

# Saving the Charmed Goose

## Reconciling Human Demands with Inherent Limitations in the Greater Yellowstone Ecosystem

*Charles R. Preston*



**E**ARLY ONE MORNING, a poor farmer arose to gather eggs from his coop. He was astonished to find that one of his geese had laid an egg of solid gold. He rushed back to his house, egg in hand, to share the good news with his family. For many weeks, the farmer gathered one gold egg each day from the charmed goose. The farmer and his family were soon able to pay off all debts and begin to accumulate some wealth. But as the farmer grew wealthier, he also grew greedy and impatient. He imagined a great cache of gold inside the goose, and decided to sacrifice the goose and extract all the riches inside at once. When he sacrificed the goose, however, he found no gold inside—only the raw materials and internal, complex, “goosey” system to produce eggs of gold. He spent the rest of his increasingly impoverished life trying to duplicate the gold-producing system of the late goose, to no avail.

This slightly embellished version of the classic Aesop tale holds at least two important lessons. First, we can easily destroy the very thing we most treasure by failing to understand it and to respect its integrity and inherent limitations. Second, it may be quite impossible to duplicate or restore a complex system once it has been destroyed or compromised. Often lost in the “cloud” of this tale is the silver lining of implied promise—that if we learn to respect the integrity and inherent limitations of a resource, then we may benefit from its bounty well into the future.

While the lessons and implied promise of Aesop’s tale may have universal relevance in space and time, I believe that they are especially pertinent to the Greater Yellowstone Ecosystem (GYE) in these early years of the twenty-first century. Beyond its symbolic meaning to people throughout the world, the GYE

supports globally significant biological, geological, and cultural resources, and provides substantial opportunities for economic, scientific, recreational, aesthetic, and spiritual fulfillment for residents and visitors alike. This remarkable place holds great value for people with diverse backgrounds and interests. Yet,

**It is not too late to forge a comprehensive strategy that will preserve the integrity and uniqueness of this region for future generations, but we must move quickly, decisively, and collaboratively to do so.**

our numbers and activities are presenting increasing threats to its integrity and identity as we begin this new millennium. It is not too late to forge a comprehensive strategy that will preserve the integrity and uniqueness of this region for future generations, but we must move quickly, decisively, and collaboratively to do so—casting aside dogma, traditional ideological differences, and rear-view mirrors along the way. Just as the GYE served as the grand stage for creation of the global model of early conservation when Yellowstone National Park (YNP) was established as the world's first national park in 1872, the region is now in a position to showcase the development of a more robust conservation paradigm for the new millennium.

### **An Overview of the Greater Yellowstone Ecosystem and Its Significance**

The Greater Yellowstone Ecosystem construct was initially developed to delineate a contiguous area representing critical grizzly bear habitat and range in the Yellowstone area (e.g., Craighead 1977, Craighead 1979, Craighead 1980). Subsequently, it has been defined, redefined, refined, and described by various authors (e.g., Clark and Zaunbrecher 1987, Craighead 1991, Glick et al. 1991, Patten 1991, Harting and Glick 1994, Reading et al. 1994, Hansen et al. 2002) to provide a logical context for their analyses and comments concerning ecological, human demographic, and policy topics. Here, I am using the expanded GYE definition of Hansen et al. (2002), to include the 20 contiguous counties in Wyoming, Montana, and Idaho surrounding Yellowstone National Park. This definition incorporates the high plains surrounding a largely mountainous landscape, populated by just fewer than 360,000 human residents as of the 2000 U.S. census (Hansen et al. 2002). The region also plays host to more than 3 million visitors annually. The GYE encompasses all of Yellowstone and Grand Teton national parks, the John D. Rockefeller, Jr., Memorial Parkway, six national forests, three national wildlife refuges, two Indian reservations, some lands managed by the Bureau of Land Management, and substantial state, county, municipal, and privately-owned lands. Of the federally administered public lands, roughly 2.5 million hectares lie in national forest

wilderness areas or national park wilderness zones, and roughly 2.5 million hectares are located in non-wilderness areas. The bulk of national forest lands outside of wilderness areas are managed for wildlife habitat, watershed integrity, and multiple human uses, including motorized transportation and recreation, grazing, logging, and mining. Most of the state and private lands, except those with established conservation easements, are available for a wide variety of uses, including business and residential development.

The headwaters of three major river systems, the Green, Snake, and Yellowstone, originate within the GYE. These rivers and other waterways in the region provide habitat for native cutthroat trout, river otters, bald eagles, ospreys, alder and cottonwood trees, and other native aquatic/riparian fauna and flora, exceptional angling and other recreational experiences for residents and visitors, and water for agriculture, cities, and towns along the drainage corridors.

The nucleus of the GYE is Yellowstone National Park. It is revered the world over as a showpiece for wildlands conservation—a place where human industry and convenience are generally secondary to preservation of native wildlife and natural processes. It is a place set aside for people to visit and enjoy a vignette of wild America. It became the world's first national park in 1872, was declared a biosphere reserve in 1976, and was added to the World Heritage List in 1978. Yellowstone National Park (YNP) includes the world's most diverse and intact collection of geothermal features, connected to an underground network of waterways that reaches out into the GYE far beyond national park boundaries. The space now occupied by YNP has been used and influenced by people of various cultures for at least 10,000 years, and it continues to be influenced by our activities today. Nonetheless, it remains the core of the last large, virtually intact ecosystem in the northern temperate zone of the earth. With the controversial restoration of the gray wolf to YNP in 1995, this system is unique in the lower 48 United States, because it again contains a complete complement of the prominent wildlife species that lived here when Euro-Americans first explored North America.

But YNP is not a closed system, and even combined with the adjacent protected lands of the John D. Rockefeller, Jr., Memorial Parkway and Grand Teton National Park, it cannot contain nor indefinitely sustain viable populations of some of its most prominent wildlife species. These include mule deer, trumpeter swans, bald eagles, Yellowstone cutthroat trout, and especially bison, pronghorn, elk, grizzly bears, and gray wolves. These species depend to some extent on the public and private lands surrounding the national parks, and therefore depend on the tolerance and willingness of humans living on the edge of Yellowstone and Grand Teton national parks to share

multiple-use public lands and private lands with them. General Philip H. Sheridan was among the first to publicly acknowledge that YNP was not adequate to support its wildlife when he expressed his opinion, in 1882, that the park should be expanded significantly to the east and south, in part to accommodate the needs of migrating elk and other ungulates (Haines 1996). Thus, the modern concept of a Greater Yellowstone Ecosystem traces its roots back to the nineteenth century, and the ecological aptness of the concept has subsequently been reinforced through scientific inquiry (e.g., Craighead et al. 1995).

The dominant human culture and economy in the GYE outside the national parks revolved around agriculture, logging, mining, and energy development through much of the twentieth century. Each of these ventures carries the potential for ecological harm as well as economic benefit. Farming fragments and replaces native habitat with cultivated monocultures, alters natural waterways through irrigation, and may introduce chemical pesticides into soil, groundwater, and open waterways. Livestock grazing can degrade natural habitats, especially in riparian areas, and lead to conflicts with native predators and ungulates on both private and public lands. Timber harvesting reduces available habitat for some native species, may increase soil erosion and siltation of waterways, and promotes construction of habitat-fragmenting roads. Hard-rock mining and energy development may also promote road construction and interruption of wildlife migratory corridors, substantially alter habitats, and may introduce toxins into the ecosystem. Even when these activities are conducted outside the national park reserves, they exert some effects on the wildlife, ecological system, and aesthetic characteristics that the parks share with the rest of the GYE. The overall impact of these activities on wildlife, water and air quality, scenery, and other natural resources in the GYE depends on their location, intensity, and the manner in which they are conducted. These activities and the “Old

West” cultural values and attitudes generally associated with them are often viewed as impediments to long-term conservation. Today, however, large mammal diversity and abundance in the GYE are greater than they were at the beginning of the twentieth century, and the region remains rich in other natural amenities (e.g., clean air and water, vast expanses of open spaces and exceptional scenic beauty, opportunities for solitude away from human-caused light and noise pollution) and high-quality outdoor recreational opportunities (e.g., backcountry camping, horseback riding, hiking, fishing, hunting, wildlife watching) that have disappeared or been severely compromised through much of the rest of the lower 48 United States. As we press forward into the twenty-first century, however, gathering forces of the “New West” are clashing and paradoxically combining with the dwindling but still powerful forces of the Old West to profoundly challenge the natural amenities, quality of life, and long-term economic health of the GYE.

### Old West Meets New West

Historically, human population densities have been sparse in much of western North America, including the GYE, leaving large, unbroken tracts of undeveloped rangeland and other open spaces (Wilkinson 1993, Glick and Clark 1998, Power 1998). But settlement patterns are dramatically changing the landscape in the New West. Traditional lifestyles and economies built around extractive industries and agriculture are giving way in many parts of the GYE to more “footloose” lifestyles and economies built around service and technology (Power 1991, Rasker and Glick 1994). It is largely the quest for unimpaired scenic beauty, wildlife, clean air and water, and outdoor recreational opportunities that have helped fuel recent human population and economic growth through much of the Rocky Mountain West, but especially in the GYE (e.g., Rasker and Hansen 2000). These same natural amenities were also cited

in a survey of business owners in the northern portion of the GYE as hooks that keep local residents from leaving (Johnson and Rasker 1995).

Rasker and Hansen (2000) and Hansen et al. (2002) critically examined human population growth and economic changes in the New West, in general, and in the GYE in particular. They identified the mountain West, with a growth rate of 25.4%, as the fastest growing region of the United States during the last decade of the twentieth century. Although urban centers, such



The northwest corner of the park, both in and outside the park boundaries, supports important winter range for many species of ungulates.

as Denver and Salt Lake City, have grown substantially, rural areas have also experienced significant growth. In a detailed analysis of cultural changes occurring between 1997 and 2002 in the 20 counties of the GYE in Wyoming, Montana, and Idaho, Hansen et al. (2002) found that human population size increased by 55%. The five fastest-growing counties they studied increased by a dramatic 107%.

Population growth in the GYE has been accompanied by a steady economic shift from traditional, largely extractive industries to a diverse array of technology-based businesses,

the socioeconomic transition from the Old West to the New West (Riebsame et al. 1997) is degrading the very natural amenities that initially inspired much of the population and economic growth. Hansen et al. (2002) argue that if this trend continues, it will not only compromise natural ecosystem function and many prominent wildlife species, such as the grizzly bear, but could impede future economic growth in the GYE as well.

While some communities in the GYE are undergoing rapid population as well as cultural and economic change rep-

## The population growth and economic changes that have occurred in recent decades in the GYE carry profound implications for land use and conservation.

producer services, and non-labor (i.e., investments, retirement) income sources. Hansen et al. (2002) reported that while timber, ranching, farming, oil, gas, and mining accounted for 19% of the total personal income in the Greater Yellowstone region in 1970, these industries accounted for only 6% of the region's total personal income by 1995. This trend away from traditional economic sectors was especially pronounced in the five fastest-growing counties in the GYE. In general, the most robust, fastest-growing economies in the region (e.g., Teton County, Idaho; Teton County, Wyoming; and Gallatin County, Montana) have been buoyed by non-traditional sources of income, such as professional and service industries, and money earned from past investments, pensions, and other retirement benefits.

The population growth and economic changes that have occurred in recent decades in the GYE carry profound implications for land use and conservation. Many of the new residents who have relocated to the GYE specifically cite scenery, proximity to wilderness, and outdoor recreation as important influences in their choice of a place to live and work (Johnson and Rasker 1995). Increasing numbers of newcomers want to live nearer to open spaces and public lands, in close proximity to hunting, fishing, and wildlife-watching opportunities. Many of these newcomers readily identify themselves as conservationists, support land use planning regulations, and profess a holistic philosophy of ecosystem management. As a consequence of their lifestyles and growing numbers, however, urban expansion at the edges of municipalities has increased significantly, and rural residential development has increased more than 400% since 1970 in the Montana and Wyoming portions of the GYE region alone (Hansen et al. 2002). This expansion has come largely at the expense of agricultural and other open spaces providing scenic vistas and resources for wildlife. Exurban expansion also increases the spread of invasive, noxious weeds, the year-round presence of hikers and other recreationists in important wildlife habitat, and may alter more wide-reaching ecological processes, such as natural wildfire regimes. Thus, the urban and exurban sprawl characterizing

representative of the New West, the region continues to be dominated by strong utilitarian, dominionistic, and libertarian values and attitudes typical of the Old West (Reading et al. 1994). These attitudes tend to breed skepticism or outright hostility toward conservation initiatives such as human use restrictions on public lands, attempts to guide or limit private land use and exurban sprawl through planning and zoning regulations, and regulations favoring restoration or recovery of threatened and endangered species. In some cases, the anti-conservation sentiment is driven by the belief that the region's economy still depends on agriculture and the extraction of timber, minerals, and oil and gas resources, and that development of these commodities is the lifeblood and highest and best use of public lands for the economic well-being of rural people (Rasker et al. 2004). This has been described by Power (1991) as the "view through the rearview mirror." In other cases, the anti-conservation sentiment is more philosophical, driven by a strong belief that personal freedoms of local people are paramount, and that conservation initiatives are nothing more than conspiratorial schemes to expand the powers of the federal government, limit people's access to public lands, restrict landowner's property rights, and destroy the traditional western way of life (see Henneley 1992).

Recently, opposition to the restoration and continued presence of the gray wolf to the GYE has provided a rallying platform for many local residents who feel frustrated and alienated by what they perceive as an attack on their western



CHARLES R. PRESTON

Current logging operation in the Shoshone National Forest.

culture and values. Wilson (1997) has posited that the wolf is merely a symbol of a much broader cultural clash between elements of the Old West and New West over access to social power, the nature and extent of private property rights, and the appropriate relationship between humans and nature (i.e., anthropocentric/dominionistic vs. biocentric/holistic). While much of the ongoing conflict surrounding the restoration and management of the gray wolf to the GYE is rooted in philosophical ground, the concerns of some local stockgrowers and hunting outfitters stem from what they view as a very concrete threat to their individual livelihoods.

Similar philosophical and pragmatic debate swirls around grizzly bear management in the GYE. The recent, heated controversies surrounding large predator management in the GYE accentuate the importance of private and multiple-use lands to the region's megafauna, as well as the importance of local residents' perceptions and attitudes to long-term wildlife conservation. Unfortunately, the rhetoric surrounding large predator conservation and management has served to polarize people into pro- and anti-conservation camps, based in part on Old West–New West affinities. Many people and community leaders in the region have tended to develop their positions on predator management, planning and zoning regulations, or other important GYE conservation issues by choosing an ideological camp instead of examining facts in evidence in the context of a clear goal or vision for a sustainable GYE future. By its nature, this approach highlights the differences in extreme viewpoints among GYE residents rather than identifying common ground. It also emphasizes worst-fear scenarios, rather than addressing legitimate concerns in a critical manner. Worst of all, the public dialogue in GYE communities rarely addresses the most significant single reality that underlies all of the surface issues. Simply stated, there are inherent limitations to the number of people and the sum impact of our activities that the GYE can support without losing the ecological integrity and natural amenities that make this place unique and drive its modern economy. Once we acknowledge this reality, we must decide if the ecological integrity and natural amenities of the GYE are worth saving. If the answer is yes, then we can start from common ground to blend the best of the Old West and New West and create a Next West vision for the GYE.

### **Creating a Common Vision Across Boundaries**

The mosaic of public and private land ownership, varied management mandates, and diversity of stakeholder perceptions and attitudes has created conflicting ideas about GYE land use. Consequently, the lack of a shared, clearly articulated vision for the GYE, together with a swelling human population and exurban sprawl, are producing increasingly fragmented landscapes with impaired ecological function. As habitats become more compromised, we can expect an increase in human–wildlife conflicts and even greater threats to



People are drawn to this region for its scenic beauty, wildlife, clean air and water, and recreational opportunities.

biodiversity integrity and natural amenities in the GYE. Many have argued that the best way to address those threats is to implement a more coordinated, holistic, landscape or ecosystem-level approach to managing land use in the region (e.g., Craighead 1979, Clark and Zaunbrecher 1987, Berger 1991, Glick and Clark 1998). Reading et al. (1994) recognized the importance of the attitudes of people living in the GYE to creating a shared vision and coordinated management approach to the region, and found that the majority of people they surveyed were supportive of coordinated management to conserve natural amenities in the region. However, most respondents were unwilling to include private and state lands in management plans. The authors attributed this unwillingness to traditional Old West concerns about governmental control and economic issues. Most GYE residents in the study seemed to see ecosystem management as a threat to their control over public and private land use. They believed that the economic and social health of local communities depended on continued resource extraction, and feared that oil and gas development and timber harvesting would be substantially or moderately limited by ecosystem management policies.

Holistic, ecosystem management of the GYE is further complicated by the jumble of state, federal, and tribal agencies, county commissions, planning and zoning boards, and other entities that are charged with administering various components of the GYE. Some laws and regulations, such as the Endangered Species Act, legally require uniform, cross-boundary stewardship in some cases, but are often difficult to monitor and enforce. Furthermore, government regulations without incentives tend to engender great resentment among landowners, recreationists, and others who cling steadfastly to the primacy of private property rights and individual freedoms in virtually all circumstances. Glick and Clark (1998) have suggested that cross-boundary, whole-ecosystem stewardship of the GYE will require fundamental changes in resource law,

administration and policy, and economic policies and tax incentives. They further argued that success in whole-ecosystem management must involve active participation by all stakeholders, and would thus require some, perhaps all stakeholders to relinquish a modicum of traditional control.

It seems clear that to sustain the ecological integrity and unique suite of natural amenities of the GYE into the future, the entire region must be managed with deliberate hands guided by a common vision. The vision must be constructed

**If the overarching goal is to sustain the natural amenities and ecological integrity of the GYE, then the vision of how to achieve that goal must be created with the understanding that there are inherent limitations to the number of people and the sum impact of our activities that the region can support without losing the critical amenities and integrity desired.**

purposefully with contributions from all stakeholders to accommodate the essential needs of each to the extent possible. But if the overarching goal is to sustain the natural amenities and ecological integrity of the GYE, then the vision of how to achieve that goal must be created with the understanding that there are inherent limitations to the number of people and the sum impact of our activities that the region can support without losing the critical amenities and integrity desired.

The idea of creating a common vision for conservation of the GYE is not new. In 1985, the National Park Service and U.S. Forest Service initiated a six-year planning effort to develop an integrated, interagency ecosystem management strategy for the region. At the end of the day, however, the resulting "Vision" document was not widely embraced, and did not attain many of its objectives. In addition to some logical flaws in its foundation (see Lichtman and Clark 1994), the Vision was undermined and eventually vanquished by a well-organized, traditional Old West alliance of local government officials and agriculture, extractive industry, and motorized recreation advocates who portrayed the Vision as a substantial threat to personal property rights and individual freedoms of local residents. Many local residents and policymakers felt left out of the Vision, and viewed it as a tool of the federal government and extreme environmental preservationists to block access to public lands and limit use of private lands. The reluctance of some ecosystem management advocates to embrace the participation of private landowners and local communities in land use planning lent credence to the objections of anti-Vision forces. The success of the anti-Vision alliance demonstrated the strength and continuing influence of Old West ideology in local communities in the GYE, and the intensity of distrust between these forces and ecosystem management advocates. But the Vision exercise also served to provide lessons

to help build a more inclusive and robust vision for holistic GYE management.

The most important lesson was that any successful attempt to create a broad-scale, cross-boundary management vision for the GYE must actively involve all major stakeholders, especially local landowners and residents. It is also critical that ecosystem management goals, objectives, and strategies be founded in sound science that is broadly shared in public as well as scientific forums. Recent history with gray wolf management and other GYE

issues has demonstrated that ideologically-based dogma, fear, and even hysteria can dominate public rhetoric and policymaking when scientific data are lacking or are not clearly and widely disseminated. Even when scientific information is widely and effectively

disseminated, there always will be some vocal, ideological extremists on either side of an issue trying to command a following to influence policy. But informed public dialogue tends to marginalize the voice of extreme ideologues, especially when ideology does not best serve the interests of the majority of people.

In recent years, several community-based ecosystem management efforts have emerged to address local land use issues in the GYE. Glick and Clark (1998) highlighted four of these (i.e., the Beaverhead County Partnership, Madison Range Landscape Assessment and Adaptive Management Project, Henry's Fork Watershed Council, and Greater Yellowstone Coalition Stewardship Program) as potential prototypes showing promise for resolving cross-boundary conflicts. The authors identified five important components that these initiatives share: a) collection and dissemination of sound data; b) creation of public forums for open dialogue; c) active involvement of local stakeholders; d) articulation of concrete management goals; and e) ongoing evaluation and flexibility to deal with feedback and changing circumstances. These and other local initiatives have set the stage for broader programs aimed at creating and implementing a common vision for holistic management across the GYE—a vision that explicitly integrates the economic realities of the New West.

For example, the National Parks Conservation Association has embarked on an ambitious Gateway to Yellowstone program to build public awareness of the economic value of Yellowstone National Park and the natural amenities of the GYE to the health and vitality of gateway community economies and cultural identities. The goal of Gateway to Yellowstone is to expand the base of public support for conservation of GYE landscapes and wildlife by finding common ground among diverse stakeholders and building alliances among

non-traditional constituencies (Tim Stevens, personal communication). Another non-governmental organization, the Yellowstone Business Partnership, is an organization of businesses in 25 counties in and around the GYE. This organization is dedicated to working with gateway and other local communities throughout the three-state GYE to encourage and support economic growth in ways that take advantage of and support long-term conservation of wildlife and other natural assets in the region.

### Exurban Sprawl: “It won’t happen here”

Arguably, the single greatest threat to the ecological integrity, natural assets, and western cultural identity of the GYE is continued exurban sprawl driven by shifting, New West demographic and economic trends. It is increasingly difficult for ranchers and other major landowners to reject lucrative financial offers to sell their open lands for development. Yet these private, open rangelands are critical to conserving wildlife, preserving scenic landscapes, and maintaining traditional western lifestyles. While communities like Jackson, Wyoming, and Bozeman, Montana, have been grappling with rapid population growth and exurban sprawl for several years, many residents in other communities in the GYE were convinced that “it won’t happen here.”

That conviction was shaken for one previously slow-growing community in 2004–2005, when a large, gated residential community was proposed for development. The development, called Copperleaf, is slated to replace a large hayfield and sagebrush–steppe bench encompassing a portion of the Shoshone River drainage 25 miles east of Cody, Wyoming, along the route to the east gate of Yellowstone National Park. The site is located in critical winter range of deer and elk, and is heavily used by hundreds of these ungulates between October and April each year. It is also located in a particularly scenic corridor, just a few miles west of the Shoshone National Forest boundary. The proposed development has been met with passionate and widespread opposition from county residents, including the voices of some property rights advocates who had previously opposed more stringent planning and zoning regulations for Park County, Wyoming.

Some local residents have expressed opposition to the Copperleaf development on the grounds that it would diminish

wildlife habitat and the scenic beauty of the area, while others argue that the development would change the cultural character of the area. Still others point out that the high costs of providing and maintaining infrastructure for exurban development would probably surpass tax revenues (see Alternative Energy Resource Organization 1996, Coyne 2003). The most compelling concerns for many, however, have focused on the availability of fundamental, limited resources, for example, water. Final approval for Copperleaf is pending the results of multiple appeals and legal actions, but the proposed site plan was tentatively approved by a county government generally sympathetic to development and Old West property rights arguments.

Whether or not Copperleaf moves ahead with development plans, the issue seems to have galvanized Park County citizens to think more deliberately and pragmatically, rather than ideologically, about land use in the future. Copperleaf advocates have correctly pointed out that more poorly planned, environmentally damaging Park County developments have been approved in the past with far less opposition than Copperleaf has faced. But open spaces are vanishing, and priorities may be changing in this part of the GYE. In the wake of Copperleaf, some Park County residents have even suggested a “No New Footprints” campaign whereby county governments would stem the loss of natural assets to new home construction by providing incentives for people to purchase previously occupied homes rather than add new footprints to exurban areas.

The recent proliferation of land trust authorities and other organizations concerned with conserving open spaces for wildlife and agriculture testify to the recognition of land use planning as key to the future of the GYE. The Nature Conservancy has long promoted landscape-scale conservation, and pioneered the concept of conservation easements in the



CHARLES R. PRESTON

Broad view of the Wapiti Valley, showing a major portion of the pastures slated for the Copperleaf development 25 miles east of Cody, Wyoming.

GYE and elsewhere. Many western sportsmen and ranchers recognize the need for landscape conservation and even conservation easements, but are uncomfortable with some aspects of The Nature Conservancy options, largely due to perceived philosophical and/or economic considerations. Organizations such as the Greater Yellowstone Coalition, Rocky Mountain Elk Foundation, and the Wyoming Stockgrowers Agricultural Land Trust offer alternative means for landowners to conserve

An environment without these resources tends to foster public opinion and local policy decisions founded in dogma rather than on a critical review of information. Museums and cultural institutions are in a unique position to provide credible information to public audiences and replace dogma with information. Collections, research, and informal science education through exhibits and programs will always be the cornerstones of natural science museums, but I have argued to a variety

## Museums and cultural institutions are in a unique position to provide credible information to public audiences and replace dogma with information.

open lands for continued natural, cultural, and economic values. Collectively, these programs offer a broad suite of options to assist landowners interested in preventing all or some of their property from being subdivided and developed.

### The Importance of a Well-Informed Public

As Glick and Clark (1998), Preston (2004), and others have pointed out, good conservation decisions supporting a common vision for the GYE will depend largely on a well-informed and engaged local population. Unfortunately, GYE communities tend to be isolated, with limited access to objective centers of information and forums for public discourse.

of audiences (e.g., Preston 1999, Preston et al. 2002, Preston 2004) that one critical role for natural science museums in the new millennium is to provide an objective, public forum for the dissemination of information and diverse perspectives on contemporary conservation issues. Museums are also in a position to explore public perspectives on issues to better understand how people form opinions and how to communicate most effectively with the public.

For example, before we unveiled our *Greater Yellowstone Adventure* exhibits in the Draper Museum of Natural History in 2002, we conducted an extensive, front-end survey of potential visitors representing local communities and our national audience. We found that we needed to employ different interpretive approaches to communicate effectively with each of these audiences, largely due to their differing perspectives on conservation issues in the GYE (Preston et al. 2002). Local audiences were far more suspect of information without attribution, and feared that local concerns about issues like wolf restoration would be ignored or trivialized. We took this information into account when developing exhibits, and were able to successfully communicate with local audiences by highlighting diverse perspectives on wolves in the GYE alongside the presentation of authoritative information (Randi Korn and Associates 2003).

We continue to assess audiences' attitudes toward contentious issues by soliciting and displaying written comments from our visitors. This has both helped us to understand the interests and existing knowledge base of our audiences and broadened the perspectives of many of our visitors who may not have been exposed to the ideas of people who think differently from themselves. The ongoing dialogue we have established with museum visitors helps us to develop topics and approaches for educational programming in our galleries, classrooms, lecture halls, and field sites. When hosting informational forums on contentious conservation issues such as managing free-roaming horses, human-grizzly conflicts, or wildfires, we have found that it is important to include the voices of different stakeholders with the stated goal of finding common ground. Our approach has been to build program partnerships with agencies, organizations, institutions, and private landowners



Grizzly 104, currently featured in the Draper Museum of Natural History Greater Yellowstone Adventure exhibits.

who may often talk about one another, but rarely talk to one another in a managed environment. For our part, we make it clear that it is not the role of our institution to advocate for a particular policy position, but rather to advocate for the best information possible and a dialogue that is based in critical thinking. We have found that participants and audiences often express pleasant surprise at how broad the common ground is on most issues. Our hope is that by creating this kind of environment, we can foster civil public discourse that will reveal innovative, collaborative solutions to important conservation issues in the GYE. In this way, our institution can move beyond its more traditional role of documenting and interpreting the past, to help shape the future of our region. Although not every community in the GYE has a museum, many have public institutions that can and do serve as a source of objective information and a forum for public discussion. These community-based institutions can play a crucial role in identifying issues important to their constituents and in shaping an ecologically, culturally, and economically sustainable future for the GYE. The effectiveness of these museums and other community-based information centers in promoting critical thinking and providing a common base of information throughout the GYE can be enhanced if we create shared program networks so that lectures, conferences, and even exhibits can be presented simultaneously or serially. The Draper Museum of Natural History and our parent institution, the Buffalo Bill Historical Center, are beginning to explore opportunities for shared programming among GYE centers of informal learning.

### **Blending the Best of Old West and New West to Create the Next West**

The Greater Yellowstone Ecosystem is a place like no other in the world. It is the last place where we can possibly observe wild bison, elk, pronghorn, mule deer, moose, grizzly bears, black bears, gray wolves, cougars, bald and golden eagles, and trumpeter swans in the same field of view and argue about what role they should play in our lives and how they should be managed. One can avoid these controversies by living almost anywhere else in the world. It is a place of spectacular landscapes and true wilderness, where one can still escape human-caused noise and nighttime lights. In terms of native biodiversity, the GYE is healthier in many respects today than it was 100 years ago—healthier in some respects than it was 10 years ago. Yet the GYE and its natural assets are facing substantial threats from the combination of New West population growth/exurban sprawl and Old West ideology based in resource extraction and “anything goes” attitudes toward property rights and individual freedoms. With increasing human population and cultural diversity in the GYE and throughout the West, it is important to recognize that individual freedoms of one stakeholder often conflict with the individual freedoms of other stakeholders. For example, the freedom for one person to

operate a motorized off-road vehicle in a given place and time may conflict with the equally valued freedom of another person to access and enjoy the same place and time without engine noise and exhaust. To share and conserve the natural assets of the GYE, it is critical that we explicitly acknowledge the legitimacy of varied and sometimes incompatible personal freedoms in an ever-shrinking space. Only by identifying and legitimizing such conflicts can we begin to identify opportunities to resolve them in a manner consistent with sustainable use of the limited resources. The natural assets of the GYE carry significant value for members of both Old West and New West cultures, but these assets are not unlimited. They and the systems that created and support them must be understood, conserved, and nurtured if they are to provide the same value to future generations. Residents of local communities stand to benefit the most from the natural assets of the GYE and should bear the greatest responsibility for its stewardship.

As unlikely as it sometimes seems in the heat of lightning-rod controversies such as gray wolf restoration and management, the best chance for a future GYE as beautiful and diverse in wilderness, rangelands, wildlife, and recreational opportunities as it is today depends on forces from the Old West and New West working together toward a common vision of sustainable use of natural assets in the Next West. Creating and implementing that vision requires people of passion and commitment working from a common base of sound information. Let the vocal pretenders and the dogma fall by the wayside. To work together, we will have to sift through our traditional allegiances and prejudices, set aside our team colors and distrust for one another, and deal with the real and considerable challenges before us. To be effective, we should remember the five elements of successful cross-boundary conflict resolution articulated by Glick and Clark (1998) (*see sidebar*). Gateway communities in the GYE have an opportunity to lead the way,

#### **Five Elements of Successful Cross-Boundary Conflict Resolution (Glick and Clark 1988)**

1. The collection and dissemination of good data before undertaking major management actions;
2. The creation of forums or mechanisms for civic dialog where information can be discussed and used in a constructive manner;
3. The decision to give stakeholders a voice on resource management issues and an opportunity to play a greater role in management decisions;
4. Identification of a set of shared management goals;
5. Continual evaluation and modification to reflect changing conditions.

encouraging cross-boundary stewardship by teaming with federal and state agencies, commodities producers, private landowners, and other stakeholders in constructive, proactive partnerships that proceed with sound information, well-defined goals and objectives, and flexibility to deal with changing circumstances. In this way, we will create the future, rather than grudgingly allow it to happen to us. It is a test of our collective wisdom and good intentions, with the future of the Greater Yellowstone Ecosystem—one of the last charmed geese on our planet—in our hands.

YS



COURTESY OF AUTHOR

Dr. Charles R. Preston is Chief Curator of the five museums of the Buffalo Bill Historical Center and the Founding Curator-in-Charge of the Draper Museum of Natural History. The innovative 55,000 square-foot Draper Museum opened in 2002, as part of the Buffalo Bill Historical Center complex, in Cody, Wyoming. The Draper has become a model for a new genre of immersive natural science museums focused on the integration of humans and nature near globally important conservation areas, such as Yellowstone National Park. Prior to his current appointment, Preston was Chairman of the Department of Zoology at the Denver Museum of Natural History, and before that Associate Professor of Biological Sciences and Wildlife Management at the University of Arkansas at Little Rock. He has authored three books and more than 60 technical and popular book chapters and articles. His most recent book, *Golden Eagle: Sovereign of the Skies*, with photographer Gary Leppart, was released in May 2004.

## Literature Cited

- Alternative Energy Resource Organization. 1996. *Big sky or big sprawl: what transportation and land use decisions cost Montana*. Helena, Mont.: AERO Smart Growth and Transportation Project.
- Berger, J. 1991. Greater Yellowstone's native ungulates: myths and realities. *Conservation Biology* 5:353–363.
- Clark, T. W., and D. Zaunbrecher. 1987. The Greater Yellowstone Ecosystem: the ecosystem concept in natural resource policy and management. *Renewable Resources Journal* 5:8–16.
- Coyne, W. 2003. *The fiscal cost of sprawl: How sprawl contributes to local governments' budget woes*. Denver, Colo.: Environment Colorado Research and Policy Center.
- Craighead, F. C., Jr. 1979. *Track of the grizzly*. San Francisco, Calif.: Sierra Club Books.
- Craighead, J. J. 1977. *A delineation of critical grizzly bear habitat in the Yellowstone region*. Missoula, Mont.: Montana Cooperative Wildlife Research Unit, University of Montana.
- Craighead, J. J. 1980. A proposed delineation of critical grizzly bear habitat in the Yellowstone region. *International Conference on Bear Research and Management* 4:379–399.
- Craighead, J. J. 1991. Yellowstone in transition. Pages 27–240 in R. B. Keiter and M. S. Boyce, eds., *The Greater Yellowstone Ecosystem: redefining America's wilderness heritage*. New Haven, Conn.: Yale University Press.
- Craighead, J.J., J.S. Sumner, and J.A. Mitchell. 1995. *The grizzly bears of Yellowstone: their ecology in the Yellowstone Ecosystem, 1959–1992*. Washington, D.C.: Island Press.
- Glick, D., M. Carr, and B. Harting, eds. 1991. *An environmental profile of the Greater Yellowstone Ecosystem*. Bozeman, Mont.: Greater Yellowstone Coalition.
- Glick, D., and T.W. Clark. 1998. Overcoming boundaries: the Greater Yellowstone Ecosystem. Pages 237–256 in R.L. Knight and P.B. Landres, eds., *Stewardship across boundaries*. Washington, D.C.: Island Press.
- Haines, A.L. 1996. *The Yellowstone story: a history of our first national park*. Vol. 1, Revised edition. Yellowstone National Park, Wyo., and Niwot, Colo.: The Yellowstone Association for Natural Science, History and Education, Inc., and University of Colorado Press.
- Hansen, A.J., R. Rasker, B. Maxwell, J.J. Rotella, J.D. Johnson, A.W. Parmenter, U. Langner, W.B. Cohen, R.L. Lawrence, and M.P.V. Kraska. 2002. Ecological causes and consequences of demographic change in the New West. *Bioscience* 52:151–162.
- Harting, B., and D. Glick. 1994. *Sustaining Greater Yellowstone, a blueprint for the future*. Bozeman, Mont.: Greater Yellowstone Coalition.
- Hennelly, R. 1992. Getting wise to the wise use guys. *The Amicas Journal* 14:35–38.
- Johnson, J.D., and R. Rasker. 1995. The role of economic and quality of life values in rural business location. *Journal of Rural Studies* 11:405–416.
- Lichtman, P., and T.W. Clark. 1994. Rethinking the “vision” exercise in the Greater Yellowstone Ecosystem. *Society and Natural Resources* 7:459–478.
- Patten, D.T. 1991. Defining the Greater Yellowstone Ecosystem. Pages 19–26 in R.B. Keiter and M.S. Boyce, eds., *The Greater Yellowstone Ecosystem: redefining America's wilderness heritage*. New Haven, Conn.: Yale University Press.
- Power, T. 1991. Ecosystem preservation and the economy in the Greater Yellowstone Ecosystem. *Conservation Biology* 5:395–404.
- Power, T. 1998. *Lost landscapes and failed economies: the search for a value of place*. Washington, D.C.: Island Press.
- Preston, C.R. 1999. Exploring a new frontier: the role of natural history museums in the 21<sup>st</sup> century. *Points West* (Summer): 7–9.
- Preston, C.R. 2004. Islands of hope in a raging sea. Pages 244–252 in A. Wondrak Biel, ed., *Beyond the arch: community and conservation in Greater Yellowstone and East Africa*. Proceedings of the 7<sup>th</sup> biennial conference on science in the Greater Yellowstone Ecosystem, October 6–8, 2003, Mammoth Hot Springs, Wyoming. Yellowstone National Park, Wyo.: Yellowstone Center for Resources.
- Preston, C.R., J. Jones, and R. Pickering. 2002. Assessing and integrating diverse front-end perspectives in the first natural history museum created in the 21<sup>st</sup> century. *The Informal Learning Review* 57 (November–December):1–8.
- Randi Korn and Associates, Inc. 2003. *The Draper Museum of Natural History, Buffalo Bill Historical Center Greater Yellowstone Adventure: Summative Evaluation*. Alexandria, Va.: Randi Korn and Associates, Inc.
- Rasker, R., B. Alexander, J. van den Noort, and R. Carter. 2004. Prosperity in the 21<sup>st</sup> century West: the role of protected public lands. Bozeman, Mont.: Sonoran Institute.
- Rasker, R., and D. Glick. 1994. The footloose entrepreneurs: pioneers of the New West? *Illiahee* 10:34–43.
- Rasker, R., and A.J. Hansen. 2000. Natural amenities and population growth in the Greater Yellowstone region. *Human Ecology Review* 7:30–40.
- Reading, R.P., T.W. Clark, and S.R. Kellert. 1994. Attitudes and knowledge of people living in the Greater Yellowstone Ecosystem. *Society and Natural Resources* 7:349–365.
- Riebsame, W.E., H. Gosnell, and D. Theobald, eds. 1997. *Atlas of the New West*. New York: W. W. Norton.
- Wilkinson, C.F. 1993. *Crossing the next meridian: land, water, and the future of the West*. Washington, D.C.: Island Press.
- Wilson, M.A. 1997. The wolf in Yellowstone: Science, symbol, or politics? Deconstructing the conflict between environmentalism and wise use. *Society and Natural Resources* 10:453–467.