October 26, 2006. In attendance at the workshop were forty representatives from the University of Nevada, Reno; the University of Idaho; the University of California, Davis; Oregon State University; Utah State University; the University of Nevada, Las Vegas; the Desert Research Institute, the Bureau

of Land Management; the US Fish and Wildlife; USDA Forest Service; the Nevada Department of Wildlife; and Resource Concepts Inc. In addition, these issues were presented to selected representatives of state and federal agencies at a conference on Collaborative Watershed Management and Research in Reno on November 29, 2006. The agency leaders present agreed to sign a "Letter of Cooperation" endorsing the Great Basin Environmental Project. A similar document will be developed for the cooperating educational institutions.

The six areas identified as critically important to the ecosystems of the Great Basin and of priority for attention are as follows:

- **Wildfires**—range restoration and rehabilitation, invasive species, vegetation changes and preemptive versus corrective approaches. The issue here was that the attempts to manage wildfires are more corrective than preemptive and that the focus should be on preemptive strategies. Wildfires have consumed great portions of the Great Basin Lands and are increasing in frequency and in scale. As well they are leaving in their path vegetation changes that make the threat of fire more prevalent.



The proposal is for a two stage effort. Over a period of two years, the Great Basin Environmental Program will be operated out of the University of Nevada, Reno. The funding required for this first stage is \$2 million per year. More than half of these funds will pass through to state agencies for programs in the Great Basin. The remaining funds will be shared among the universities and other educational institutions as well as the NGOs on a competitive basis, and will focus on jointly determined priority issues. In addition, the University of Nevada, Reno will seek to establish a Great Basin Foundation as a basis for involving the private sector and individual citizens.

During the second stage, the Great Basin Environmental Program will be turned over to a lead federal agency and an organization composed of the Governors of the Great Basin states, similar to the Chesapeake Bay Program,

and be funded at about \$25 million per annum. The funded allocations are 15 percent for operations and management; 50 percent to state agencies and NGOs for programs to address priority environmental issues; and 35 percent to universities and other organizations to develop research that is targeted to Great Basin priority environmental issues.

A key feature of the Great Basin Environmental Program will be the development and management of a monitoring system that shows the impacts of the targeted environment and ecosystem initiatives. This monitoring system has proven essential to the Chesapeake Bay and other estuarial environmental programs. The citizens and the governmental agencies and the NGOs can only attract added resources if there is a recognized and credible measurement of the progress that is being made on the key environmental issues.





INTRODUCTION

The Great Basin environment is influenced by three dominant factors population change and distribution, climate change and technology. Population has increased rapidly during the past decade from 2.9 million in 1990 to 4.9 million in 2004, and become more urbanized. In 2006 more than 60 percent of the basin population lived in urban and suburban areas. Climate change is of great importance to the environment in the Great Basin. The basin is a high desert area where both surges or episodic events and gradual changes will have important consequences, perhaps more so than in areas that have different environmental endowments. Finally, technology has both positive and negative impacts on the environmental condition of the Great Basin, influencing the activities of the population, industry and interaction with the environment.

The Great Basin is wedged between the Sierra Nevada Mountain range on the West, the Wasatch Branch of the Rocky Mountains on the East, and the Snake River on the North. The rough size of the Great Basin is about 900 miles North to South and 570 miles East to West. It includes the fast growing urban communities including Salt Lake City, Ogden-Layton, Provo-Orem, Reno-Sparks, Boise, Nampa, Logan, Idaho Falls, Pocatello, Carson City, and Bend. Las Vegas, although not in the Great Basin, if defined on a drainage basis, has as well a major and increasing influence on its ecosystems. The urban and suburban populations are growing at a rate that will require different uses of water, create difficult urban rural interfaces, and is responsible for differing demands for environmental services by the population than in the past. Rural areas are experiencing changes as well including depopulation, slowed economic growth and development and an aging population.



Climate change is important and has the specter of increasing during this century. Estimates are that the climate has warmed by 0.6 to 1.1 degrees Fahrenheit during the past 100 years, and may warm from 3 to 6 degrees Fahrenheit by the end of the century (Environmental Protection Agency 1998 and Wagner 2003). With this change may come not only the gradual warming of the climate, but an increase in severe storms.

Technology was the third feature identified to have an overarching influence on the environment. This embraces many positive and negative factors. Examples of positive factors include the more water efficient residences, improved techniques of water management for the mining and agriculture industries, new concepts of societal organization and action with the growth of NGOs, and capacities for added mapping and the collection and organization of other information about the condition of the environment. Negative effects are present as well and include more easy capacities for human population to use wilderness areas, hunting and fishing pressures, increased and improved roads, and increased urban rural interface issues and urban sprawl.

Another unique feature of the Great Basin is the fact that the federal government owns most of the land, approximately 75 million acres or 72 percent. On this federal land is located much of the basic industry of the Great Basin economy. Mining, agriculture and the recreation industry are examples. These industries and resources are controlled by the federal government Bureau of Land Management and the U.S. Forest Service as well as various state agencies. With the environmental degradation of the Great Basin there are conflicting pressures on these federal and state agencies on the best approaches to the management of these lands.

Environmental problems in the Great Basin are numerous and require attention. According to Noss et al, 1995 and Wisdom 2005, the Great Basin is one of the most imperiled ecosystems in the United States. A recent assembly of scientists from the land grant and other educational institutions in the Great Basin, representatives of federal and state agencies and the private sector identified six issues that are in need of more coordinated and careful attention if the degradation of the Great Basin is to be reversed. These were wild fires; water conservation and use; land use and health; the urban, rural and wild lands mosaic, culture and communities, and biodiversity.

The proposed Great Basin Environmental Program will not only support existing initiatives addressing the environment issues in the Great Basin, but will be more encompassing. The program will feature involvement from the communities, federal and state agencies and academic institutions in a comprehensive effort to reverse the environmental damage that currently exists, and develop policies and regulations that can provide an improved livelihood for the growing and changing distribution of the population and visitors to the Great Basin.

PROJECT MANAGEMENT AND INTEGRATION WITH EXISTING ENVIRONMENTAL PROGRAMS

Once organized, management of the Great Basin Environmental Program will be similar to the Chesapeake Bay Program. The Governors of the Great Basin States, along with the Congressional delegations, will meet once a year and be responsible for the overall direction of the program and the selection of priority environmental issues. Over time these issues may change along with the tactics for addressing them. Examples include best practices for watershed management, water conservation methods, wildlife counts/surveys, community management of the rural urban interface and others.



The designated lead federal agency will provide day to day management of the Great Basin Environmental Program. This agency will have an office in the Great Basin, and work with the other federal agencies to focus and orient multi-state programs to the critical issues that have been determined by the governors and the congressional delegation from the Great Basin states. Committees or working groups will be assigned to design the multi faceted strategies to address the issues identified by the governors and congressional delegations. The lead agency facilitates the committee meetings, keeps notes and follows up to see that the actions and activities agreed upon are carried out on a timely basis.

The make up of the committees or working groups includes representatives of federal agencies, state agencies, NGOs, the private sector and the foundation. The membership in the committees or working groups will include organizations from the private and public sector, and all are encouraged to contribute solutions and toward the mitigation of the relevant environmental issue. The committees or working groups are evaluated on the basis of monitoring data that is kept or managed by the lead agency. An important feature of the environmental initiatives to date has been their capacity to develop monitoring data that allows the governors and congressional delegations to determine the effectiveness of the programs that they have set on a Basin wide basis. Indicators of progress are the lynch pin of the environmental initiatives, and provide the political leaders with evidence that they can take to the public on the success of the environmental program.