

**OUTDOOR
RECREATION
IN THE
GREATER
YELLOWSTONE
AREA:**

AN INTERAGENCY REPORT



2006

RECREATION IN THE GREATER YELLOWSTONE AREA

AN INTERAGENCY REPORT

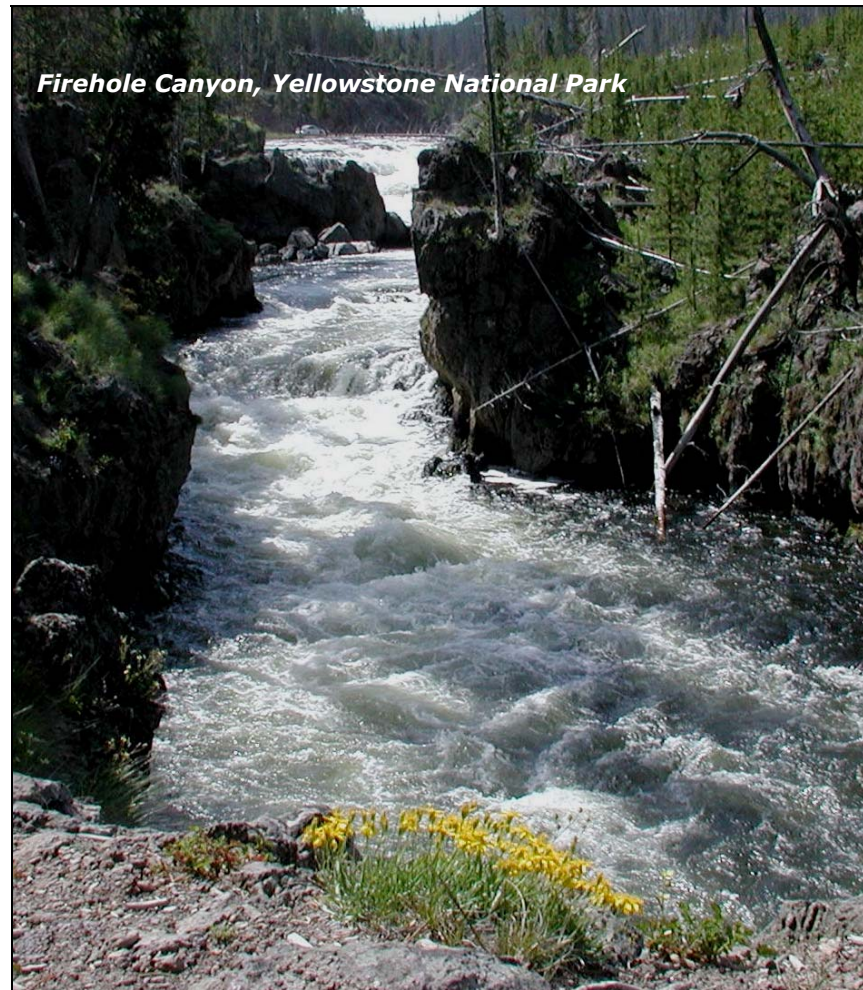
GREATER YELLOWSTONE COORDINATING COMMITTEE

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2006





MAN IS HERE, BUT HE HAS NOT YET LAID A HEAVY HAND ON HIS
SURROUNDINGS.

—Margaret Murie



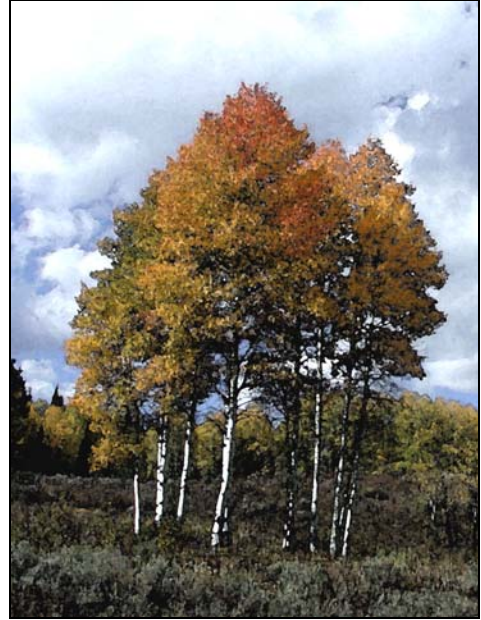
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RECREATION IN THE GREATER YELLOWSTONE AREA

A land of geysers and glaciers, of backcountry and popular vacation destinations, home to the world's first national park and one of the last refuges for large populations of North American wildlife, the Greater Yellowstone Area exemplifies the complexity and contradictions of outdoor recreation and wildland preservation in America.

The inherent difficulties in protecting the region's natural qualities while realizing its opportunities for recreation will only intensify as more people move into the region and seek outdoor experiences on the public lands. Given the rate of population increase in the fastest-growing counties of the GYA a 10-15% annual increase in recreation use is possible (U.S. Census Bureau 2004). Beyond their increasing numbers, people are bringing new forms of recreation with greater technological sophistication, intensity of use, and potential for impacts on natural resources. Accelerating development of private land in the GYA is transforming the region and creating pressure on public land for recreation and other uses. Environmental influences beyond the GYA (climate change; airborne pollutants) are currently or anticipated to have an effect on the area as well.

While demand for recreation increases, the federally-owned land base remains fairly stagnant. Certain places can absorb more use, but not without agency understanding of changing recreation trends and recreation's potential impacts on the supply of federal land and resources. **RECREATION IN THE GREATER YELLOWSTONE AREA** attempts to provide that understanding. This document examines the present state and future of outdoor recreation in the GYA within ten federal land units (Figure 1).

RECREATION IN THE GREATER YELLOWSTONE AREA

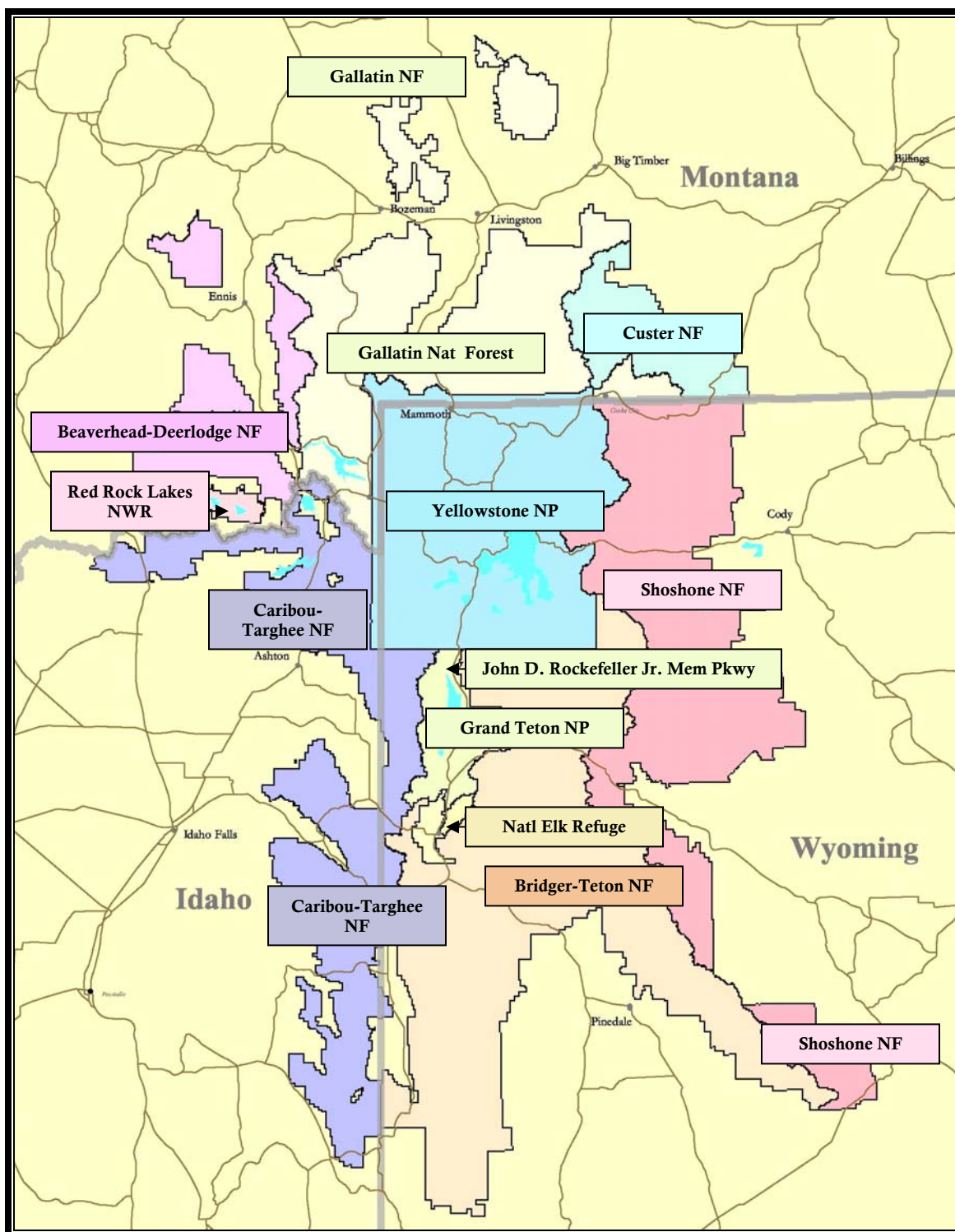


Figure 1. Distribution of the national forests, parks and wildlife refuges in the GYA.

RECREATION IN THE GREATER YELLOWSTONE AREA

Prepared at the request of the Greater Yellowstone Coordinating Committee, this report is a compilation of current information (as of 2006) about the state of spring, summer and fall recreation in the GYA. By examining the demand for recreation and the supply of available resources to meet that demand, it projects expected future recreation trends onto the Greater Yellowstone landscape. The information provided in this document can assist in strategic planning, so that federal lands can accommodate increases in recreation use while continuing to offer those resources that make the GYA a singular and special place. It places each federal land unit in the larger GYA context to provide recreation data pertinent to management decisions and their regional implications. It provides a basis for the federal agencies to:

- ▶ Respond to an increasing population and demand for outdoor recreation in the GYA by identifying those areas that can accommodate more use, and places that cannot.
- ▶ Articulate recreation settings in a way that recognizes the sense of place that defines the GYA as well as each land unit's capability and unique attributes.
- ▶ Understand resource trade-offs so that areas at risk or irreplaceable settings can be managed with an awareness of what makes them special.

The recreation-related information presented in this report is useful at the local project-level scale, for landscape and watershed analysis, and for unit-wide efforts such as transportation planning, general management plans and forest plans. Although this report is not an interdisciplinary effort, it provides recreation information useful in assessments that integrate multiple resource data. For example, it has already been used in the preparation of the GYA Grizzly Bear Conservation Strategy. At any scale it can be used to compare one unit with another, because of the coordination and consistency of data that was gathered. It represents a snapshot in time of recreation in the GYA, providing a comprehensive view for managers.

METHODS

Representatives of ten federal land units in the GYA worked together to describe the recreation resources within each forest, park, and wildlife refuge in terms of outdoor recreation settings and the facilities and visitor services available. The team examined the attributes of the GYA federal land base in terms of its capacity to provide outdoor recreation; the role of non-federal lands and outdoor recreation providers in the private sector; national, regional, and local trends in demographics; and trends in recreation participation as reported in visitor surveys, and other use monitoring data, as well as published scientific research.

The team then described and mapped the recreation settings in the GYA, using the USDA Forest Service national protocol for the Recreation Opportunity Spectrum (ROS). This exercise resulted in a GYA-wide map of existing conditions as shown by the amount and distribution of the various ROS classes from the most primitive to the most highly developed (Figure 2). This tool was then used to provide a picture of recreation settings across the region.

RECREATION IN THE GREATER YELLOWSTONE AREA

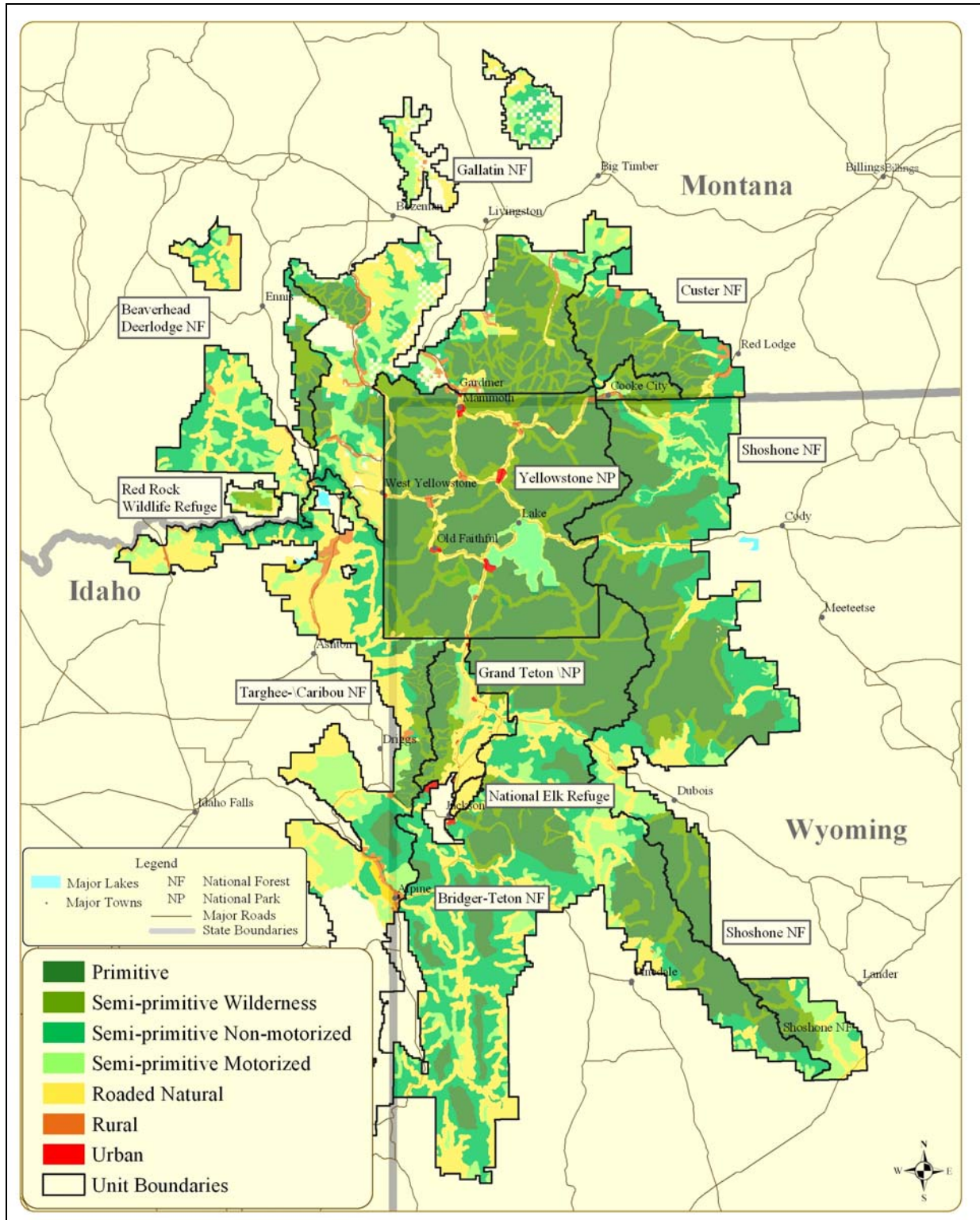


Figure 2. Recreation settings within the GYA (a larger scale map is provided with this document.)

RECREATION IN THE GREATER YELLOWSTONE AREA

Next, the team reviewed the relationship between recreation supply and demand to produce a Recreation Condition Analysis map showing (1) areas where the existing level of recreation use is compatible with resource protection in what can be considered a state of equilibrium (the great majority of acres within the GYA); (2) areas where additional recreation use could occur without unacceptable deterioration of resource conditions; (3) areas where the setting is at risk for undesired change as a result of recreation; (4) areas where the threshold for acceptable change in the recreation setting or other resource conditions is already being exceeded. The ROS and recreation condition maps were field-checked by staff on each federal land unit familiar with the areas and resources in question. After review of the information gathered, the team then compiled findings of particular interest to management, as well as a series of case studies that give examples of how specific problems can be solved.

This document is not an interdisciplinary analysis, as no other natural or cultural resource interests were equally incorporated into this report. This report is a single snap shot in time of recreation uses, settings, and anticipated trends related to the GYA.

RECREATION MANAGEMENT PRINCIPLES

Growing and diverse public demands, non-traditional recreation activities, increasing total recreation use and population growth in the counties surrounding Yellowstone, require active and adaptive recreation management.

Management decisions regarding recreation are similar to those dealing with physical or biological resources; they are informed by science and objective fact. Within this framework there is also a need for professional judgment and personal knowledge, values and experience. As researcher David Cole pointed out, “Science usually cannot provide good answers to the most important value-based questions” (Cole, 2004). The following principles of recreation management apply to the information presented and findings in this document.

1. Managing recreation use requires thorough consideration of desired conditions. Without it there is no way to know whether there is a gap between existing and desired conditions and what management actions are needed.
2. Managing recreation use requires professional skills and the best scientific information we can obtain.
3. Change is inevitable. Management intervention will be a likely necessity to retain desired recreation settings.
4. Dilution is not the solution. It does not serve the public or recognize the inherent diversity of landscapes if agencies seek to offer the same experience and level of use everywhere.
5. Diversity is desirable. In order to meet the needs of the largest number of people, it is best to provide a range of settings consistent with each area’s desired condition, keeping in mind the area’s resource capability and legal or policy mandates.

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6. Be proactive. It is most effective to manage recreation proactively before problems arise and opportunities are foreclosed. Once recreation use becomes established it is difficult and costly to change the use.
7. Know an area's capabilities and limitations. In order to continue providing a wide range of recreation settings, it is necessary to appropriately manage the most vulnerable areas while wisely using the more durable areas.
8. Think regionally, act locally. Recreation is best managed with a regional context in mind. Addressing problems in one location requires the understanding of potential effects elsewhere.

This report utilizes the terminology of economics and discusses the recreation resource in terms of supply and demand. Supply is the quantity of recreation facilities or land areas available for

We cannot say that if fish and game resources become exhausted fishermen and hunters will be satisfied with hiking, or that if we cut up all our large wilderness areas those who in the past enjoyed wilderness travel will enjoy automobiling just as well. For large numbers of people such losses would represent an irreparable destruction of the richest aspects of life. A rational program for forest recreation in America must assure to the adherents of each of the different types of enjoyment an ample opportunity to indulge their desires.

...Robert Marshall, 1933

use by the visitor. The Recreation Opportunity Spectrum (ROS) is used to describe the settings offered, which range from primitive to urban. The recreation setting supply is measured in acres within each ROS class. Demand for recreation is less easily determined than supply. It varies according to factors associated with the people who recreate and is a complex interaction among various factors. Supply and demand are interrelated; characteristics of the recreation supply are among the factors that influence demand.

Although recreation management terminology may be unfamiliar to some, the concepts are nothing new, as the excerpt at left from Bob Marshall's report to Congress in 1933 shows. He recognized the need to provide a variety of settings for the differing desires of recreationists, and that substitution is not a viable option for some. If anything has changed in the eighty-odd years since he wrote his report, it is the level of pressure placed on the federally managed lands by an expanding population and changing technology.

The Recreation Opportunity Spectrum recognizes that visitors have individual desires, many of which can be met if agencies manage for a range of ways to experience the federal wildlands. ROS and its equivalent systems allow managers to focus on the diversity of settings offered with an eye toward retaining or enhancing a desired mix that fits each federal land area's basic capability. By applying ROS across a region the size of Greater Yellowstone, it is possible to place in sharp focus those areas that offer unique and irreplaceable opportunities as well as compare and contrast the various land units in the GYA.

RECREATION GOALS AND CHALLENGES

The overall recreation goals for federal lands in the GYA can be stated in three interrelated parts:

1. To protect biophysical, geologic, and historic resources – the attractors, destinations and settings for outdoor recreation;
2. To provide a range of high-quality outdoor recreation opportunities consistent with resource protection and the purposes of each federal land unit in the GYA;
3. To contribute to public welfare and benefits through outdoor recreation opportunities – for the vitality and well-being of regional communities as well as citizens at large.

The challenge in meeting these goals has two primary aspects or challenge topics that are summarized below (the technical report includes more detail):

1. Identifying and addressing the effects on the recreation experience from other influences—often the unintended consequences of apparently unrelated actions.
2. Identifying and addressing the effects of unmanaged recreation on the recreation setting and on other public land resources.



Changing uses.

CHALLENGE TOPIC 1: EFFECTS ON RECREATION OPPORTUNITIES AND VISITOR EXPERIENCE THAT DERIVE FROM OTHER INFLUENCES. The natural setting is the primary reason that many people come to the GYA to recreate or start a business and raise their families. If the attractors that bring people to recreate in the GYA – wildlife habitat, fisheries, productive soil and healthy watersheds, clean air and water, open space, and the opportunity to experience natural sounds and quiet – are not preserved, the region’s resources will be diminished and it will lose the draw that has been the economic driver for many GYA communities. Therefore, what happens to wildlife, fish, soil, water and other basic resources also matters to recreation—and not always in ways that are obvious. The upper Snake River serves as an example to illustrate recreation’s dependence on other resources.

One of the primary attractors of the Snake River system in the GYA is its trout fishery (Loomis 2005). Undesirable effects on recreation result from the introduction of exotic species such as zebra mussels, invasive forms of aquatic vegetation, non-native fish species that consume native trout eggs, fry, or the aquatic insects on which they depend, and diseases. Any of these factors can seriously harm the native trout fishery, as recent experiences with whirling disease and introduced lake trout have shown.

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Sedimentation and pollution can reduce spawning success and fish populations and create more turbidity in the river, thus reducing the enjoyment of those who appreciate the region's famously clean water. A reduced trout population will have repercussions throughout the riparian system and beyond, as wildlife dependent on fish are affected. Part of the floating and fishing experience the Snake River is the chance to see wildlife such as bald eagles and ospreys. A robust population of native trout in a river system known for its wild beauty is what allows the Snake River outfitter-guide industry to thrive. Reduction in the trout or any of the attributes that make this river what it is could have an undesirable economic effect as well.

CHALLENGE TOPIC 2: EFFECTS OF UNMANAGED RECREATION. Unmanaged recreation can have negative effects on the landscape and reduce agencies' ability to meet the goal of protecting biophysical, geologic, and heritage resources. A few examples follow.



Damage to soil and watersheds. Pioneered trails on steep slopes result in scarring, soil erosion and vegetation loss. This is not limited to areas used by wheeled vehicles; high elevation foot and horse traffic can also damage lakeshores and alpine tundra. Campsite inventories completed in many parts of the GYA indicate that dispersed campsites have a significant effect on riparian areas, reducing native streamside vegetation, which facilitates encroachment of non-native plants or compacted, exposed soil.

An increased in exotic species. Visitors unintentionally disperse weed seeds that fall from vehicles and aquatic plants and animals that attach to the hulls of boats. Visitor education and installation of washing stations have been shown to help reduce this effect.

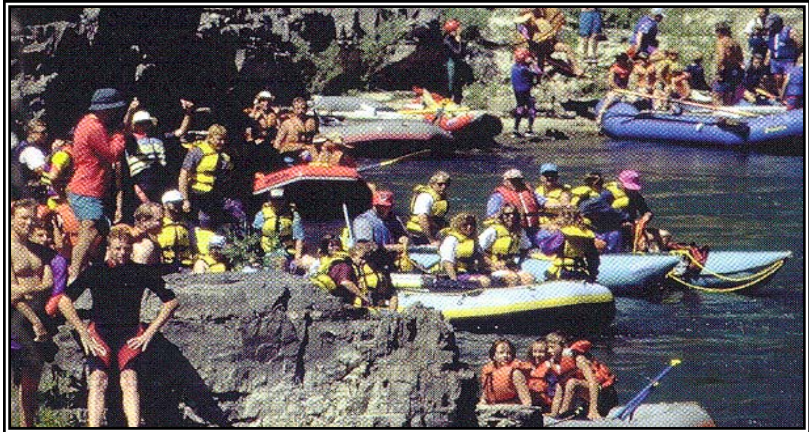
Wildlife disturbance and habitat alteration. Numerous studies confirm that kayakers and whitewater rafters displace bald eagles, harlequin ducks, and other birds (Boyle and Samson 1985; Grubb, Robinson, and Bowerman 2002; R.L. Knight et al 1984; Stalmaster and Kaiser 1998; Steidl and Anthony 1996; Wood 1999; Ydenberg 2000; and York 1994); that grizzly bears avoid backcountry travelers (Mattson and Henry 1987; Reinhart and Mattson 1990; Green and Mattson 1988; Craighead et al. 1995; and Gunther 1990); and that elk run away from off-highway vehicles and mountain bikes (Wisdom et al, 2004).

Crowding and competition for space. Unmanaged recreation can lead to competition among recreationists, with a corresponding change in the experience. For example, although a hike up Cascade Canyon in Grand Teton National Park exposes a visitor to awesome scenery, one must pass hundreds of other hikers most summer days. In the Snake River Canyon near Alpine, boaters frequently wait in line at boat launches, rapids, and take-outs. The inability to linger at a

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scenic vista, to find an unoccupied campsite or parking space, to have to wait in line to launch a boat can reduce the enjoyment of the recreation experience.

Conflicts between users. Heavy recreation use results in increasing conflicts between different types of users. Hikers, horseback riders, mountain bicyclists, and motorcyclists often use the same trails in the national forests, resulting in displacement or reduction in visitor enjoyment. Anglers, jet boaters, rafters, and kayakers may use the same stretch of river, with similar results (Jacob and Schreyer 1980; Moore 1994).



*Snake River Canyon,
Bridger-Teton National Forest*

THE LAND CONSIDERED IN THIS REPORT

Beartooth Ranger District, Custer National Forest
Bridger-Teton National Forest
Gallatin National Forest
Grand Teton National Park
John D. Rockefeller, Jr. Memorial Parkway
Madison Ranger District, Beaverhead-Deerlodge National Forest
National Elk Refuge
Red Rock Lakes National Wildlife Refuge
Shoshone National Forest
Targhee division, Caribou-Targhee National Forest
Yellowstone National Park

A strong connection between federal and other land exists in the Greater Yellowstone Area. Private land contributes essential habitat for fish and wildlife; without it, the diversity of species in the GYA would be diminished. Ranchlands and river corridors in particular provide the wildlife migration routes, habitats and open space needed to retain much of the ecological integrity, working landscapes, and livable communities of the region (D. Glick, pers. comm.). Private land, state and county parks, and lands held by the BLM contribute to the overall recreation supply, often in ways that complement what is offered by the national parks, refuges, and forests. Though not part of this recreation summary, their contribution and facilities they provide are noted in many parts of the technical report.

THE GYA: UNIQUE NATIONAL TREASURE

The Greater Yellowstone region is often referred to as one of the last intact functioning temperate ecosystems on earth (U.S. House of Representatives 1985; Keiter and Boyce 1991; Schullery 1997). Two primary measures of this distinction are (1) the nine million acres of wildlands that support natural ecological processes and (2) a range of native fish and wildlife, including those that serve as keystone species for healthy, functioning ecosystems. The combination of large backcountry and public access (including community airports, the federal land road network and facilities/services to support recreation) provides an unmatched recreation opportunity. The GYA is a region of historic, ecological, and geological importance, and a region with an internationally recognized conservation heritage.

Upper Geyser Basin, Yellowstone National Park



Common to nearly all federally managed land units included in this report are attributes that can be considered central to the Greater Yellowstone region. Yet, each forest, park and refuge offers something unique—what this document calls the unit’s particular “niche.” The word *niche* in this context describes the distinctive attributes of each unit and how it fits into the greater whole, making a contribution to the GYA. Implicit in the niche concept is significance, as well as land capability, management direction, and recognition of what the public values most in each land unit. Niche statements for the units that appear in the technical report display what each land unit is most uniquely capable of providing.

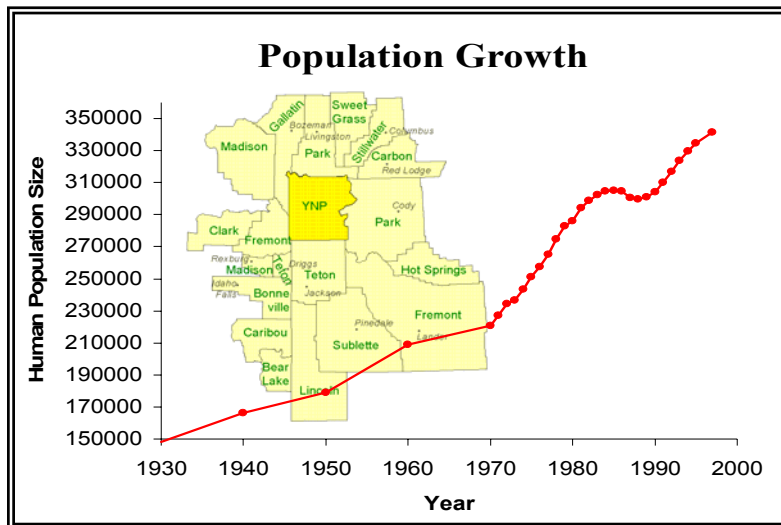


Figure 3. Population growth in the GYA, 1930-2000 (U.S. Census data).

NATURAL AMENITIES FUEL POPULATION GROWTH

The GYA’s economy is partly fueled by people choosing to move into the region. The GYA population grew by over sixty percent between 1970 and 2000 (Figure 3). The counties that have grown the most have economic diversification and a connection with metropolitan centers (Rasker and Alexander 2003).

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Environmental quality, access to outdoor recreation, scenery, wildlife, and open space consistently rank among the top reasons that people move to the Greater Yellowstone region (Rasker, et al 2004, Rasker and Alexander 2003, Rasker and Hansen 2000, The Montana Challenge 2004, USDA 2004, Littlejohn 1998, Smaldone 2001, Schechter 2002). Other important factors driving population growth include the presence of an educated workforce, the presence of community airports, low crime rates, and cultural amenities such as arts, entertainment, and dining (Rasker et al 2004, Rasker and Alexander 2003, State of the Rockies Report 2004).

LIFESTYLES DRIVE ECONOMIC GROWTH

In addition to high levels of tourism in the region, people moving to the GYA are largely responsible for the growth in small businesses and job creation, and therefore contribute much to the region's economy. Contrary to what has been the case in the past, the region's economy is driven more by the attractiveness of communities as places to live and do business than by tourist dollars (Schechter 2002; Schechter 2006). Because of the importance of these economic forces, analysis based on recreational expenditures does not capture the entire economic impact of providing recreational opportunities and other amenities on public lands.

Skyrocketing population growth was identified as the single biggest challenge facing the west. In the last 30 years, the Rocky Mountain region has seen a 119% growth rate, compared to the national rate of 39%.

.....State of the Rockies
Conference 2004

Investing in environmental quality and the amenity values that make communities desirable is an investment in sustained economic prosperity (Swanson 2004). There are signals that communities recognize the connection between their economic future and the amenity values associated with public lands abound (Figure 4): Montana has focused its marketing on the state's abundant fish and wildlife populations (The Montana Challenge 2004). Ashton, Idaho now defines itself as the "Gateway to Adventure." Ennis, Montana has become a well-known destination for fly fishermen. Jackson, Wyoming is increasingly highlighting its wildlife.

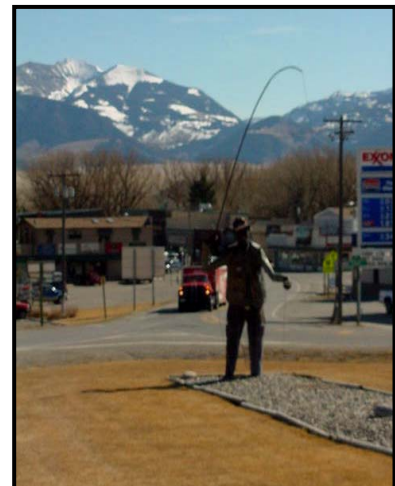


Figure 4. GYA towns adopting the outdoor recreation "brand" – Ashton, Idaho; Jackson, Wyoming; Ennis, Montana

FUTURE GROWTH WILL BE UNEVENLY DISTRIBUTED

Forecasting future population growth is dependent on many variables such as national economic conditions as well as growth management strategies established by individual counties. Social scientist P. C. Hernandez-Gude (2004) has created a “rural development simulator” for the GYA by modeling the growth that occurred in 1990s and using the model to develop predictions for four alternative scenarios: (1) slow growth, (2) status quo growth, (3) boom conditions, and (4) regulated growth. In all four scenarios, rural home growth for the year 2020 is significant, especially in areas already undergoing such development (Figure 9). With an increasing number of people moving to the region, the desire for recreation will increasingly affect public lands, both ecologically and socially.

A PROFILE OF GYA VISITORS

An estimated sixteen million visits occur annually in public land in the GYA (Figure 5). While winter activities are increasingly contributing to total recreation, over ninety percent of recreation use still occurs between April and December. Visitor studies done in the national parks in the 1990s (NPS 1990, Littlejohn 1998, Smaldone 2001) and in the national forests between 2001 and 2004 (NVUM supplemental surveys) help portray a profile of the people who recreate on public lands in the GYA (discussed in more detail in the Technical Report). Most visitors to the national forests live in the region or nearby states, whereas the national parks draw national and international visitors (6-10% of the visitors are foreign). Most national forest visitors make frequent return trips, whereas about half of the national park visitors are seeing the parks for the first time. The national wildlife refuges attract both local and national visitors.



Visitors at Old Faithful, wolf-watching in Grand Teton National Park, and a lone hiker resting beside a backcountry creek.



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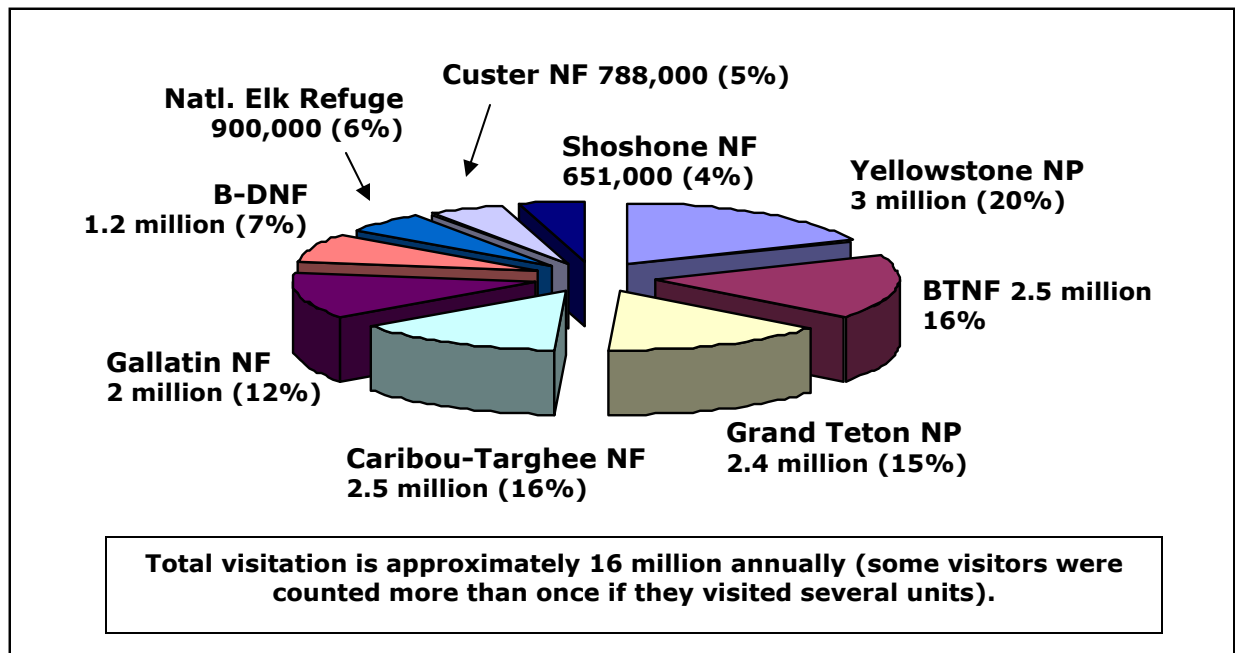


Figure 5. Estimated annual recreation use in the Greater Yellowstone Area (data from various visitor surveys between 2000-2004). Note: for those national forests only partly within the GYA, the use figures are for the entire forest. Red Rock Lakes NWR estimates between 10,000-15,000 visits per year, a figure too small to display on this chart.

WHAT RECREATIONISTS SEEK FROM PUBLIC LANDS

Outdoor recreation helps create balance in one's life by reducing stress and as a recuperative activity, helps to regain physical or mental health (Driver 1999). In response to recreation user surveys conducted during the past five years, the top activities people engage in while visiting the national parks and forests of the GYA show some interesting commonalities (Figure 6). According to national visitor use monitoring surveys the top five activities cited by people visiting the national forests within the GYA are:

1. Viewing natural features and scenery
2. Viewing wildlife
3. General relaxing
4. Hiking or walking
5. Driving for pleasure on roads

National Park visitors report similar top activities as shown below (Littlejohn 1998, NPS 1990):

1. Wildlife viewing
2. Sightseeing/pleasure driving
3. Photography
4. Hiking/walking
5. Visiting museums or visitor centers

RECREATION IN THE GREATER YELLOWSTONE AREA

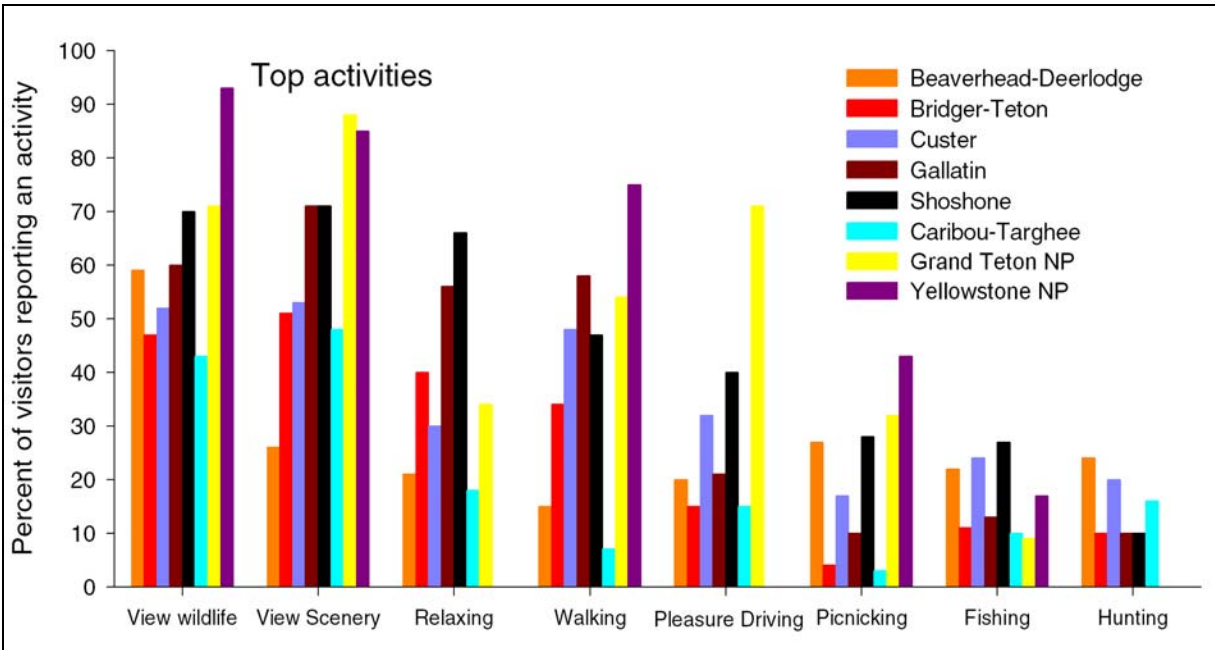


Figure 6. Top activities visitors participate in, GYA national parks and forests. (USDA Forest Service NVUM surveys 2001-2004; Littlejohn 1998; NPS 1990)

Recreation visitors choose certain activities in order to gain a desired experience. This question addresses the underlying reasons that people choose the activities and places they do. The two most important reasons people visit national forest in the GYA are (1) the condition of the natural environment and (2) scenery (NVUM surveys, 2001-2004). The 2 primary summer and fall recreation activities on the National Elk Refuge are wildlife viewing (53%) and visiting the information center (35%), where educational, informational and interpretive materials and opportunities are offered. At Red Rock Lakes National Wildlife Refuge, wildlife viewing and fall hunting are the primary reasons people visit the refuge (pers. comm. M. Parker, Refuge Manager). In Yellowstone National Park, the primary reasons for visiting are (Eisenberger and Loomis 2002):

- ▶ Viewing wildlife, geysers, and general sightseeing
- ▶ Shared experiences with family while on vacation
- ▶ Photography
- ▶ Peace/quiet
- ▶ Learning about nature

In Grand Teton National Park, the primary reasons for visiting are (Littlejohn 1998):

- ▶ Sightseeing
- ▶ Wildlife viewing
- ▶ To experience wildness and open space
- ▶ General recreation
- ▶ Solitude/quiet

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In 2002, a visitor survey to Grand Teton National Park showed some difference between non-local and local park visitors. Sightseeing was the most frequent non-local visitor activity, followed by bison viewing, hiking, and pleasure driving, and elk viewing (Loomis and Caughlan 2004). For local visitors, sightseeing and hiking were the most frequent activities, while viewing bison ranked fifth and viewing elk sixth (Loomis and Caughlan 2004).

Data displaying the facilities or special areas visitors used is available only for the national forests. This information underscores the importance of trails and forest roads to support recreation activities (Figure 7). This is seen particularly well in the Gallatin National Forest, where a very large percentage of people visiting the forest seek hiking, biking, and horseback riding on non-motorized trails. Campgrounds are highly sought in the places visitors stay longer. For example, in the Shoshone National Forest the average length of stay is twenty-seven hours and campgrounds are among the top facilities used—more so than with other national forests in the GYA.

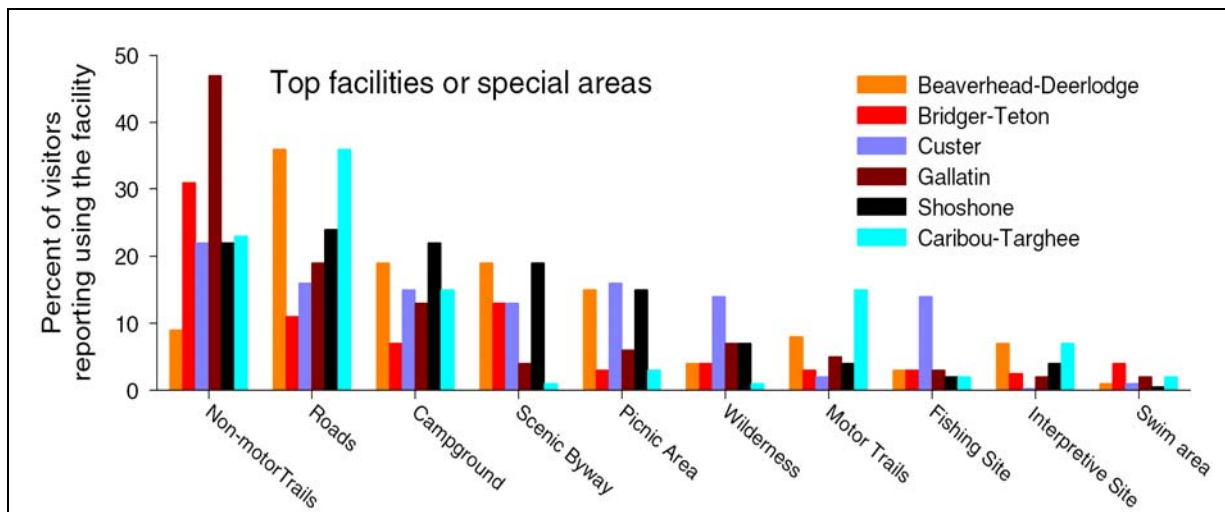


Figure 7. Top facilities or special areas visitors use on National Forests within the GYA (data includes Deerlodge and Caribou National Forests outside of the GYA). (USDA 2004.)

**RECREATION USE IS CHANGING IN RESPONSE TO POPULATION, TECHNOLOGY,
AND SOCIAL TRENDS**

Demographic changes anticipated in the coming years (Sheffield 2004) that may be of interest to providers of outdoor recreation in the GYA include the following items. (1) The U.S. population is expected to increase to 325 million in 2020 but it will not be evenly distributed; the Rocky Mountain West and the Southwest are growing faster than other regions. (2) The population is



aging. In 2000 the median age was 35; by 2020 the median age will increase to 38. This amounts to a doubling of seniors by 2020, largely driven by longer life expectancies compared with the early 1900s and the reduction in the average number of children per household. Resident populations are getting older and the Rocky Mountain and sunbelt states are attracting new retirees.

The population is becoming more ethnically diverse. In 2000, the composition of the U.S. population was 76% Anglo, 12% African American, 9% Hispanic, and 4% Asian. By 2020 the composition is expected to be 50% Anglo, 16% African American, 21% Hispanic, and 11% Asian.

Leisure time has become increasingly fragmented, largely due to families juggling the schedules of two working parents and multiple children's activities (Cordell et al 1999). As a result, the traditional family vacation is disappearing and being replaced with short, frequent excursions (Yesawich 2005). This trend can be seen in the leisure patterns of both visitors and residents, helping fuel the rapid increase in day use, particularly in areas that are easily accessible.

Outfitter-guides and concessions are a significant part of the picture when considering what visitors do in the GYA. Due to the region's history, its intact wildlands, and the diversity of recreation activities requiring specialized skills and equipment, the GYA has the largest outfitter-guide industry in the nation. Over nine hundred permits for concessions, lodges, and outfitters are issued by federal land agencies in the GYA; this does not include activities authorized by the BLM. One change in the outfitting industry (Brower 2003) is a reduction in demand for multi-day trips in favor of single-day, "do-it-all" packages that encompass a variety of activities.

As alluded to previously, rapid technological change is a major factor in the way people recreate in public lands (Cordell 2004, Sheffield 2004, Best 2004). Innovations in equipment have created completely new recreation activities and made it easier for more people to access remote areas. Digital and electronic technology has produced navigational and communication tools and created new sources of information. Improvements in outdoor equipment such as clothing and survival gear made from lightweight, waterproof materials have made it easier to be outdoors regardless of weather conditions.

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Evolving values influence recreation preferences. Trends particularly relevant to the future of recreation include a shift toward recreation and amenity values on the public lands (Driver 1999). The recent National Survey on Recreation and the Environment queried Americans on public land management objectives. Those identified as “important” to “very important” by at least 70% of the respondents were: conserving/protecting sources of water (91%), protecting ecosystems/habitats (86%), informing public on potential environmental impacts (81%), preserving resources (75%), and preserving wilderness experiences (74%) (Cordell 2004).

Cordell and others (1999) have built models to project future participation in a variety of recreation activities by region. For the eight-state Rocky Mountain region the activities expected to increase the most are wildlife viewing and photography, motor boating, sightseeing, visiting historic places and rafting/floating.

While similar projections have not been made specifically for the GYA, a few general trends can be stated. Visitation to Yellowstone and Grand Teton National Parks has remained stable in the last ten years. Since national park visitors originate from throughout the country and internationally, we can expect visitation to grow slowly over time in response to overall U.S. population growth, given current economic conditions and demographic trends. The national forests, which receive visitation primarily from local areas, are more likely to see increases in recreation use that parallel the rapid population increase in the GYA, particularly in fast growing counties.

Table 1 on the following two pages summarizes what is known about current trends in specific recreation activities taking place in the eight-state Rocky Mountain region and what visitors are seeking for recreation settings. Although not true for every acre within the GYA, the table represents what is reasonably foreseeable in some of the fastest-growing activities. The projected number of use days for the year 2030 is based on a coefficient used by Cordell et al (1999).



Tri-Basin Divide, Bridger-Teton National Forest

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Table 1. Selected recreation activities with projected volume of use, trends, and land preferences (based on 2000 data for the entire eight-state Rocky Mountain region, after Cordell, 2004). The 2030 projection is based on an index used by Cordell et al 1999.

Activity	2000 use days	Projected 2030 use days	Observations and trends within specific activity	Land and settings sought for each activity
Walking	1142 million	1423 million	Interest in restoring physical and mental health is stimulating growth in walking. There is increasing demand for short walks close to towns (five miles or less), while at the same time greater penetration of the backcountry by distance day hikers and trail runners, the latter is noticed in Grand Teton National Park in particular.	Loop trails are preferred. Easy trails including paved pathways will be needed to accommodate growth in active older people. There is a need for a range of challenge levels on unpaved trails. Woods, water, views, quiet, and relatively non-congested trails are desirable attributes. Public land near towns, pathway systems and parks operated by counties and towns can help serve this interest near town.
Hiking	91 million	112 million		
Wildlife viewing	631 million	973 million	A growing interest in wildlife viewing and learning through interpretative opportunities (both public and private). "Viewing" encompasses hearing coyotes or elk or sharing a trail with the tracks of a bear or wolf.	For the land to offer wildlife viewing opportunities, wildlife must be present, and thus, habitat needed to sustain wildlife must be protected. A range of opportunities is desired from easily accessible roadside viewing to remote settings. Federal wildlands offer a variety of places and ways to view wildlife, though wildlife is often seen from main highways on private lands.
Biking	188 million	233 million	Biking encompasses four specialties: road biking, mountain biking, downhill biking, and free-riding. Mountain biking use is stable while the other forms are growing rapidly. Family-oriented easy trails are sought by some non-local visitors, whereas the local and regional users of the national forests are seeking challenge.	Road biking requires pavement; there is increasing interest in separated pathways along highways that allow connections between communities and public lands. Mountain bikers prefer single-track dirt trails 10-30 miles in length. Downhill biking generally occurs in areas popular for skiing – ski areas and dispersed areas where highways traverse a pass. Free-riding requires constructed features and is usually found at ski areas or in power line corridors. The private sector can play a role in providing for free-riding.
Fishing	80 million	106 million	Catch and release fishing with flies is becoming the norm in many places.	Major rivers are desirable for fishing as are tributary streams and backcountry lakes. "Lively" fish that are fun to catch are preferred. There is growing interest in wild trout over hatchery fish. A range of opportunities are desired from easily accessible roadside fishing to remote backcountry fishing. State fishing access points play a major role in providing access.
OHV use	60 million	74 million	OHV use encompasses three specialties: off-road four-wheeling, ATV use, and motorcycling, including motocross and trials. ATV and motorcycle riding is increasing faster than off-road 4WD truck or jeep use. Some winter trails are evolving into summer OHV trails.	OHV use is often associated with the hunting season for camp access and game retrieval. Recreational riders prefer loop trails and ridges. A variety of levels are desired with rocky terrain offering a preferred challenge. ATV riders often use old roads and seek 20-80 mile trails for day rides, whereas motorcycles prefer single-track trails and can ride 100 miles or more each day.

RECREATION IN THE GREATER YELLOWSTONE AREA

Activity	2000 use days	Projected 2030 use days	Observations and trends within specific activity	Land and settings sought for each activity
Horseback riding	48 million	59 million	Day rides are on the increase while the number of multi-day pack trips is more stable. Endurance riding is also a specialty within this activity.	Relatively rock-free dirt trails are preferred. Water crossings and non-congested trails are desirable. Trails offering shade are desirable in summer. Camp locations need to have adequate forage and containment areas. Trails of 10-15 miles are generally adequate for most day riders.
Developed camping	41 million	53 million	Trend towards larger campgrounds and larger sites to accommodate RVs. Growing demand for group sites, higher development level, and such amenities as flush toilets. Health and safety standards are tightening.	Campgrounds close to town or along major highways are preferred. Proximity to water is desirable. Campgrounds that provide good vegetative screening between sites to increase privacy are also desired.
Dispersed camping	35 million	42 million	Increase in use of self-contained RVs.	Sites close to town or near major recreational attractions as well as distant locations where people can experience a remote setting.
Hunting	34.5 million	40 million	Specialization has occurred with bow-hunters, muzzleloaders, and rifle hunters. Hunting declined 21% overall in Idaho, Montana, and Wyoming between 1991 and 2001. Increasing emphasis on hunt quality and specialty hunts.	Non-outfitted hunters are increasingly opting for roadside camps that serve as a base for day trips over packing into the backcountry.
Climbing	8 million	9 million	Climbing includes a gradient from solving short "problems" on boulders, climbing multi-pitch crags or big walls, to mountaineering which may involve mixed rock and snow. Sport climbing is growing most rapidly, although classic mountain routes in the Teton, Wind River, and Beartooth Ranges continue to be popular.	Technical climbing depends on the presence of large boulders, steep rocky crags or big mountains. "Sound" rock is preferred. Mountaineers generally seek remote areas with attractive peaks to summit and often camp overnight. Big wall climbing opportunities are rare within the GYA. Most climbers interested in bouldering or crag climbing are day users who prefer accessible areas without long approaches. Some climbers are exploring new areas and routes.
Kayaking/rafting	7 million	8 million	Kayaks range from touring boats to play boats to inflatables. Play boats to surf waves and execute tricks, and inflatable kayaks, offer an exciting ride and many can be used without years of practice. As these small, sink-proof boats proliferate there is less dependence on outfitters and a wider range of streams on which the "rubber duckies" can be used.	Large lakes and slow moving rivers are generally preferred for touring kayaks. Whitewater rivers are preferred for down-river boats and essential for play boats. As the technology and skill level of boaters improves kayakers are exploring tributary streams for more exciting runs. Whitewater rivers are also preferred by rafters. Adequate water flows are essential to support this activity.

Table 1. Selected recreation activities with projected volume of use, trends, and land preferences (based on 2000 data for the entire eight-state Rocky Mountain region, after Cordell, 2004). The 2030 projection is based on an index used by Cordell et al 1999.

SUMMARY OF FINDINGS

People come to the GYA to enjoy a variety of recreational opportunities that are found throughout the region. One of the unique characteristics of the region is that it offers fairly easy access to some very wild and scenic landscapes. The combination of big backcountry and roaded access makes the GYA unique. Because the GYA contains this combination of large wild lands and roaded access, one of its major attractions also becomes one of its primary challenges. As the population increases and demands on federal lands to provide recreation increases along with it, access will need to be managed or the quality of the wild lands will erode.



Private and public lands in the GYA are inextricably linked. Both contribute to the sense of place that abounds in the GYA, as well as recreation settings, facilities and amenities that benefit the recreation visitor, scenic vistas, and wildlife/fish habitat. The contribution of all providers of outdoor recreation is significant. There is increasing interest by private interests and local governments in contributing to the total recreation offerings in the GYA in a way that is compatible and complimentary with federal land management objectives and missions.

The federal public lands of the GYA cannot meet all demands or absorb unlimited recreation use. The GYA considered as a whole offers a diverse pallet of recreation opportunities that can be used to help direct visitation and site modifications. Where rapid population growth is expected, managers have an opportunity to guide where additional recreation use will occur.

Visitation to the national parks can be expected to grow slowly given current economic conditions (such as the price of gasoline), and an increasing number of park visitors will come from the local area (Schechter 2006). The national forests are more likely to see significant increases in recreation use, particularly in the fastest-growing counties of the GYA. In these places, 10-15% annual increases in recreation use are possible.

In 1994, 10 major Western national parks [including Yellowstone and Grand Teton] hosted a combined 27.1 million recreational visits. In 2004, these same parks hosted a combined 25.6 million recreational visits.

In 1994, the 16 counties surrounding those 10 parks had a combined population of 1.7 million. In 2004, these counties had 2.1 million residents.

...Jonathan Schetcher, 2006

Recreation will increasingly affect public lands both ecologically and socially, especially near fast-growing communities. Easily accessible opportunities for day use will be in high demand in these areas. Semi-primitive front country near rapidly growing communities will require focused management in the near future to prevent unacceptable resource damage and visitor conflict.

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Managing for relatively high use in these areas can help reduce impacts to the less resilient, more remote areas that serve as refuges for wildlife.

Traditional recreation activities are competing with emerging uses, especially in front country settings near population centers. Some of these activities fit well with the GYA niche and others do not. As demographics change, people want facilities and experiences that the national forests and parks have not emphasized before.

There is an increase in the desire for quiet, contemplative outdoor recreation as well as for challenge or “adrenaline” sports, often in same places. These are not usually compatible with each other.

Both visitors and residents expect rules within parks and wildlife refuges, but there is some resistance to attempts by the national forests to deal with unmanaged recreation through increased restrictions on visitor use.

The national parks, refuges and forests play complementary roles. Traditionally the national parks have been most visible in the public eye, the crown jewels of our public lands. But they do not exist in a vacuum and cannot be sustained as islands.



In the national forests, off-highway vehicle use is growing, but overall numbers are still a small part of total recreation use, much smaller than activities such as hiking and walking. OHVs can and do cover many miles of trail in a day. A desired high quality OHV experience could include far more area (or miles of trail) than that which is usually desired by hikers or horseback riders. With the growth in motorized use and capacity of OHVs to cover tremendous amounts of country in a day, it will be a challenge to accommodate the growing demand for this use while continuing to provide settings for other recreation activities.

The GYA is known for its near-pristine lands, and once altered they cannot be replaced. A small amount of physical change can make a notable impact. At the same time, deliberative management actions can reduce this impact while continuing to allow the desired uses. Case studies in the technical document illustrate these types of actions.



The trend toward developing private lands of the GYA will change the scenic character of the region and result in more demand on the nearby public lands to provide places for new residents to recreate.

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Evolving values influence recreation preferences. Trends relevant to the future of recreation include a shift toward recreation and amenity values on the public lands (Driver 1999). The recent National Survey on Recreation and the Environment queried Americans on public land management objectives. Those identified as “important” to “very important” by at least 70% of the respondents were: conserving/protecting sources of water (91%), protecting ecosystems/habitats (86%), informing public on potential environmental impacts (81%), preserving resources (75%), and preserving wilderness experiences (74%) (Cordell 2004).

INSIGHTS GAINED FROM THE RECREATION OPPORTUNITY SPECTRUM (ROS) MAP AND ANALYSIS.

The large-scale ROS map reveals considerable diversity in the recreation settings across the GYA. The region’s overall niche is apparent in the large amount of area in the primitive, semi-primitive non-motorized and semi-primitive wilderness settings. Access for visitors via the road system to the margins of these large wild places is also evident (Figure 2). Figure 8 displays the relative abundance of ROS settings in the GYA as a whole.

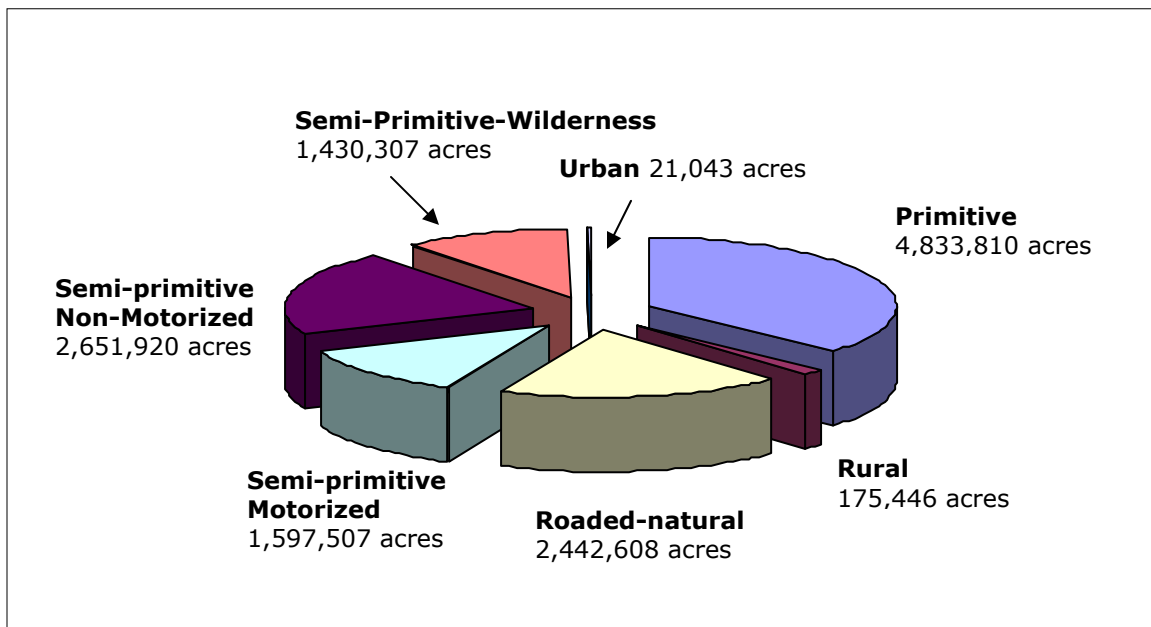


Figure 8. Recreation settings in the GYA, all federal land units combined.

In addition to the standard ROS classes shown in the chart above, semi-primitive settings within wilderness were separated on the map to account for wilderness boundaries close to roads but not properly mapped as roaded because of their special designation. These were called “semi-primitive wilderness” in this report and the accompanying ROS map. In addition, the unaltered “pristine” lands in the GYA were identified. These are areas of special concern because they are at risk for significant change with a relatively small increase in recreation use and are largely absent elsewhere in the country. In addition, they are less able than other settings to be kept in a desired condition by management actions such as hardening a campsite or creating a system trail

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to replace a network of informal ones; the very act of taking this kind of protective action changes the setting. Pristine areas are defined as those with no trails or other developments other than a few historic remnants, and very little sign of human influence—including non-native species or changes in vegetation due to past grazing or other human-caused disturbances. Although nearly nine million acres of the GYA is considered primitive or semi-primitive in ROS terms, relatively little of that acreage (about eighteen percent) is considered pristine.

Most of the pristine acres in the GYA are found in Yellowstone National Park. Pristine acres account for sixty-four percent of the park, and this area represents nearly half of the total area classed as pristine within the GYA.

Of the thirteen million-plus acres mapped in the GYA nearly seventy percent is managed for non-motorized recreation. Yellowstone National Park and the Shoshone and Bridger-Teton National Forests have the greatest land base within the primitive and semi-primitive non-motorized settings.

Semi-primitive motorized opportunities are in greatest supply in the Targhee, Gallatin, Bridger-Teton and Shoshone National Forests. These four forests provide eighty-four percent of the SPM opportunities in the Greater Yellowstone region.

The percentage of the total acreage classified for motorized recreation is sixty-five percent in the Targhee National Forest.

INSIGHTS GAINED FROM THE RECREATION CONDITION ANALYSIS.

After completing the analysis of recreation settings it became clear to the interagency team that more information would be helpful regarding how current and projected recreation use, populations trends, and other factors might change the recreation opportunities that the GYA provides. Thus an analysis of existing recreation condition was conducted to display where additional recreation use may be accommodated and where settings are at risk for unintended change. This analysis is explained in more detail in the accompanying technical report.

The recreation condition analysis will be most useful when integrated with other resource considerations. Recreation professionals and managers will find it useful for the following purposes:

- ▶ As a key piece of information to be used in the interdisciplinary work of evaluating management plans or project proposals
- ▶ To help direct annual work as needed to correct known resource problems or prevent them
- ▶ To better understand the effects recreation use can have on other natural resources and recognize the need to proactively address these effects

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The following categories are included in the analysis:

Areas currently able to accommodate existing and anticipated recreation use without unacceptable impacts to basic resources or the recreation setting and experience. These areas can be considered in a state of equilibrium between recreation supply and demand.

Those areas that may accommodate some kinds of additional use without unacceptable impacts to resources. This is not to suggest that an unlimited increase of all kinds of recreation use is acceptable. Appendix B of the technical report details for each area what kinds of additional uses could be accommodated, and in some cases, how much.

Areas now susceptible to unintended setting changes given current conditions and trends.

Areas where clearly stated management standards, policy, or visitor capacities are not being met, where recreation use is creating impacts incompatible with the setting.

The categories listed above are not mutually exclusive. In many cases ongoing or planned management actions are expected to result in at-risk areas being rendered more able to accommodate recreation use without damage.

What does the information gathered for this analysis show? That two conditions exist in the GYA – there are places that may be able to accommodate more recreation use and places showing impact from years of visitor use, and without added management action they will continue to deteriorate. A few areas have been identified where standards are currently not being met. Part of the reason for the relatively low numbers of such areas is that for many federal land areas in the GYA standards for physical and social settings have not been established.

A primary value of the recreation condition analysis lies in its usefulness to indicate the geographic convergence between public lands susceptible to undesirable change and the areas where demand for recreation is increasing. Although the team found that some parts of the GYA could accommodate more recreation use, many of these areas either lack the attractions that bring people, are too distant from the fast-growing communities, or lack public access.



Cirque of the Towers, Shoshone National Forest

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Conditions within the federal land units along with conditions and trends beyond those lands tell a story. The map below (Figure 9) shows a part of the GYA north and west of Yellowstone National Park in Montana. National Forest and Park lands are shown in gray; non-federal lands in pale yellow. The bold ovals superimposed on the map indicate fast-growing communities (Gallatin Valley, Madison Valley, Paradise Valley, Big Sky, and Gardiner) that exert significant and increasing recreation demand on adjacent public lands. Forecast models indicate this trend will continue.

The star on the map indicates the location of Hyalite Canyon within the Gallatin National Forest. Hyalite is one of Bozeman's most-used recreation spots, and increasing recreation use has created a number of management challenges for protecting resources while accommodating more and more visitors. There are places within the Hyalite area that are currently undergoing unintended changes due to high recreation use and with expected increases in population in the local area the existing management challenges can be expected to increase. This kind of geographic look at parts of the GYA can help managers communicate with residents and visitors about the need for responsible use and in some cases regulations to protect resources.

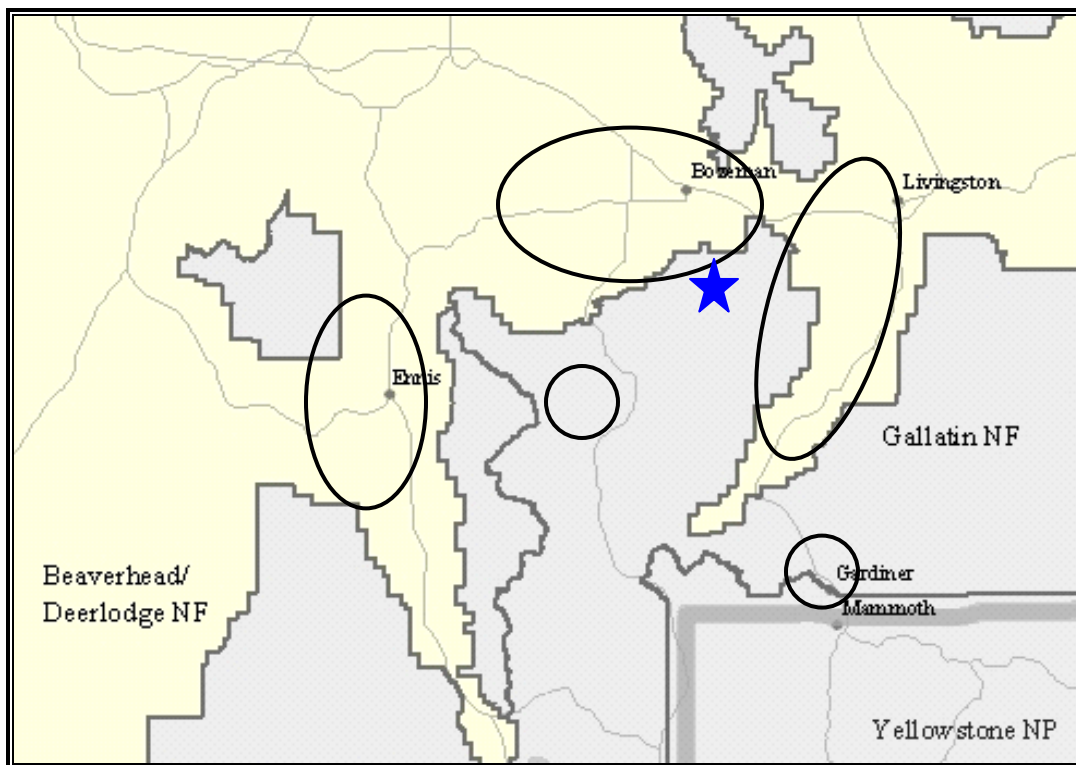


Figure 9. This is a visual example of 2 converging trends. The bold ovals illustrate core areas of forecasted growth in rural housing (after P.C. Hernandez-Gude 2004). Hyalite Canyon (blue star) is one of Bozeman's most-used recreation spots, and increasing recreation use has created a number of management challenges for protecting resources while accommodating more and more visitors. Forecast models indicate both trends will continue.

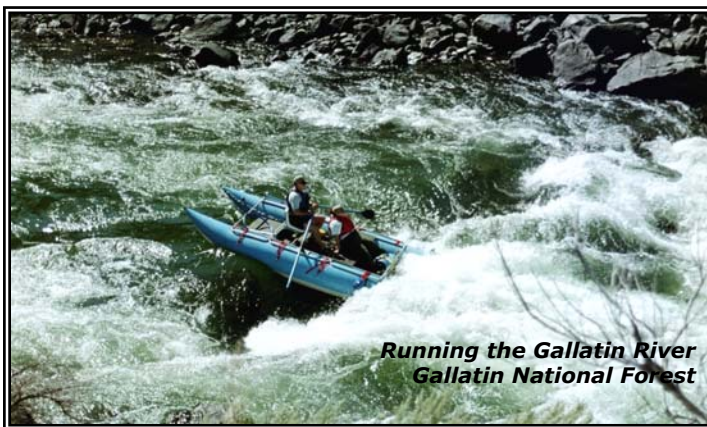
USING THIS REPORT

The Greater Yellowstone region that has been passed from generation to generation exists in its current state because of the visionary management and thinking that began in the mid-nineteenth century. Future managers should understand changing recreation trends and recreation's potential impacts on the existing supply of federal land and resources. The responsibility is not limited to federal agencies but also to partners in providing outdoor recreation and the general public who recreates and values these lands. With this in mind, practical implications for management are provided below.

Opportunities for public outreach and education

Agencies must simplify the message: Better lands result in better lives. Executive Order 13266, proclaimed by George Bush in 2002, referred to as the *Healthy Americans Initiative*, directs federal agencies to examine their programs and policies for their contribution to healthy physical activities. Federal lands in the GYA support this initiative in a number of ways: public lands offer places to make connections (with ourselves, with loved ones, with values, with nature, with heritage), places for all people, places for active recreation and healthy lifestyles, places to learn about nature and enrich one's life, and places to volunteer (civic engagement, belonging, stewardship, support). Managers can further this effort by focusing on:

- Opportunities to incorporate learning into nature-viewing activities.
- Opportunities to serve the growing interest in volunteerism, allowing citizens to interact with others and make meaningful contributions.
- The excellent condition of the natural environment and its wildlife.
- Opportunities for quiet/recuperative recreation as well as for stimulation and challenge, recognizing that these activities are not always compatible in the same places.
- The health benefits of active outdoor recreation on public lands.
- Opportunities for family activities.



Given that nearly half of those planning their vacations use travel web sites as major sources of information (Roper, 2003), the agencies can take advantage of the Internet to reach people with key messages and information before they arrive.

Management Challenges

As visitation increases, agencies may need to consider new management actions. Diverting some uses, setting limits and implementing them by means of a permit system, changing the way visitors travel in private vehicles, and other management actions may be needed in the near future to avoid a diminished GYA.

RECREATION IN THE GREATER YELLOWSTONE AREA

Challenges recreation managers can expect to confront in the near future include:

1. The need to proactively address issues associated with new types of recreation due to changing technology. A case study involving National Park Service responses to the growing interest in personal watercraft is found in the technical guide.
2. The need to manage social conflict, particularly between the growing interest in quiet, accessible recreation and the growing interest in adrenaline/challenge recreation. A case study for the Cache Creek-Snow King area, near Jackson Wyoming, provides examples of how social conflicts are being addressed.
3. The need to secure alternative sources of funding for recreation infrastructure needs, planning, use management, and monitoring. Both the Cache Creek-Snow King example in this report and the *Main Street to Mountains* initiative in Montana's Gallatin Valley (case study in the technical report) provide examples of how this has worked.

Tools and solutions for planning and monitoring

Clear statements of “niche” (or purpose and mission) and desired conditions, with supporting social and biophysical data to provide rationale, can help in the difficult management decisions facing all agencies.

Agencies are being asked to accommodate emerging recreation types without displacing traditional uses. Using ROS classes in a prescriptive manner can help achieve this; a case study from Montana's Elkhorn Mountains is provided in the technical report.

Adequate inventory and monitoring of recreation settings, facilities, and trends, and integration of this information into other resource plans, will allow agencies to proactively manage resources.



There is a need for concise management standards and condition monitoring to determine the acceptable degree of change and when that threshold has been reached or breached. This need could be incorporated into land management plans.

Investment in infrastructure is not the only way agencies can manage recreation use; maintenance of dispersed settings and management of human uses to maintain those settings is becoming more important.

Funding and Partnerships

Federal land agencies can become more effective collaborators in local efforts to retain those public land values that help make communities vital. Agencies can expect to be increasingly called upon to be active participants in efforts to manage growth and community health and other issues beyond the federal land boundaries.

Given projected agency budgets, developing foundations, endowments and enduring partnerships will be increasingly important.

Because of the natural resources, the relatively easy access to them, the global interest in the GYA, as well as the nature of the human communities within it, agencies have the opportunity to demonstrate how to create an ecologically and socially sustainable region. Working together, entities such as the GYCC, academic researchers, public-spirited think tanks, visionary private-sector groups, and others can become a formidable and influential consortium.

CASE STUDIES

Included in the technical report (Chapter 5) are a number of case studies that illustrate successful applications of some of the principles and findings of this report. They include various settings from highly developed to backcountry and are intended to provide ideas for what works. An example follows.

The Cache Creek - Snow King Area, near Jackson, Wyoming. This area is located immediately adjacent to the town of Jackson and includes Cache and Game Creeks in the Bridger-Teton National Forest. The area has over fifty miles of non-motorized trails. Recreation use is very high, with many residents using the area daily. Special uses include an outfitted wagon cook-out site and daily horse rides accounting for 30,000 service days of use each summer, as well as many recreation events. Snow King Resort serves as a focal point for trail use. Cache and Game Creeks drain into Flat Creek, identified as an impaired watershed.

What was the problem? Rapidly growing recreation use created a network of user-created trails, conflict among users and resource impacts on wildlife and water. Some specific problems included:

- Soil erosion due to poorly located informal trails
- Stream bank erosion and sedimentation
- Wildlife disturbance
- Concentration of dog waste, particularly near trailheads
- Conflicts due to poor dog control
- Conflict between outfitted wagon cook-out operation and general public use
- Mountain bike speed on narrow trails
- Inability of people unfamiliar with the area to navigate the trails

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What was done?

Planning / public involvement: A public charette was held to develop a recreation strategy and actions to address issues with trails, user conflicts, and resource damage. The slogan that emerged to reflect goals for the area was “Sustainable Trails, Respect for People, Respect for Land,” which is now on a banner posted at every trailhead. Annual public open houses were held to share accomplishments and gather input on proposed projects and priorities.

Partnerships / Grants / Volunteers: Relationships were forged with many local agencies, non-profit organizations, and individuals who had an interest in the area. A Challenge Cost Share Agreement with a local non-profit group, Friends of Pathways, initiated the effort by enabling a project coordinator to be hired to implement the recreation strategy and engage people directly in stewardship work. Grant funding was obtained from the Wyoming State Trails Program, Teton Conservation District, and the Forest Service. When issues with dogs arose, the Forest Service facilitated dialogue between wildlife and dog interests which led to the formation of a new initiative called R-DOG (Responsible Dog Ownership Group).

Education / Outreach: Many tools were used to increase awareness of recreation opportunities and responsible use: articles and paid media spots, field patrols by uniformed employees, trailhead signing, production of an area map and trail guides, and special events such as National Trails Day, which has incorporated a trails school taught by IMBA and a National Public Land Day multi-use poker run.

Infrastructure: Several existing trails were reconstructed, using design techniques that not only corrected erosion problems but also reduced conflicts by slowing bike speed down while still offering a fun ride. Three new trails have been constructed with one more proposed to make connections that improve loop opportunities near town and reduce conflicts by providing separated trails in very congested areas. Trail junction posts that mimic pathway signing have been installed throughout the area. Seven mutt-mitt stations were installed at trailheads, along with bear-resistant trash receptacles. These are maintained by volunteers.

Restoration: A large project is underway to restore stream bank conditions in Cache Creek. This involves closing some areas with debris, installing fences and other barriers, relocating trails, hardening access points, and planting native sedges.

Scientific studies: A study on the nature and extent of visitor conflict in the area was conducted by a graduate student from North Carolina State University. Extensive water quality monitoring was conducted by the Teton Conservation District.

What were the results?

- ▶ Approximately fifteen miles of trail have been reconstructed. Most of the trail system is greatly improved, causing far less soil erosion.
- ▶ The project coordinator supervises back-to-back volunteer and service group projects. Annual contribution of volunteer labor exceeds a thousand hours.
- ▶ Monitoring has shown a significant reduction in dog waste.

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- ▶ Visitor feedback suggests that responsible behavior by all user groups has improved, although issues remain and further improvement is necessary.
- ▶ The quality of information and signing has greatly improved. Visitor feedback is particularly positive regarding the new trail signing and detailed area map.
- ▶ Momentum builds every year for greater community involvement and more partners. One indication of this commitment was the community donating \$20,000 to reconstruct two miles of trail. The success of this project is generating additional interest in raising private funds to accomplish intensive trail projects.



Trail reconstruction in Cache Creek, Bridger-Teton National Forest

THE TECHNICAL REPORT

Far more detail, analysis, and illustrations that demonstrate the findings of this summary are found in the accompanying technical report. Chapter 3 goes into detail about the attributes of the federal land base in the GYA as well as individual units; Chapter 4 includes more data on population and recreation trends and projections. Several appendices follow the technical report; Appendix A contains unit-specific ‘niche’ statements and Appendix B includes a table that gives rationale for each of the polygons included in the recreation condition map.

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"I have wandered over a good part of the Territories and have seen much of the varied scenery of the Far West, but that of the Yellowstone retains its hold upon my imagination with a vividness as of yesterday.... The impression then made upon me by the stupendous & remarkable manifestations of nature's forces will remain with me as long as memory lasts."

...landscape painter Thomas Moran



Wyoming and Hoback Ranges, Bridger-Teton National Forest

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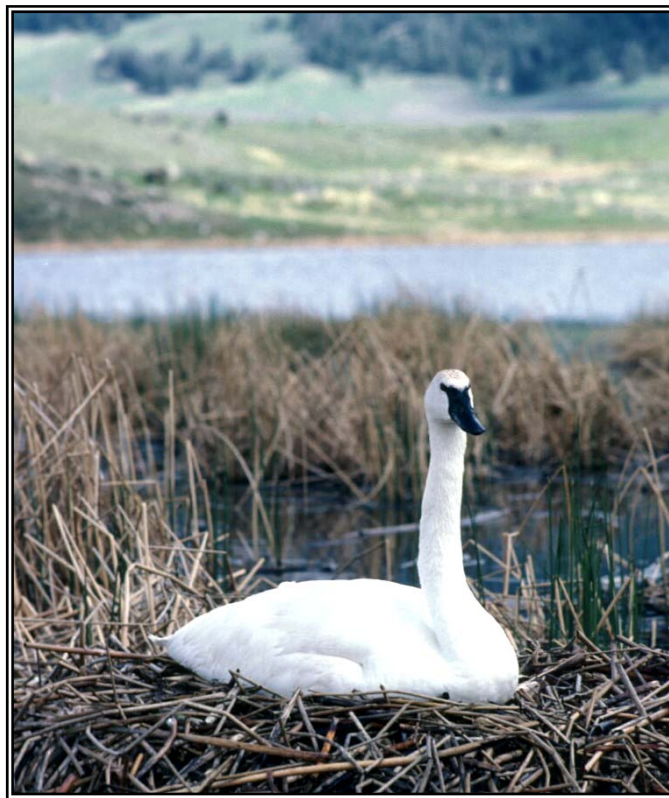
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***Nesting trumpeter swan,
Red Rock Lakes National Wildlife Refuge***