Wyoming Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2014-2019

The 2014-2019 Statewide Comprehensive Outdoor Recreation Plan was prepared by the Planning and Grants Section within Wyoming’s Department of State Parks and Cultural Resources, Division of State Parks, Historic Sites and Trails. Updates to the trails chapter were completed by the Trails Section within the Division of State Parks, Historic Sites and Trails. The Wyoming Game and Fish Department provided the wetlands chapter.

The preparation of this plan was financed through a planning grant from the National Park Service, Department of the Interior, under the provision of the Land and Water Conservation Fund Act of 1965 (Public Law 88-578, as amended).

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Introduction

The 2014 Statewide Comprehensive Outdoor Recreation Plan (SCORP) serves as a guide for local, state and federal agencies in the development and provision of future outdoor recreation opportunities. The purpose of this five-year (5) SCORP is to identify the outdoor recreation needs of the citizens and of visitors to Wyoming and to develop a program to address those needs. The 2014 plan is the ninth (9) in a series of SCORPs which have been developed by the Wyoming Department of State Parks and Cultural Resources (SPCR), Division of State Parks, Historic Sites and Trails (SPHST), as part of the state’s ongoing and continuous commitment to providing high quality outdoor recreation opportunities. Wyoming’s abundant outdoor recreational opportunities and acclaimed natural resources should be identified and developed in a manner which allows the public access while maintaining the area’s unique features.

The outdoor recreation system in Wyoming is a complex and diverse structure. Outdoor recreation has been an important part of the state’s way of life for many years. Participation in outdoor recreation has grown dramatically in recent decades. Not only are there a wide variety of natural resources and recreational opportunities, but there are a large and varied amount of providers. Providers are guided by legislative mandates and guidelines, market prices and/or agency goals and objectives. With this many providers, the risk of duplication of services, missed opportunities and lack of coordination is a threat to the quality presentation of the state’s recreation opportunities.

On the local level - towns, cities, counties, school boards, joint power boards and local municipalities provide the opportunity to participate in outdoor recreation in the state. The private sector recreation industry also has great potential in Wyoming to provide needed facilities and is providing service in all areas of the state. Within state government, SPHST, the Wyoming Game and Fish Department (WGFD), the Wyoming Department of Transportation (WYDOT) and the Office of State Lands and Investments (OSLI) are all involved to varying degrees in providing outdoor recreation experiences. Federal agencies which provide outdoor recreational experiences in the state of Wyoming include the National Park Service (NPS), the United States Forest Service (USFS), the Bureau of Land Management (BLM), the Bureau of Reclamation (BOR), the United States Fish and Wildlife Service (USFWS) and the Bureau of Indian Affairs (BIA).

What is a SCORP?

The SCORP is the only statewide document that attempts to bring together the wants and needs of the recreation users and providers. This document examines Wyoming’s outdoor recreation resources and is used as an information resource and guidance tool. It is an endeavor to help guide the recreation industry in Wyoming while protecting and enhancing Wyoming’s natural resources. Most of the individual state parks and historic sites have master plans although many of them are outdated. Federal land managers have plans for their respective areas, but not an overall Wyoming plan. Many of the private providers have their marketing and/or long range goal plans, but an overall plan does not exist showing opportunities in Wyoming.

Completion of the 2014 – 2019 SCORP ensures Wyoming’s continued eligibility to participate in the Land and Water Conservation Fund (LWCF) program. The plan will guide the investment of LWCF monies in
Wyoming over the course of the next five years to be distributed wisely based on the demonstrated needs of the citizens of the state.

The SCORP is also used in conjunction with the Recreation Trails Program (RTP). This grant program runs through the Federal Highway Administration (FHWA), and is administered by the SPCR. The RTP provides funding for the development, improvement and maintenance of trails and trail related facilities, within the State of Wyoming. Applicants for this program must demonstrate that projects further a specific goal of the SCORP and are consistent with the priorities of the State Trails Plan.

The Legal Federal Authority of SCORP

Legal authority for the development of the 2014 SCORP is Chapter 2 of the Land and Water Conservation Fund State Assistance Program, Federal Assistance Manual, Volume 69. This chapter explains the objectives, eligibility requirements, and guidelines for the state and the NPS in preparing and reviewing the SCORP. The SCORP is required by Section 6 (d) of the LWCF Act of 1965, (USDA, NPS 1965) as amended.

As per Chapter 2.a.4, the minimum requirements of the plan are:

A. The plan must describe the process and methodology(s) chosen by the State to meet the guidelines set forth in this section.

B. The planning process must include ample opportunity for public participation involving all segments of the State’s population.

C. The plan must be comprehensive. The plan will be considered comprehensive if it:

   (1) Identifies outdoor recreation issues of statewide importance based upon, but not limited to, input from the public participation program. The plan must also identify those issues the State will address through the LWCF and those issues which may be addressed by other means;

   (2) Evaluates demand, i.e., public outdoor recreation preferences, but not necessarily through quantitative statewide surveys or analyses; and

   (3) Evaluates the supply of outdoor recreation resources and facilities, but not necessarily through quantitative statewide inventories.

D. The plan must have an implementation program that identifies the State’s strategies, priorities and actions for the obligation of its LWCF apportionment. The implementation program must be of sufficient detail for use in developing project selection criteria for the State’s Open Project Selection Process (OPSP) so projects submitted to NPS for LWCF funding will implement the SCORP.

E. The plan must contain or reference a wetlands priority component consistent with Section 303 of the Emergency Wetlands Resources Act of 1986. At a minimum, the wetlands priority component must:
Be consistent with the National Wetlands Priority Conservation Plan, prepared by the U.S. Fish and Wildlife Service;

Provide evidence of consultation with the state agency responsible for fish and wildlife resources;

Contain a listing of those wetland types which should receive priority for acquisition; and

Consider outdoor recreation opportunities associated with its wetlands resources for meeting the State’s public outdoor recreation needs.

The plan may consist of a single document or may be comprised of multiple documents as long as the guidelines as set forth in this section are met.

The Requirements of SCORP

LWCF guidelines (USDI, NPS 2008) specify that a SCORP be prepared every five (5) years, and that each SCORP:

- assess the supply and demand for outdoor recreation
- contain a wetlands component that identifies wetlands with high recreation values
- include an implementation component that outlines recommended actions consistent with plan goals.
The Land and Water Conservation Fund

The SPHST, as the public agency charged with planning and outdoor recreation matters in the State, is the Governor’s designated agency to administer the LWCF in Wyoming. The LWCF enables SPHST to help fulfill this mandate by providing federal matching grants for park and outdoor recreation developments and a framework to ensure Wyoming’s resources are used efficiently and effectively.

The purpose of the LWCF Act of 1965, Public Law 88-578, is “to assist in preserving, developing and assuring accessibility to all citizens of the United States of America of present and future generations... such quality and quantity of outdoor recreation resources as may be available and are necessary and desirable for individual active participation in such recreation and to strengthen the health and vitality of the citizens of the United States by (1) providing funds for and authorizing Federal assistance to the States in planning, acquisition and development of needed land and water areas and facilities...” Participation in the LWCF program requires each state to complete a SCORP every five (5) years in order to maintain eligibility in the LWCF cost-sharing program.

Funding for the LWCF program is derived principally from revenues associated with Outer Continental Shelf mineral receipts. Other sources of revenue include federal surplus property sales and federal motorboat fuel taxes.

The original LWCF Act provided a 60/40 split in funding, with the states receiving 60 percent of the total dollars. In 1976, the Act was amended to read “not less than 40 percent” to the federal agencies. Total amounts available to states are generally determined by an apportionment formula where 40 percent of available state money is prorated equally to each state; 25 percent is prorated on the basis of population size; 20 percent prorated on the total population residing in Standard Metropolitan Statistical Areas, and 15 percent is prorated by the total population to those states which have demonstrated need through previous compliance and efficient management of the LWCF program. Available LWCF funds for Wyoming are comparatively minimal because of the low state population and as there are no criteria for the areal extent of each state.

Table 1.1 Distribution of Land and Water Conservation Funds in Wyoming (1966-2013)

<table>
<thead>
<tr>
<th>County</th>
<th>Dollar Amounts Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albany</td>
<td>$1,237,373.09</td>
</tr>
<tr>
<td>Big Horn</td>
<td>$966,168.19</td>
</tr>
<tr>
<td>Campbell</td>
<td>$1,360,062.03</td>
</tr>
<tr>
<td>Carbon</td>
<td>$1,534,471.59</td>
</tr>
<tr>
<td>Converse</td>
<td>$1,609,640.53</td>
</tr>
<tr>
<td>Crook</td>
<td>$1,261,463.93</td>
</tr>
<tr>
<td>Fremont</td>
<td>$2,572,810.92</td>
</tr>
<tr>
<td>Goshen</td>
<td>$540,996.50</td>
</tr>
<tr>
<td>Hot Springs</td>
<td>$848,097.50</td>
</tr>
<tr>
<td>Johnson</td>
<td>$609,725.00</td>
</tr>
<tr>
<td>Laramie</td>
<td>$3,474,322.06</td>
</tr>
<tr>
<td>Lincoln</td>
<td>$1,721,016.02</td>
</tr>
<tr>
<td>Natrona</td>
<td>$1,819,186.02</td>
</tr>
<tr>
<td>Niobrara</td>
<td>$314,861.65</td>
</tr>
<tr>
<td>Park</td>
<td>$1,535,865.79</td>
</tr>
<tr>
<td>Platte</td>
<td>$1,908,972.87</td>
</tr>
<tr>
<td>Sheridan</td>
<td>$2,162,698.79</td>
</tr>
<tr>
<td>Sublette</td>
<td>$502,683.81</td>
</tr>
<tr>
<td>Sweetwater</td>
<td>$4,215,087.30</td>
</tr>
<tr>
<td>Teton</td>
<td>$533,210.35</td>
</tr>
<tr>
<td>Uinta</td>
<td>$1,265,247.74</td>
</tr>
<tr>
<td>Washakie</td>
<td>$600,636.14</td>
</tr>
<tr>
<td>Weston</td>
<td>$660,618.51</td>
</tr>
<tr>
<td>Other</td>
<td>$1,501,965.21</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$34,838,181.53</td>
</tr>
</tbody>
</table>
The level of funding available through the LWCF program has decreased substantially over the last decade. Nonetheless, it remains the largest funding source for federal matching monies for outdoor recreation development and improvements available to Wyoming communities.

Historically, the majority of LWCF monies made available to Wyoming have been provided to county and local municipalities (Table 1.1 and Figure 1.1). The distribution of monies within Wyoming also has been historically uneven and most likely affected by population size, administrative effectiveness, and awareness of local communities regarding the availability and processes associated with LWCF funding. Monies available to the State of Wyoming can be used for development at state parks or can be distributed to county and local governments, recreation and school districts.

Figure 1.1 • LWCF Awards To Wyoming Communities
Funding was minimal in the late 1980s and early 1990s. Funding was cut altogether from 1995-1999. The LWCF funds were reestablished in 2000. The most recent apportionments the State of Wyoming has received are: fiscal year 2005 - $749,063.00; 2006 - $245,789.00; 2007 - $245,789.00; 2008 - $203,057.00; 2009 - $238,446.00; 2010 - $334,458.00; 2011 - $329,322.00; 2012 - $371,921.00; and for fiscal year 2013 - $352,470.00 (Figure 1.2).

Figure 1.2: LWCF Appointments to the State of Wyoming

Trails Component

Recreational trails are an important component of outdoor recreation in Wyoming. The 2013 Wyoming Statewide Trails Inventory Report documented a total of 2,160 trails providing 10,472 miles that are available to users in Wyoming during all seasons. Federal agencies: including the US Forest Service, National Park Service, Bureau of Land Management, and the US Fish and Wildlife Service; state and local agencies: including Wyoming Game and Fish Department, Wyoming Department of Transportation, county and municipal agencies; as well as private landowners administer these trails in conjunction with the SPHST, Wyoming State Trails Program (WSTP). The WSTP is responsible for managing winter snowmobile trails and off-road vehicle trail use. The mission of the WSTP is to facilitate the development and administration of a diverse motorized trail system for the enjoyment and benefit of the public through partnerships and collaboration. The WSTP enables both land managers and users to coordinate actions and enhance state trails.

Wetlands Component

The Wyoming Game and Fish Department provided an updated wetlands component during the data collection phase for the 2013 SCORP. These data were derived from the USFWS National Wetland Inventory and data provided by the US Army Corps of Engineers, as well as their own sources.
The LWCF Grants Manual, Chapter 630.1, cites the following guidelines for SCORP planning:

Chapter 2.a.4: the plan SCORP must contain or reference a wetlands priority component consistent with Section 303 of the Emergency Wetlands Resources Act of 1986. At a minimum, the wetlands priority component must:

- be consistent with the National Wetlands Priority Conservation Plan, prepared by the U.S. Fish and Wildlife Service
- provide evidence of consultation with the state agency responsible for fish and wildlife resources,
- contain a listing of those wetland types which should receive priority for acquisition, and
- consider outdoor recreation opportunities.

Since the Wyoming Game and Fish Department has the expertise available to identify the wetlands issues, they were selected to develop this requirement of the SCORP. A specific in-depth inventory of outdoor recreation areas adjacent to or dependent on wetlands areas is not included in this document.

The Planning Process

The initial phase of the SCORP development process was to inventory and analyze past SCORPs and other pertinent data. Participation by the public was a key component in the planning process. Surveys of Wyoming citizens and Wyoming recreation providers were conducted. The survey data collected are being used to continually assess the supply of outdoor recreation resources and to determine future demand for recreation facilities and areas in the state.

- The Wyoming Survey and Analysis Center (WYSAC) conducted and distributed a random users’ survey to determine the supply of outdoor recreation services in Wyoming and to gather insight into public perception on the needs and future demands for outdoor recreation facilities in the state. The size of the random sample was large enough to achieve a completion rate of 898 surveys to ensure that the survey results represent the opinions of Wyoming households with a 95% degree of confidence (WYSAC 2013).

- The providers’ survey was an e-mail survey of ten public recreation organizations throughout Wyoming. The recreation providers were selected to provide a cross-section of community sizes and geographic distribution.

- The 2013 inventory of Wyoming trails was planned and conducted as an update and extension of the 1998 Wyoming Statewide Trails Inventory (Pindell et al. 1999). Basic procedures and methods for data collection for the 2013 inventory were modified from the original project.

- The 2011-2012 Wyoming Comprehensive Snowmobile Recreation Report compiled economic impact information. Snowmobiling in Wyoming generates a total of $175.5 million per year to the state’s economy. The report has also compiled resident and non-resident spending and recreation patterns as well as priorities for future management of the State Snowmobile Program (Nagler et al. 2012).
• The 2012 Wyoming Comprehensive Off-Road Vehicle Recreation Report compiled economic impact information. Off-Road Recreation in Wyoming generates a total of $244.2 million per year to the state’s economy. The report also compiled resident and non-resident use and spending patterns as well as demographics and priorities for future management of the State ORV Trails Program (Nagler et al. 2013).

• The Economic Impact of Non-motorized Trail Usage on National Forests in Wyoming was compiled to provide a starting point to report on the economic impact, use and spending patterns, and priorities for future management of the State Non-motorized Trails Program.

• Drafts of the Statewide Comprehensive Outdoor Recreation Plan were made available for public comment. Public comments received were considered and incorporated into the final document. A draft copy of the SCORP was provided to the State Parks and Cultural Resources Commission and the Wyoming State Trails Advisory Council for review and comment.
Introduction

These documents identified all recreation trends and issues. The SCORP planning process then addressed needs and priorities for federal, state and local governments for the next five years. The final phase for the plan recommends specific “actions” and development priorities for the next five years.

Priority recreation issues and projects were identified by analyzing survey data and considering the needs of and resources provided by agencies and organizations. The implementation plan includes a list of recommendations for each issue. A list of priority projects to address the recommendations is also identified. The recommendations and priority projects will be used to guide the allocation of LWCF monies to future applicants.

The intent of this plan is to develop a document that is “user friendly.” This 2014 SCORP does not contain a step-by-step outline for the future. The 1990 SCORP is an existing technical document which can continue to be referenced for detailed information about Wyoming. The primary focus of this 2014 version is to provide dialogue for both recreation users and outdoor recreation providers in an easy to read and understandable format.
Chapter 2
Description of State
History

More than 20,000 years ago, migration brought the human race by various routes to the present United States. Archaeological research and historic documentation indicates ancestors of the American Indians inhabited present day Wyoming as far back as 11,500 years ago. The prehistoric cultural tradition of these ancient people was nomadic and survival relied on hunting and gathering. Numerous cultural artifacts such as tipi rings and pit hearths have been found throughout Wyoming and provide stories from the past.

Harsh environmental conditions prevented most early inhabitants from permanently settling in Wyoming. Prehistoric tribes would extract from the land what was needed for survival and move on. One semi-permanent settlement, The Spanish Diggings, just north of present day Guernsey is considered one of the most important archeological sites in the northwestern plains. This settlement was used as a transition area from the Midwest by Paleo-Indian tribes. Artifacts can be found here from the mining of quartzite by these prehistoric peoples.

During the 18th century several Indian tribes settled in Wyoming. The Arapaho and Cheyenne Indian tribes occupied the southeastern plains and North Platte River Basin areas of Wyoming. The Ogallala and Brule Sioux Indian tribes moved into Eastern Wyoming from South Dakota. In the early 1800s the first white men came to Wyoming and explored this area thoroughly. The United States acquired the area that became the State of Wyoming through the Louisiana Purchase of 1804 giving explorers and fur trappers the opportunity to develop and settle in the State. The first expedition to cross Wyoming was made by the Astorians in 1811-1812.

By the mid-1800s these early explorers vanished from history and the plains people were forced onto reservations. Because of the unique geological landscape, Wyoming has served as a thoroughfare for western migration ever since. The high “Wyoming Basin” through the Rocky Mountains was a natural transportation route. Left behind were wagon and stagecoach ruts, names and dates carved on trail sides, several place names and many graves of those lost along the way. The 1800s also brought the stagecoach, the Pony Express, the railroad and the first transcontinental telegraph to Wyoming. The North Platte River was enticing to farmers and ranchers. Early settlement in Wyoming was characterized by open grazing of sheep and cattle and farming which was followed by permanent homesteading and ranching operations. Known today as the Equality State, Wyoming was the first state to specifically give women the right to vote.

Economics

Wyoming has always had a natural resources-based economy. Mineral extraction, construction and tourism are major economic activities. Mining is the state’s largest industry accounting for 30% of the total value of goods and service produced (Gross Domestic Product or GDP). Economically significant quantities of oil, natural gas, coal and uranium are found in several parts of the state. Wyoming currently ranks as the leading producer of coal, third leading producer of natural gas and eighth leading producer of oil in the United States. It is estimated that two thirds of the state’s and local governments’ revenues are from the mining industry. Local, State, and Federal Governments are Wyoming’s second largest industry, followed by real estate, rental and leasing. Agriculture does not make up a large portion of Wyoming’s...
income, but it does contribute significantly to the state’s identity and many rural residents in the state rely on agriculture for their way of life.

At the end of 2010, the National GDP was estimated at $14,400 billion dollars. The estimated total GDP for Wyoming was $35.845 million (Wyoming Department of Administration and Information 2012).

The largest employer in the state, particularly in the southeast part of the state, is the government sector. The government jobs serve as a stabilizer to the state’s economy through the up and down cycles of the mineral industry. The employed labor force in 2005 was 385,721. From 2004 to 2010 employment jumped by 12 percent or 41,318 jobs resulting in a sharp decline in unemployment. The 2011 unemployment rate was 6 percent and below the national average of 8.9 percent. Earnings within the State of Wyoming have remained steady over the last decade. Wyoming’s real average earnings per job were $42,768 while the nation’s average was at $47,042 (Wyoming Department of Administration and Information 2012).

Following a short, but severe recession, Wyoming’s economy began to turn around starting in 2010 thanks to the demand for natural resources. The economic recovery now appears to be slowing down due to weak prices for coal and natural gas. The mining industry has also increased demands in other industries such as construction and government services including hospitals. The state bucked national trends in job growth but personal income and housing appreciation followed national trends. The total job growth rate of 12 percent in 2010 was the third highest in the U.S.; a personal income growth rate of 2.7 percent during the first quarter of 2013 was less than national rate of 2.8 percent; and the annual housing appreciation rate dropped since 2008 and had only slight increases starting in 2011 (Wyoming Department of Administration and Information 2013). Wyoming’s reliance on mineral extraction is apparent in its economic diversification index, which is the lowest in the nation and is currently the lowest in Wyoming’s history. Decelerating growth in the economy is spread throughout most economic industries, with the largest decline in the mining sector. Should energy prices continue to drop our low economic diversification and/or high dependence on the energy sector will continue to create a challenging economic climate (Wyoming Department of Administration and Information 2007).

Agriculture is a basic component in the overall prosperity of the state. Primary crops include wheat, oats, sugar beets, corn, potatoes, barley and alfalfa. Most state experts agree that tourism is the second largest industry, but it is not measured as an independent industry because its economic effect crosses into many retail and service sectors such as transportation, food, and accommodations. By virtue of the natural and cultural resources, Wyoming has the potential for a significant amount of tourism development. Tourism is especially beneficial because it generates revenue throughout the state. Trends in tourism are predicted to be consistent with the past trend of moderate growth. Challenges of the tourism industry are related to a labor force shortage and many businesses are forced to recruit seasonal employees from other countries. In addition, the flooding of hotels with oil and gas workers has negatively impacted tourism activities. There are, however, current factors that could work to the advantage of the state’s tourism industry. With the weakened American dollar international tourism is growing, there is an assumption that retiring boomers are more interested in natural and cultural resource tourism opportunities than the previous generation’s retirees, and the state’s increased revenues are creating opportunities to enhance tourist attractions. As tourism services are expanded an emphasis must be placed on protection of the industries’ resources including wildlife, natural features, cultural and historic sites, and scenic vistas (Wyoming Department of Administration and Information 2007).
Population

The rise and fall of the state’s number one industry, mineral extraction, parallels the population swings in the state. After the energy boom in the 1970s the population of the state grew by over 40%. The boom was followed by a bust in the mid-1980s and a slow and steady decline into the 1990s. Strong growth in the mining industry since the beginning of the 21st century has created a significant migration to Wyoming of people in their prime working years (Wyoming Department of Administration and Information 2007).

The number of Wyoming residents is at a record high. Our current population of 563,626 (based on the 2010 Census) surpasses the previous record of 510,361 residents set during the boom in 1983. Wyoming is still ranked 50th in the nation in total population. Our state boasts one square mile for every five residents with only Alaska being less densely populated.

Demographic factors such as age, ethnic makeup, per-capita income and urban vs. rural residency are elements that influence the outdoor recreation habits of users in Wyoming. Hispanic, Indian, Blacks, Asian and other minorities account for less than ten percent of the total population.

Wyoming’s population is aging quickly due to our high proportion of baby boomers and exodus of Generation X workers for employment opportunities and/or preferences for specific amenities. A mass exit of boomers from the workforce is occurring. As the population in Wyoming becomes older there will be a significant change in recreational user patterns. The public sector needs to be alert to demands for and types of services needed by the older population.

There are 23 counties in Wyoming containing 99 incorporated towns. Cheyenne is the state capital with a population of 59,500. When compared with other states in the region, Wyoming is considered predominately rural. Sixty-five percent of Wyoming’s population is considered urban, where urban areas in Wyoming are defined as cities and towns of more than 2,500 persons. There are three cities in Wyoming with a population of over 20,000 and two cities over 50,000.

Physical Geography

Located in the western United States, the Cowboy or Equality State encompasses 98,210 square miles (62,854,415 acres) of diverse terrain comprised mainly of high plains, mountain ranges, basins and river valleys. Water covers less than 1 percent of the state’s land area. The total federal acreage is just over 30,000,000, over 50 percent of the federal land is managed by the BLM followed by the USFS and NPS. The state is bordered by Montana on the north, South Dakota and Nebraska on the east, Colorado and Utah on the south and Utah and Idaho and Montana on the west.
Wyoming is within the following ecoregions: the Middle Rockies, Wyoming Basin, Wasatch and Uinta Mountains, Southern Rockies, High Plains and Northwestern Great Plains (Chapman et al. 2004). The Continental Divide, separating the watersheds of the Pacific and Atlantic Oceans, passes through the Wyoming Basin. Three major river systems have their headwaters in the state. The Snake and its tributaries flow into the Columbia; the Green River flows into the Colorado; the Yellowstone, Big Horn, Wind, Belle Fourche, Laramie, Sweetwater and North Platte Rivers all flow into the Missouri. The mean elevation of the state is 6,700 feet above sea level, the second highest elevation coming in just below Colorado. From the lowest point in elevation along the Belle Fouche River (3,100 feet) to highest point at Gannett Peak (13,804) Wyoming has a rich diversity of native plants and an abundance of wildlife (Knight 1994).

Climate

Climate is the long-term synthesis of aggregate atmospheric conditions produced by day-to-day weather variations. It includes averages, extremes, variables and temporal and spatial distribution of numerous meteorological features computed for periods ranging from days to decades. Elements of climate pervade the workings of the natural environment, often influencing and sometimes controlling human activities and commerce. Understanding local climate is of great importance in recreation planning and construction decisions.

Wyoming has a continental climate and is located in the heart of the mid-latitudes and is within the range of the polar jet stream which steers storms and fronts through the state. Since the mountain ranges lie in a general north-south direction perpendicular to the prevailing westerly winds, the ranges provide effective barriers which force the air currents moving in from the Pacific Ocean to rise and drop much of their moisture along the western slopes. Wyoming is considered semiarid east of the mountains.

The topography and variations in elevation make it difficult to divide the state into homogeneous climatological areas. In winter, because Wyoming is often beneath the jet stream, strong winds and outbreaks of arctic air frequently occur. Winters tend to be long and cold with generally low precipitation. Fall, winter and spring snowfall ranges from 35-65 inches annually. During the summer, the jet stream retreats northward over Canada leaving Wyoming’s weather semi-arid and moderately warm with low humidity. Thunderstorms and hailstorms are relatively frequent and short. Sunshine is abundant throughout the year and temperatures fluctuate widely, from -43 degrees Fahrenheit in the winter to 106 degrees Fahrenheit in the summer. Prevailing winds are from the west and northwest, and are relatively strong, averaging 12 miles per hour. On occasion strong winds of 30-40 miles per hour can prevail for several days. Precipitation normally ranges from 9-16 inches annually with the statewide annual average equals to 14.5 inches. The length of the growing season averages 140 days a year and diminishes statewide generally from east to west from 120 days in the Plains region to less than 80 days in the mountainous northwest (Curtis and Grimes 2004).

Topology

Wyoming’s terrain consists of vast plains and massive mountain ranges that provide beautiful natural scenery, high grazing plains and an abundance of valuable minerals. Extensive mountain ranges have been formed by the shifting and faulting of the continental plates breaking up Wyoming’s large plateaus. Mountain ranges within the Middle Rockies in the northern part of the state include the Black Hills, Big Horn, Absaroka, Washakie, Teton, Gros Vente, Wind River, Salt River, and Wyoming mountain ranges. The Southern Rocky
Mountains include the Granite, Laramie, Sierra Madre, and Medicine Bow mountain ranges. The mountains are surrounded by the Green River, Washakie, Great Divide, and Big Horn Basins in the western half of the state and the Powder River, Shirley, Hanna, Laramie and Denver Basins in the eastern half of the state.

Wyoming’s diverse terrain has traditionally been a major producer of energy resources and industrial minerals. The land can produce oil, natural gas, low sulfur coal, uranium, oil shale, trona, bentonite, gypsum, iron ore, gold and soda ash. Wyoming is the leading producer of oil and gas in the Rocky Mountain Region. The state is also the largest producer of coal in the nation and the world’s largest producer of natural trona. Forty thousand square miles of Wyoming’s landscape is underlain by coal, most of which is close to the surface.

Soil is an important natural resource in Wyoming. As with much of the Great Plains region, the soils are quite fertile. However, due to the low amounts of annual precipitation and the short, cool growing season only a small portion (3 percent) of the state is cultivated or “has seen the plow.” Most (90 percent) of the agricultural land is grasslands and shrublands used for livestock grazing. Mountain soils support forests because of the consistency of the soil and increased precipitation, much of which comes in the form of snow.

Clean water is abundant in Wyoming. Snow accumulation in the mountains determines the quality and quantity of water available for irrigation and other uses. Spring snow melt from these areas recharges the ground water system and reservoirs. Rainfall also contributes to the recharge of the ground water but to a far lesser degree.

Flora

Because Wyoming’s diverse landscape rises over 10,000 feet from its lowest elevation, a variety of landscapes and habitats are present. Above timberline, grasslands, low shrublands and alpine tundra are characteristic and forests of spruce, pine, fir and aspen as well as open juniper woodlands are found in the lower mountains and foothills. Grasslands cover the eastern plains and the statewide basins. The basins of central and western Wyoming are dominated by sagebrush and other desert plants including a wide variety of wildflowers. Streams and rivers draining the landscapes have fertile soils on the floodplains. Dense stands of sedges, willows, alder, box elder, and cottonwood can be found at water’s edge.

Fauna

The abundance of native vegetation and quality habitat creates prime breeding and feeding grounds for a variety of bird and wildlife species and provides refuge for some of North America’s largest animals. Numerous amphibians, reptiles, mammals, birds, and fish can be found. Great herds of mule and white tail deer and pronghorn antelope are easily spotted from many of the state’s highways. Huge numbers of elk can be found in Wyoming’s mountains. Other large mammals include black and brown bear, grizzly bear, moose, bighorn sheep, rocky mountain goat and mountain lion. Smaller mammals include the fox, mink, coyote, bobcat, jackrabbit, cottontail, otter, beaver, and raccoon. Birds include the trumpeter swan, white pelican, great blue heron, California gull, sage grouse, wild turkey, ring-necked pheasant, Canadian goose and numerous species of duck. Birds of prey include the bald eagle, golden eagle, osprey, and several kinds of hawks and owls. Brook, cutthroat, brown and rainbow trout, bass, walleye, crappie, perch and channel catfish can be found in the waters of the state.
Stewards of Wyoming’s Public Lands

Within the State of Wyoming’s boundaries lie an extremely valuable collection of natural and cultural resources providing tremendous opportunities for people wishing to participate in rural outdoor recreation as well as land stewardship. A number of land managers serve as recreation providers in Wyoming. They include: the National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, Bureau of Reclamation, State of Wyoming Game and Fish Department, Wyoming Office of State Lands and Investments, Division of State Parks, Historic Sites and Trails, local and county governments and privately owned recreation providers. The following list of recreation providers is for identification of only those outdoor recreation facilities and issues administered by those agencies.

Federal Outdoor Recreation Providers

The philosophy of managing federal lands to preserve natural conditions was carried forward by early explorers and led to the creation of Yellowstone National Park in 1872. Multiple-use on other federal land was given little attention until concerns began to be expressed about excessive timber harvesting and livestock grazing. The Multiple Use-Sustained Yield Act of 1960 emphasizing the importance of recreation, rangeland, watershed, fish and wildlife values as well as timber shaped the current management of the USFS. The BLM adopted a similar philosophy that included managing lands for recreation with the passage of the Federal Land Policy and Management Act in 1976.

National Park Service

The NPS administers Wyoming’s most popular and renowned outdoor recreational resources. They are responsible for seven different sites in Wyoming which total approximately 2,395,724 acres or about 8 percent of the state (Figure 2.1). Yellowstone is the largest site administered by NPS consisting of 2,219,790 acres. Grand Teton National Park is the second largest consisting of 309,994 acres. NPS-managed sites include:

- Yellowstone National Park
- Grand Teton National Park
- Devils Tower National Monument
- Fossil Butte National Monument
- Big Horn Canyon National Recreation Area
- Fort Laramie National Historic Site
- John D. Rockefeller Memorial Parkway
United States Forest Service

National Forest lands within Wyoming total 9,123,212 acres (Figure 2.2). These lands comprise 30 percent of the total public lands within Wyoming. The Bridger Teton National Forest is the largest area with 3,443,9236 acres of land followed by the Shoshone National Forest with 2,466,609 acres. Within Wyoming, the U.S. Forest Service also administers the Thunder Basin National Grassland which comprises 583,071 acres of public land.
Description of State

There are fifteen designated Wilderness Areas and one Wilderness Study Area in Wyoming. Wilderness areas provide areas for dispersed, primitive recreation experiences including hiking, horseback riding, hunting, backpacking and skiing. Wilderness areas are a destination for Wyoming residents as well as out of state visitors.

Figure 2.2 • United States Forest Service Administrative Areas

USFS Administrative Areas

- ASHLEY NATIONAL FOREST
- BIGHORN NATIONAL FOREST
- BLACKHILLS NATIONAL FOREST
- BRIDGER-TETON NATIONAL FOREST
- MEDICINE BOW NATIONAL FOREST
- SHOSHONE NATIONAL FOREST
- CARIBOU-TARGHEE NATIONAL FOREST
- THUNDER BASIN NATIONAL GRASSLAND
- UINTA-WASATCH-CACHE NATIONAL FOREST

WILDERNESS
The Washakie Wilderness Area is the largest Wyoming wilderness with 704,274 acres. Teton and Bridger Wilderness Areas are second and third largest, respectively, and consist of 585,238 and 428,087 acres. The USFS managed lands and wilderness areas are listed by administrative unit.

Ashley National Forest

Big Horn National Forest
  • Cloud Peak Wilderness

Black Hills National Forest

Bridger Teton National Forest
  • Bridger Wilderness
  • Teton Wilderness
  • Gros Ventre Wilderness

Caribou-Targhee National Forest
  • Winegar Hole Wilderness
  • Jedediah Smith Wilderness

Medicine Bow-Routt National Forest
  • Encampment River Wilderness
  • Huston Park Wilderness
  • Platte River Wilderness
  • Savage Run Wilderness

Shoshone National Forest
  • Absaroka-Beartooth Wilderness
  • Fitzpatrick Wilderness
  • North Absaroka Wilderness
  • Popo Agie Wilderness
  • Washakie Wilderness

Thunder Basin National Grassland

Wasatch-Cache National Forest
Bureau of Land Management

In Wyoming, the BLM administers approximately 17.5 million acres of land. This is slightly less than one-third of the state. Not all of this land is used for recreation activities. The dominant land use activity is based on a combination of factors including resource values, public demand, accessibility and economic considerations.

In addition to providing almost unlimited opportunities for dispersed outdoor recreation, the BLM administers a number of improved recreation sites where fees are collected as well as a non-fee trail system. The BLM is also the managing partner for the Bureau of Reclamation’s Fontenelle Reservoir. The BLM field offices and fee areas are as follows:

**Buffalo Field Office**

**Casper Field Office**
- Lodgepole Campground (Muddy Mountain Environmental Education Area)
- National Historic Trails Interpretive Center

**Cody Field Office**
- Five Springs Falls Campground

**Kemmerer Field Office**
- Fontenelle Campground

**Lander Field Office**
- Atlantic City Campground
- Cottonwood Campground
- Big Atlantic Gulch Campground

**Newcastle Field Office**

**Pinedale Field Office**
- Warren Bridge Campground

**Rawlins Field Office**
- Bennett Peak Recreation Site
- Encampment River Campground

**Rock Springs Field Office**

**Worland Field Office**

The Bureau of Land Management is the largest manager of federal land in the state. The BLM Wyoming State Office is located in Cheyenne. Most of the BLM Lands are in counties in the southern and central portion of the state (Figure 2.3).
The National Trails System Act of 1968 established a national system of trails including national recreation trails, national scenic trails, national historic trails, and connecting or side trails. The National Park Service and Bureau of Land Management have developed management plans and provide administration for the trails. The following National Trails pass through the state:

- California National Historic Trail
- Continental Divide National Scenic Trail
- Mormon Pioneer National Historic Trail
- Oregon National Historic Trail
- Pony Express National Historic Trail
- Texas Trail
United States Fish and Wildlife Service

The USFWS manages federal lands specifically for wildlife including elk, waterfowl and amphibians. The refuges provide opportunities to hunt, fish, view wildlife, and hike. There are six National Wildlife Refuge Areas and two National Fish Hatcheries which comprise a total of approximately 102,838 acres in Wyoming. The largest refuges are Seedskadee with 26,400 and Pathfinder with 16,807 acres and. Areas managed by the USFWS include:

- Bamforth National Wildlife Refuge
- Cokeville Meadows National Wildlife Refuge
- Hutton Lake National Wildlife Refuge
- Mortenson Lake National Wildlife Refuge
- National Elk Refuge-Jackson
- National Fish Hatchery-Jackson
- National Fish Hatchery-Saratoga
- Pathfinder National Wildlife Refuge
- Seedskadee National Wildlife Refuge

Bureau of Reclamation

The primary responsibility of the BOR in Wyoming is to develop and maintain structures which provide water storage and conveyance to serve flood control, hydropower and irrigation purposes. As a secondary function, BOR also helps to plan and develop recreation facilities at their Reclamation sites.

The administration of these recreation sites, however, is generally assigned to other agencies which assume responsibility for day-to-day operation. The NPS, the SPHST, local governmental units and in some cases the USFS all have agreements to manage BOR recreation areas. In total, the BOR administers and/or leases approximately 954,680 acres in Wyoming.

A list of the BOR lands in Wyoming used for outdoor recreation and the managing partners include:

- Alcova Reservoir: Natrona County Roads, Bridges & Parks Department
- Big Horn Canyon National Recreation Area: NPS
- Big Sandy Reservoir: BOR Upper Colorado Region, Provo, Utah Office
- Boysen Reservoir: SPHST
- Buffalo Bill Reservoir: SPHST
- Bull Lake: BOR, Wyoming Area Office
- Deaver Reservoir: WGF
- Eden Reservoir: BOR, Provo, Utah Office
- Flaming Gorge National Recreation Area: USFS
- Fontenelle Dam/Seedskadee Project of CRSP: Co-managed by BOR, BLM and USFWS
- Fremont Canyon Recreation Area: BOR, Wyoming Area Office
- Glendo Reservoir: SPHST
- Grassy Lake Reservoir: USFS
- Gray Reef Reservoir: Natrona County Roads, Bridges & Parks Department
- Guernsey Reservoir: SPHST
Wyoming Outdoor Recreation Providers

The State of Wyoming owns approximately 3.9 million surface acres of land. Much of the land was granted to the state by the federal government at the time of statehood under various acts of the U.S. Congress. The majority of state-owned lands are State Trust Lands and revenues generated are reserved for the benefit of public schools and other beneficiaries. In addition to the State Trust Lands, there is non-trust acquired land within the State. Non-trust lands are allocated and managed by other state agencies, including WGF and SPHST, to benefit the missions of the agencies and the public.

Public recreation providers for Wyoming’s municipalities and counties fall within city or county governments and recreation districts. Private recreation amenities are abundant and are available through lodging providers, private campgrounds, ski areas, golf courses, dude ranches and more.

The Wyoming Recreation and Parks Association is a non-profit association comprised of individuals and agencies involved in the field of parks and recreation as professionals, volunteers, advocates and vendors. The Association gives Wyoming providers professional support in promoting quality parks and recreation services through education and leadership.

Wyoming Game and Fish Department

The Wyoming Game and Fish Department is responsible for conserving and propagating fish and wildlife and managing wildlife for the benefit of the people of Wyoming. The agency’s responsibilities center on wildlife management rather than outdoor recreation.

The Game and Fish Department provides technical assistance to plan and develop areas which provide public access and improve wildlife habitat. Special hunt areas, wildlife preserves, fish hatcheries, boat launching facilities, and habitat improvement projects are examples of areas, projects and facilities the WGFD has developed to enhance the outdoor recreation experience in the state.
Wyoming Office of State Lands and Investments

State Trust Lands are not “public” lands in the same sense as those lands managed by the federal government. Almost all of the 3.9 million acres of land were granted to the state on its admission to the Union. These lands were granted to produce income for the support of the public schools and institutions to manage trust assets for two key purposes consistent with traditional trust principles: (1) long-term growth in value, and (2) optimum, sustainable revenue production.

Generally, state lands other than cultivated crop lands are available for public hunting, fishing and recreational day use. The lands must be legally accessed and public users must comply with the regulations of the Wyoming Board of Land Commissioners. These regulations prohibit any off-road motor vehicle use, overnight camping, or open fires.

Any activity which would damage state lands, roads, improvements or lessee property interests is also prohibited. Public users of these lands are encouraged to notify the lessee, when using these lands for outdoor recreational activities.

Department of State Parks and Cultural Resources
Division of State Parks, Historic Sites and Trails

The Division of State Parks, Historic Sites and Trails has legislative authority to manage recreation and historic sites and provide assistance to communities to develop recreation opportunities in Wyoming. Currently 48,200 acres of land and 71,000 surface acres of water for public recreation purposes are managed by SPHST. Amenities on SPHST managed properties include over 1500 campsites, group picnic areas, nearly 200 picnic sites and shelters, over 30 playgrounds and over 30 boat ramps. The SPHST system includes eleven state parks, one state recreation area, twenty-seven historic sites and two state archaeological/petroglyph sites (Figure 2.4). The sites in the system range in size from less than an acre to almost 36,000 acres.
The following sites are administered by SPHST:

**Table 2.1 Sites Administered by State Parks, Historic Sites, and Trails**

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Site Type</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ames Monument</td>
<td>State Historic Site</td>
<td>Albany</td>
</tr>
<tr>
<td>Bear River</td>
<td>State Park</td>
<td>Uinta</td>
</tr>
<tr>
<td>Boysen</td>
<td>State Park</td>
<td>Fremont</td>
</tr>
<tr>
<td>Buffalo Bill</td>
<td>State Park</td>
<td>Park</td>
</tr>
<tr>
<td>Camp Douglas</td>
<td>State Historic Site</td>
<td>Converse</td>
</tr>
<tr>
<td>Connor Battlefield</td>
<td>State Historic Site</td>
<td>Sheridan</td>
</tr>
<tr>
<td>Curt Gowdy</td>
<td>State Park</td>
<td>Laramie</td>
</tr>
<tr>
<td>Edness Kimball Wilkins</td>
<td>State Park</td>
<td>Natrona</td>
</tr>
<tr>
<td>Fetterman Battlefield</td>
<td>State Historic Site</td>
<td>Sheridan</td>
</tr>
<tr>
<td>Fort Bonneville</td>
<td>State Historic Site</td>
<td>Sublette</td>
</tr>
<tr>
<td>Fort Bridger</td>
<td>State Historic Site</td>
<td>Uinta</td>
</tr>
<tr>
<td>Fort Fetterman</td>
<td>State Historic Site</td>
<td>Converse</td>
</tr>
<tr>
<td>Fort Fred Steele</td>
<td>State Historic Site</td>
<td>Carbon</td>
</tr>
<tr>
<td>Fort Phil Kearny</td>
<td>State Historic Site</td>
<td>Johnson</td>
</tr>
<tr>
<td>Fort Reno</td>
<td>State Historic Site</td>
<td>Johnson</td>
</tr>
<tr>
<td>Fort Supply</td>
<td>State Historic Site</td>
<td>Uinta</td>
</tr>
<tr>
<td>Glendo</td>
<td>State Park</td>
<td>Platte</td>
</tr>
<tr>
<td>Granger Stage Station</td>
<td>State Historic Site</td>
<td>Sweetwater</td>
</tr>
<tr>
<td>Guernsey</td>
<td>State Park</td>
<td>Platte</td>
</tr>
<tr>
<td>Hawk Springs</td>
<td>State Recreation Area</td>
<td>Goshen</td>
</tr>
<tr>
<td>Historic Governors’ Mansion</td>
<td>State Historic Site</td>
<td>Laramie</td>
</tr>
<tr>
<td>Hot Springs</td>
<td>State Park</td>
<td>Hot Springs</td>
</tr>
<tr>
<td>Independence Rock</td>
<td>State Historic Site</td>
<td>Natrona</td>
</tr>
<tr>
<td>Keyhole</td>
<td>State Park</td>
<td>Crook</td>
</tr>
<tr>
<td>Lander Cemetery</td>
<td>State Historic Site</td>
<td>Fremont</td>
</tr>
<tr>
<td>Legend Rock</td>
<td>State Archaeological Site</td>
<td>Hot Springs</td>
</tr>
<tr>
<td>Medicine Lodge</td>
<td>State Archaeological Site</td>
<td>Big Horn</td>
</tr>
<tr>
<td>Names Hill</td>
<td>State Historic Site</td>
<td>Lincoln</td>
</tr>
<tr>
<td>Oregon Trail Ruts</td>
<td>State Historic Site</td>
<td>Platte</td>
</tr>
<tr>
<td>Piedmont Kilns</td>
<td>State Historic Site</td>
<td>Uinta</td>
</tr>
<tr>
<td>Platte River Stage Crossing</td>
<td>State Historic Site</td>
<td>Carbon</td>
</tr>
<tr>
<td>Point of Rocks Stage Station</td>
<td>State Historic Site</td>
<td>Sweetwater</td>
</tr>
<tr>
<td>Red Buttes Battle/Cemetery</td>
<td>State Historic Site</td>
<td>Natrona</td>
</tr>
<tr>
<td>Register Cliff</td>
<td>State Historic Site</td>
<td>Platte</td>
</tr>
<tr>
<td>Seminole</td>
<td>State Park</td>
<td>Carbon</td>
</tr>
<tr>
<td>Sinks Canyon</td>
<td>State Park</td>
<td>Fremont</td>
</tr>
<tr>
<td>South Pass City</td>
<td>State Historic Site</td>
<td>Fremont</td>
</tr>
<tr>
<td>Trail End</td>
<td>State Historic Site</td>
<td>Sheridan</td>
</tr>
<tr>
<td>Wagon Box</td>
<td>State Historic Site</td>
<td>Sheridan</td>
</tr>
<tr>
<td>Wyoming Pioneer Memorial Museum</td>
<td>State Historic Site</td>
<td>Platte</td>
</tr>
<tr>
<td>Wyoming Territorial Prison</td>
<td>State Historic Site</td>
<td>Albany</td>
</tr>
</tbody>
</table>
SPHST collects and maintains data on visitation through the visitor use traffic count program and through visitor surveys. The visitor use program collects and compiles data on visitors entering state parks and historic sites.

Every five years a visitor survey is conducted to evaluate the quality of visitor’s experiences, identify issues and identify future development needs at state parks and historic sites.

Annual visitation data at SPHST are compiled into a yearly report. The report summarizes visitor use statistics collected during the visitation season.
SPHST conducts surveys of visitors on a 5-year cycle (as funding allows) to assess opinions on the current management and future needs at State Parks, Historic Sites and Trails (Wyoming Division of State Parks Historic Sites and Trails 2009). The survey of park visitors gauges how the agency is doing and helps guide future planning and development.

*Figure 2.5 • Wyoming State Parks, Historic Sites and Trails State Park Land (left) and Water (right) Acreage*

**State Park Acreage Within Wyoming**

![State Park Acreage Pie Chart](image)

**Total State Park Acreage: 115,830**

*According to the 1999 State Park and Historic Sites Facilities Handbook*

Figure 2.5 above provides a breakdown of Land and Water acreage provided by selected State Park sites in Wyoming. It is important to note that the backbone of Wyoming’s existing state park system has been built around flat-water recreation opportunities. Many of these flat-water sites are owned by the Bureau of Reclamation and operated under lease agreement by the state.

**Wyoming Department Travel and Tourism**

The Wyoming Department of Travel and Tourism does not manage outdoor recreation resources except for some of the travel information centers located throughout the state. As the principle advocate for tourism planning and development, the Department works with federal and state land managers along with local public and private recreation providers to promote and facilitate increased travel to and within the state of Wyoming.

**Private Outdoor Recreation Providers**

The private sector recreation industry has great potential in Wyoming to provide needed facilities. Privately-run campgrounds, dude ranches, hunting lodges, outfitters, river rafters, fishing experiences, rodeos, snowmobile excursions, downhill and cross country ski areas, trap and target ranges and living history experiences, are a few of the activities that are successfully run by private industry in Wyoming.

The concept of partnerships in outdoor recreation in Wyoming has great potential for and with the private sector. Many federal and state recreation administrators have a variety of experiences with the planning and management of these facilities which could be shared with the private recreation sector.
Chapter 3
Recreation Facilities and Needs
Recreation Facilities and Needs

Planning Process

The intent of the Wyoming Statewide Outdoor Recreation Plan (SCORP) is to determine the trends in and use of outdoor recreation facilities and participation in activities. By understanding this information, appropriate decisions can be rendered in the distribution of federal Land and Water Conservation Funds. These funds are made available to Wyoming communities for the purpose of providing outdoor recreation facilities. Thus, it is imperative to know the present status of outdoor recreation facilities and the needs of the users. The planning process for the 2014 Wyoming Statewide Comprehensive Outdoor Recreation Plan is similar to the preceding plans of 1990, 1995, 2003 and 2009. A four-step process was employed in the development of this plan:

1. Collect information on facilities/opportunities and outdoor activities from providers and users
2. Analyze the results for patterns and trends
3. Identify issues
4. Establish outdoor recreation goals for the next five (5) years

Surveys of both Wyoming recreation providers and users were conducted to gather information about outdoor recreation opportunities, facilities, programs, uses, needs and desires. Based on the results of these surveys, direction for providing outdoor recreation funds can be established.

Providers’ Survey

The providers’ survey was an e-mail survey of 10 public recreation organizations throughout Wyoming. The recreation providers provide a cross section of community sizes and geographic distribution. This included the three largest municipalities and a mix of smaller to medium sized municipalities responsible for creating, maintaining and managing recreation facilities, opportunities and programs.

The providers’ survey has five main parts (Appendix B). The first part asked questions about the types of recreation facilities within the community and the condition of these facilities. Part two determined the main issues facing the recreation provider. Nine main issues were identified and the respondents were asked to rank these issues in terms of importance (1-highest importance, 10-the least importance). The third portion of the questionnaire was a series of questions that required the respondents to signify their acceptance of a statement, ranging from strongly agree to strongly disagree. These phrases or statements focused on the importance of recreation and/or recreational opportunities within the respective communities. This was done in an attempt to determine the importance of recreation to the community. Part four concentrated on obtaining background information on the community’s recreation expenses, programs and future needs. Part five concentrated on obtaining background information on general recreation related issues and the role of the Land and Water Conservation Fund.
Facilities and Their Condition

Providers were asked to produce a list of recreation facilities and an assessment of their condition (ranked between good, fair and poor). All of the survey respondents have developed parks that are identified as being in good condition.

By far the most common outdoor recreation facility provided by the responding communities is picnic facilities. The second most common facility identified by respondent communities were outdoors playgrounds. The most popular court is horseshoe pits, tennis courts and basketball courts. Soccer is the most dominant type of field in the communities, followed by baseball and softball. No original facilities showed up on the survey, but several newer types of recreation facilities seem to be gaining in popularity. These include spray parks, remote control parks and dog parks. Several other facilities appear to be gaining in popularity; every community reported having a skateboard park and several communities reported having disc golf courses, and indoor ice rinks.

Other facilities include: rodeo arenas, golf courses, camping areas, BMX tracks and trails. In typical Wyoming fashion eight communities reported having a rodeo arena. No community with less than 10,000 people reported having an 18-hole golf course. All of the golf courses were reported as being in very good condition. Three communities reported having camping. All three of these communities have both tent and RV camping. None of the larger communities in the state provide camping.
Provider Issues

Eight major issues were identified and each respondent was asked to rank them for their specific community (1-most important, 10-least important). The following is how the issues ranked with the aggregate average in parenthesis:

2008

- Additional Facilities (2.9)
- Additional Personnel (4.1)
- Maintenance Money (4.5)
- Restoration of Existing Facilities (4.5)
- Trails & Greenways (4.7)
- Program Expansion (4.9)
- Land Acquisition (5.8)
- Community Support (6.3)

2013

- Additional Facilities (2.4)
- Restoration of Existing Facilities (2.7)
- Maintenance Money (3.2)
- Community Support (3.3)
- Program Expansion (3.4)
- Additional Personnel (3.8)
- Trails & Greenways (4.3)
- Land Acquisition (6.8)

In 2013, the top two issues pertain to increasing facilities and restoring existing facilities. This reflects there is a need to provide additional facilities for the public. The next highest response related to maintaining existing facilities. Many of the existing facilities were built in the early to mid-1970s during the height of LWCF funding and have now exceeded their effective use life.

The next tier of responses relate to increasing community support, expanding programs and personnel. While facilities appear to be the most significant issue, this demonstrates working with the community is important. Finally, land acquisition ranked considerably below the other issues. This could indicate the communities feel they have enough land for recreation, or they are trying to maintain what they have before they acquire new land.
Community Recreation Issues

Providers were asked to state their level of agreement with a series of statements related to the role recreation plays in their community. The responses were assigned points from 1 point for strongly agree to 5 points for strongly disagree. We then did a weighted average for each question.

**2008**

1. Most citizens in my community believe recreation is important to the community’s quality of life. (1.4)

2. Basic opportunities at public parks and open space areas, such as walking and picnicking, should be provided by general tax dollars without additional user fees. (1.4)

3. Open space, parks and recreational opportunities over the last ten years have enhanced my community’s chances for economic development. (1.8)

4. The elected officials in my community believe recreation is a high priority for the community’s quality of life. (1.9)

5. Outdoor recreation in my community should be a joint partnership between local government, business leaders and private interests. (2.3)

6. There is greater demand for public organized activities in our community than individualized non-structured activities. (2.4)

7. User fees should cover the direct cost of high maintenance recreation facilities. (2.5)

**2013**

1. Open space, parks and recreational opportunities over the last ten years have enhanced my community’s chances for economic development. (1.9)

2. The elected officials in my community believe recreation is a high priority for the community’s quality of life. (2.0)

3. Outdoor recreation in my community should be a joint partnership between local government, business leaders and private interests. (2.0)

4. Most citizens in my community believe recreation is important to the community’s quality of life. (2.6)

5. Basic opportunities at public parks and open space areas, such as walking and picnicking, should be provided by general tax dollars without additional user fees. (2.8)

6. There is greater demand for public organized activities in our community than individualized non-structured activities. (2.8)

7. User fees should cover the direct cost of high maintenance recreation facilities. (3.3)
Recreation Facilities and Needs

The economic impact of having recreation facilities and community support are the number one issues cited. This could reflect the economic decline since 2008 and the need to justify providing funding and staffing for recreation. Recreation providers feel recreation is important to their community, but seem more inclined to work with non-government entities to provide recreation opportunities. This corresponds very closely with what the recreation users voiced in their survey. Similar to 2008, none of the statements ranked real low, but there is definitely less support for user fees and structured activities. This may be because Wyoming has a population and setting that supports unstructured outdoor activities. Fee based and structured activities may be more popular in metro areas.

Community Financial Information

The community financial information section provided basic statistics on three key financial elements: what are the estimated costs associated with maintenance and repair for the next five years; what are the estimated costs for new construction for the next five years and what are the estimated costs for trail and green space development over the next five years. We averaged the responses between communities that have less than 10,000, communities with between 10,000-25,000 people and communities with more than 25,000 people.

Table 3.1.

<table>
<thead>
<tr>
<th>Community Size (people)</th>
<th>Maintenance/Repair</th>
<th>New Construction</th>
<th>Trail/Green Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 10,000</td>
<td>$271,750</td>
<td>$70,000</td>
<td>$190,000</td>
</tr>
<tr>
<td>10,000—25,000</td>
<td>$1,500,000</td>
<td>$1,750,000</td>
<td>$1,275,000</td>
</tr>
<tr>
<td>Over 25,000</td>
<td>$4,625,000</td>
<td>$3,000,000</td>
<td>$1,925,000</td>
</tr>
</tbody>
</table>

For communities with less than 10,000 people estimated costs for maintenance ranged from less than $37,000 for the Town of Pine Bluffs to $600,000 for the Town of Saratoga. Construction costs ranged from less than $0 for the Town of Big Piney to $178,000 for the Town of Pine Bluffs. Estimated costs for trails and green spaces ranged from $0 for the Town of Saratoga to $250,000 for the Town of Big Piney (Table 3.1).

For communities between 10,000 and 25,000 people, estimated costs were fairly consistent.

For communities with over 25,000 people estimated maintenance costs ranged from $2,500,000 for the City of Laramie to $7,500,000 for the City of Cheyenne. New construction costs ranged from $6,000,000 for
Recreation Facilities and Needs

the City of Casper to $500,000 for the City of Laramie. Estimated costs for trails and green spaces ranged from $200,000 for Campbell County to $5,000,000 for the City of Cheyenne. These financial numbers have declined since 2008. This could reflect the decline in the economy since the last survey.

Recreation Related Needs and the Role of the Land and Water Conservation Fund

In 2008, there were three different types of needs for communities: expansion of existing community recreation facilities (community centers); expansion of existing outdoor facilities (fields, courts, playgrounds); and development of totally new facilities. The expansion of outdoor facilities focused primarily on playground and gathering areas. Development of sports fields was the second most common response with communities wishing to increase their capacity; especially soccer and baseball fields.

In 2013, the most common responses consisted primarily of expansion of existing outdoor facilities (softball fields, batting cages, court, soccer fields, horse shoe pits, providers also expressed a need for more centers did not rank very high on the intensive facilities and this could be a Additionally, several communities have the last survey. In 2008, responses were energy development areas and those In 2013, this difference is not nearly as the slowdown of energy development in

primarily of expansion of existing outdoor disk/Frisbee golf, outdoor volleyball and shooting complexes). Recreation picnic shelters and trails. Community 2013 survey. These are large capital reflection of the economic downturn. gotten new community centers since greatly influenced by communities in communities without energy resources. great. Again, this could be a reflection of several areas of the state.

All ten of the communities indicated they would like to see increased funding for the LWCF Program. In the past, the Program has been an important part of their recreation system development

Users’ Survey • Introduction

Survey Design and Administration

In March of 2013, a contract was executed between the Division of Wyoming State Parks, Historic Sites & Trails (SPHST), and the Wyoming Survey & Analysis Center (WYSAC) of the University of Wyoming to conduct a statewide mail survey of Wyoming citizens (Appendix A). The purpose of the survey was to capture the opinion of Wyoming citizens concerning outdoor recreation issues for the development of the 2014 Wyoming Statewide Comprehensive Outdoor Recreation Plan. Specifically, the survey was to identify recreation needs of Wyoming residents and Wyoming visitors in order to responsively provide and administer outdoor recreation resources.

The survey was administered by mail, with the option to complete the survey online, between April 18 and June 30, 2013. A total of 898 completed surveys were returned. A random sample of this size provides a margin of error of around plus or minus three percentage points with 95 percent confidence. For this reason, it is appropriate throughout this report to refer to results as applying to Wyoming residents (i.e.,
survey results reflect the opinions and attitudes of Wyoming residents as a whole, within the stated margin of error of plus or minus three percentage points with 95 percent confidence, and not simply survey respondents). From an original mailing to 4,000 addresses in Wyoming, mailings to 577 addresses were returned to us as undeliverable by the United States Postal Service. This left us with a sample of 3,417 households. We received a total of 898 completed surveys by the above cutoff date, resulting in a response rate of approximately 26.3 percent. Figure 3.1 shows the distribution of users responding to the survey.

**Data Compilation and Analysis**

Surveys mailed back to WYSAC go through a highly controlled process to minimize any possible data-entry error. The surveys are scanned by WYSAC’s high-volume scanners. The scanning software alerts for verification if there is anything uncertain about an entered response choice. These issues are evaluated and resolved by WYSAC. All handwritten responses to open-ended questions are transcribed and verified, and a survey data file is then created using the Statistical Package for Social Sciences (SPSS) for analysis. Online completions of the survey were exported from WYSAC’s web platform into an SPSS data file. Data from the online questionnaire and the paper survey were merged into one master data set. These data were analyzed using SPSS, and results from these analyses are contained in the remainder of the report (WYSAC 2013).

For the providers’ and users’ surveys, frequency counts and basic statistics were compiled on all questions and are available at State Parks Historic Sites & Trails.
Survey Results

The users’ survey was divided into four (4) main components:
1) which activities users participate in;
2) how important is outdoor recreation;
3) recreation related issues; and
4) respondent background information.
User Activities and Facilities

A listing of 39 activities were identified; the respondents then selected if either they or members of their household participated in any of these activities during the past year. The top six activities identified in the 2008 survey and 20013 survey are listed below:

2008
- Driving for pleasure/sightseeing by auto (65%)
- Viewing natural features such as scenery, flowers, etc. (64%)
- Hiking or walking (61%)
- Viewing wildlife, birds, fish, etc. (61%)
- General/other-relaxing, hanging out, escaping crowds, noise, etc. (60%)
- Picnicking and family day gatherings (58%)

2013
- Driving for pleasure/sightseeing by auto (69.5%)
- Viewing natural features, scenery, flowers, etc. (67.8%)
- Picnicking and family day gatherings (63.6%)
- Viewing wildlife, birds, fish, etc. (62.7%)
- General/other: relaxing, hanging out, escaping crowds, noise, etc. (62.7%)
- Hiking or walking (61.5%)

The 2013 survey results are very consistent with those from 2008. The top six activities identified in both surveys are the same. The order of activities was slightly different in 2008, with the top two remaining the same. It is encouraging that the participation rate for all of these activities increased. The biggest increase was in picnicking and family day gatherings rising from 58% to 63.6%. This could be reflective of the changing demographics of the state.

The quality of facilities or opportunities available in a state influences use by its citizens; hence, more pleasant experiences and more opportunities for experiences will result in more use. The positive perception of an area or facility is important in having citizens repeat the experience. The five activities for which available facilities were rated most positively in 2008 and 2013 are:

<table>
<thead>
<tr>
<th>2008</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backpacking, camping in roadless areas</td>
<td>Viewing natural features, scenery, flowers, etc. (1.76)</td>
</tr>
<tr>
<td>Viewing wildlife, birds, fish, etc.</td>
<td>Backpacking, camping in roadless areas (1.79)</td>
</tr>
<tr>
<td>Viewing natural features, scenery, flowers, etc.</td>
<td>Viewing wildlife, birds, fish, etc. (1.82)</td>
</tr>
<tr>
<td>Hiking or walking</td>
<td>Driving for pleasure/sightseeing by auto (1.82)</td>
</tr>
<tr>
<td>Rodeo Activities</td>
<td>General/other: relaxing, hanging out, escaping crowds, noise, etc. (1.83)</td>
</tr>
</tbody>
</table>

Not surprisingly, in 2013 the facilities correspond very closely to the activities people identified with high participation rates.
Facilities or opportunities for all five of the top responses in both surveys are generally provided by federal, state or municipal governments.

The quality of the following facilities or opportunities did not receive a favorable rating:

**2008**
- Paved skating areas/skate parks
- Ice skating (outdoors)
- Road bicycling
- Dog parks

**2013**
- Dog parks (2.96)
- Golf (miniature) (2.85)
- Disc golf (2.84)
- Skateboarding or in-line skating (2.79)
- BMX bicycling / Trails (2.73)
- Road bicycling (2.66)

“Not surprisingly, in 2013 the facilities correspond very closely to the activities people identified with high participation rates.”

### Importance of Outdoor Recreation

In 2008 and 2013 the first question in the user survey was:

*Please tell us how important or unimportant public parks and public recreation areas are to your quality of life?*

Respondents were given the option of answering: — Very Important; — Important; — Unimportant; — Very Unimportant; — Don’t Know. The following percentage of respondents answered Very Important or Important:

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>93.7%</td>
<td>91.5%</td>
</tr>
</tbody>
</table>

Clearly the public perceives recreation to be a very significant part of their lives and their community.
Recreation Related Issues

In 2003 we gathered information about recreation related issues. We had users rank a set of eight statements related to recreation related issues. In 2008 we repeated this strategy with one minor change; we added two additional statements. The following is the list of statements, followed by the percentage of respondents that answered Strongly Agree or Agree.

**2008**

1.) Having recreation areas close to my home improves my quality of life. (83%)
2.) Outdoor recreation in my community should be a joint partnership between local government, business leaders and private interests. (68%)
3.) User fees should cover the direct cost of high maintenance recreation facilities. (57%)
4.) The state’s current water recreation areas need to be expanded. (55%)
5.) Motorized vehicles should have more public recreation space than is currently available to them. (38%)
6.) The state should provide support and assistance to local organizations for expanding their recreation facilities. (58%)
7.) A source of long-term consistent funding for recreation should be provided at the state level. (69%)
8.) Efforts should be made to acquire additional recreation lands from individuals or other entities interested in selling or donating land. (68%)
9.) The demand for publicly organized activities in our community is greater than the demand for individualized non-structured activities. (23%)
10.) Basic opportunities at public parks and open space areas, such as walking and picnicking, should be provided by general tax dollars without additional user fees. (70%).

**2013**

1.) Having recreation areas close to my home improves my quality of life. (82%)
2.) New or additional partnerships should be developed between the private sector and local, state and federal agencies to develop and maintain outdoor recreation opportunities. (67%)
3.) User fees, special taxes or license fees should be used as an alternate source of funding for outdoor recreation facilities to help defer operational costs. (56%)
4.) The state’s current water recreation areas need to be expanded. (51%)
5.) Motorized vehicles should have more public recreation space than is currently available to them (31%)
6.) The state should provide support and assistance to local organizations for expanding their recreation facilities. (52%)
7.) A source of long-term consistent funding for recreation should be provided at the state level. (62%)
8.) Efforts should be made to acquire additional recreation lands from individuals or other entities interested in selling or donating land. (61%)
9.) The demand for publicly organized activities in our community is greater than the demand for individualized non-structured activities. (24%).

10.) Basic opportunities at public parks and open space areas, such as walking and picnicking, should be provided by general tax dollars without additional user fees. (69%).

**New in 2013**

11.) For non-motorized recreation, there should be more public space available to them. (53%)

The responses to Statement #1 indicates a preponderance of people believe that having a recreation facility in close proximity to their home improved their quality of life. This corresponds quite well with another statement asked in the survey as to the importance of public parks and facilities in their quality of life. For this statement, in the 2008 and 2013 surveys over 90% percent responded that public parks and recreation areas were either very important or important to their quality of life. Thus, being close to parks and recreation areas is very important and improves their quality of life.

In both surveys, statement #2 demonstrates that approximately two-thirds of the public feels government agencies should be partnering with private industries to develop and maintain recreational opportunities. The State should explore innovative ways to increase their contribution and that of potential private recreation providers.

Statement #3 shows that approximately half of the public feels user fees should be used to offset the cost of operating and managing recreation facilities.

Statement #4 indicates that approximately half of the public supports expansion of the state’s water-based recreation opportunities.

Statement #5 illustrates motorized verses non-motorized recreation is likely the most divisive outdoor recreation issue. Providing facilities for and managing motorized recreation use may be the most challenging recreation issue for public land managers.

Statements #6 and #7 illustrate the public’s interested in having the State provide consistent long-term funding for recreation, although support has dropped off some over the last 5 years.

Statement #8 illustrates the public is interested in expanding recreation areas, although, similar to statement #6 and #7, the percentage of respondents in favor decreased from 2008 to 2013.

Statement #9 illustrates the public is looking for individualized non-structured recreation activities.

Statement #10 illustrates the public feels their governments should provide public parks and opportunities for passive recreation. These types of facilities have been typically provided by government entities and the public wants to see this continue. Thus, it is imperative that recreation be a strong component in community development and administration. To have a strong recreation component requires the work of public agencies to provide the basics for recreation. However, Statement #2 illustrates that the private sector should be a significant partner in providing joint effort recreation opportunities.

Statement #11, new for the 2013 survey, shows that over half of the public is interested in and supportive of non-motorized recreational pursuits.
Recreation and the Quality of Life

To determine the importance of recreation to the quality of life in each community, the respondents were asked to rank (1-most important, 7-least important) a listing of seven basic community elements. The seven basic community elements were: education, employment opportunities, healthcare, housing, recreation opportunities, retail opportunities and safety. The following list provides an indication of recreation's importance to quality of life. The numbers in parentheses represent the average ranking for each factor:

**2008**
- Healthcare (3.0)
- Employment Opportunities (3.1)
- Education (3.7)
- Housing (3.7)
- Retail Opportunities (4.0)
- Recreation Opportunities (4.7)
- Safety (5.9)

**2013**
- Employment Opportunities (3.06)
- Healthcare (3.35)
- Housing (3.38)
- Education (3.53)
- Safety (3.96)
- Recreation Opportunities (4.71)
- Shopping Opportunities (5.90)

Between the 2008 and 2013 user surveys, the measure of recreation's importance to quality of life has remained consistent. The first and second most important issues switched rankings and the third and fourth issues also switched ranking.

User Identified Recreation Related Issues

Each respondent was asked to list their top three issues or concerns for outdoor recreation in Wyoming. Respondents brought up many issues in this section including beetle kill trees, invasive species, overdevelopment, crowding, government interference, low water levels, etc. The following list represents the most common responses in order of importance to respondents:

<table>
<thead>
<tr>
<th>TOP ISSUES/CONCERNS FOR OUTDOOR RECREATION IN WYOMING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2008</strong></td>
</tr>
<tr>
<td>- Concern about ATV/Snowmobile Use</td>
</tr>
<tr>
<td>- Support for ATV/Snowmobile Use</td>
</tr>
<tr>
<td>- Public land usage</td>
</tr>
<tr>
<td>- Cost</td>
</tr>
<tr>
<td>- Maintenance</td>
</tr>
<tr>
<td><strong>2013</strong></td>
</tr>
<tr>
<td>- Public Land Access</td>
</tr>
<tr>
<td>- Concern about ORV/Snowmobile Use</td>
</tr>
<tr>
<td>- Development of more Parks/Facilities</td>
</tr>
<tr>
<td>- Cost</td>
</tr>
<tr>
<td>- Maintenance</td>
</tr>
</tbody>
</table>
Recreation Facilities and Needs

There were some dramatic changes in public concerns expressed in the survey between 2008 and 2013. Concern about public access and preservation of public lands was by far the concern expressed by most respondents. As the Rocky Mountain West increases in population, new residential and commercial development will change the outdoor experience. Respondents were concerned with the extent and location of new developments, and their ability to access their favorite outdoor spaces. The second most common response was concern about the use of motorized vehicles on public lands. Respondents felt public land use should be managed to minimize conflicts, yet have convenient facilities that complement uses. These responses can allude to the differences between motorized and non-motorized uses. There are definitely differing views on the use of motorized vehicles on public lands, but the public seems more concerned with access to and protecting public lands. Land managers will need to continue addressing the concerns of motorized and non-motorized users. The third most common response can be summarized as the public wanting more and better recreation facilities near where they live and work. Next, respondents expressed concerns about the rising costs of recreating, including fuel costs, equipment costs and user fees. Finally, respondents are concerned with maintenance of recreation facilities, e.g. keeping them clean, dependable, and safe.

Several issues that received multiple comments, but were not in the top five responses included; access for people with disabilities, overcrowding of parks and campgrounds, lack of funding to maintain existing and develop new facilities, preservation and protection of the land, and support for ORV and snowmobile use.

Three questions related to why people did not utilize existing recreation facilities or opportunities. The main reasons why people do not take advantage of recreational opportunities were:

<table>
<thead>
<tr>
<th>2008</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Not enough time/Too busy</td>
<td>• Not enough time/Too busy</td>
</tr>
<tr>
<td>• Too crowded</td>
<td>• Too crowded</td>
</tr>
<tr>
<td>• Too expensive</td>
<td>• Too expensive</td>
</tr>
<tr>
<td>• Too far to travel</td>
<td>• Too far to travel</td>
</tr>
<tr>
<td>• Physical impairment</td>
<td>• Not aware of facilities/programs available</td>
</tr>
<tr>
<td>• Not aware of facilities/programs available</td>
<td>• Physical impairment/Accessibility &amp; Not Interested (tied)</td>
</tr>
</tbody>
</table>

The reasons people do not recreate have changed very little. “Not aware of facilities/programs available” moved from sixth most important to fifth most important and “Physical impairment/ Accessibility” fell to sixth most important and was tied with “Not interested.” Many of the reasons provided for not recreating correspond to concerns expressed about outdoor recreation in Wyoming.

The main reasons people do not participate in outdoor recreation relate to personal conflicts or issues with available recreation facilities. Personal conflicts cannot be resolved by the recreation provider; however, funding can be used to develop facilities closer to users and expand facilities to alleviate crowding. These changes can mitigate several of the main reasons people do not participate in outdoor recreation activities.
Respondents’ Profile

- According to the U.S. Census Bureau, 47.1% of Wyoming residents are between the ages of 18 and 44; 26.8% of respondents to this survey fall into that same age group. The majority of respondents (51.1%) are from the ages 35-64.

- The employment status of almost half of the respondents (47.9%) is full time employed, followed by 34.2% of respondents reporting that they are retired or disabled. Well over half of respondents report that they are married (64.7%), while 12.7% report that they are single.

- A new question was added in 2013 to identify how long respondents to the survey have lived in Wyoming. A large majority (80.1%) of respondents indicate they have lived in Wyoming for 11 years or more. The mean number of years respondents have lived in Wyoming is 33.8.

- A large majority of respondents were in one-person or two-person households (69.7%). A majority of households (91.2%) report that there are either one or two adults living in the household, with a majority of respondents indicating that there are no children living in the household (61.5%).

- Almost 15% of respondents say there is 1 child living in the household, while 13.5% report that there are two children living in the household. Of those with children, there is an average of 2.11 children per household.

- A majority of survey respondents report their race to be White, not Hispanic (91.2%), while 7.2% say their race is White, Hispanic.

- Just over half of survey respondents are male (52%), while 48% are female.
Trail opportunities in Wyoming are many and diverse. Outdoor recreation has been an important part of the State’s way of life for many years. Participation in outdoor recreation in general and trail recreation specifically has grown dramatically in recent decades. Wyoming’s trails are located in areas ranging from deep river canyons to high desert plains, to high mountain crags and alpine meadows, to community greenways. Hikers and backpackers, bicyclists, equestrians, cross-country skiers and snowshoers, snowmobilers, and off-road recreational vehicle (ORV) riders all use Wyoming’s statewide system of trails. Wyoming has about 10,500 miles of trails managed by a variety of agencies. Nearly 8,000 miles are managed primarily as summer-use trails while over 2,700 miles are managed primarily for snowmobiling and cross-country skiing during the winter season. Additionally, there are well over 50,000 miles of roads in Wyoming open for use by ORV riders.

**Definitions**

There are several common terms that will be used throughout this plan. To help the reader better understand these terms, a list of definitions has been provided. These definitions are not intended as the sole meanings for the terms, but instead give the proper context intended for use within this document.

**Trail** – A regularly maintained transportation and/or recreation pathway typically used by hikers, cross-country skiers, equestrians, bicyclists, and/or motor vehicles less than 50 inches wide.

**Road** – A regularly maintained transportation and/or recreation route typically used by motorized vehicles greater than 50 inches wide.

**Wyoming State Trails Advisory Council (Trails Council)** – A ten-member recreational trail advisory committee appointed by the Governor to advise the Department of State Parks and Cultural Resources on the management of recreational trails within Wyoming. Members represent both motorized and non-motorized recreation users groups and are appointed for 4-year terms to represent specific users including hiking, bicycling, equestrian, cross-country skiing, snowmobile, ATVs and off-highway motorcycles.

**Federal Highway Administration (FHWA)** – The federal agency within the U.S. Department of Transportation that administers the Recreational Trails Program.

**Recreational Trails Program (RTP)** – A federal grant program funded by the federal fuel taxes paid on gasoline used by off-highway vehicles, including snowmobiles, ATVs, off-highway motorcycles and four-wheel drive light utility vehicles. Monies are distributed to states based upon a formula where half goes equally to all states and the other half goes to states based upon estimates of their off-highway fuel use. States use these funds for grants to local, state and federal agencies and to qualifying private organizations for the purpose(s) of: trail-related education, maintenance of existing trails, trail construction and maintenance, new trail construction, development of trail-side/trail-head facilities, and acquisition of easements or property for trails. By mandate, 30% of the funds must be used for motorized trails, 30% for non-motorized trails, and 40% for diversified trail use. The program requires a 20% local match.

**Land & Water Conservation Fund (LWCF)** – A federal grant program that provides 50% matching grants for the development of public outdoor recreation activities, which can include trails. Funding is derived from revenues associated with Outer Continental Shelf mineral receipts. LWCF regulations require states to have a Statewide Comprehensive Outdoor Recreation Plan.
Off-Road Recreational Vehicle (ORV)

Type 1: A recreational vehicle primarily designed for off-road use which is fifty (50) inches or less in width and has an unladen weight of one thousand one hundred (1,100) pounds or less;

Type 2: Any unlicensed motorcycle which has an unladen weight of six hundred (600) pounds or less and is designed to be ridden off road with the operator astride upon a seat or saddle and travels on two (2) tires;

Type 3: Any multi-wheeled motorized vehicle not required by law to be licensed and is designed for cross-country travel on or over land, sand, snow, ice or other natural terrain and which has an unladen weight of more than nine hundred (900) pounds.

Snowmobile – Any mechanically driven vehicle of a type that utilizes sled type runners, or skis, or any endless belt tread or combination of these, designed primarily for operation over snow.

State Trails Advisory Council

The Wyoming State Trails Advisory Council has been an integral part of this planning process. The Trails Council is a ten-member board appointed by the Governor to advise the State Trails Program within the Wyoming Department of State Parks and Cultural Resources regarding trail policies, functions and priorities. Its duties include a statutory requirement to advise the Department regarding priorities for managing the Off-Road Recreational Vehicle (ORV) Fund. It also advises regarding application guidelines and distributions of grant funds from the federal Recreational Trails Program (RTP). The Council evenly represents both motorized and non-motorized trail users. Additionally, the ten positions represent specific trail use activities such as snowmobiling, ATV’s, off-highway motorcycles, equestrians, hiking, bicycling, cross-country skiing, or multiple uses. Therefore members are in-touch with the trail user groups they represent and are able to provide valuable information for Council operations as well as this planning process.

History

The Wyoming Department of State Parks and Cultural Resources (SPCR) was given the authority to collect fees and oversee the snowmobile trails program in 1984 by W.S. 31- 2-403(e)(i) and the ORV trails program in 2001 by W.S. 31-2-702(a). The Wyoming State Trails Program (WSTP), a section within SPHST, was given the task of managing these programs and works in close cooperation with federal agencies to provide motorized trails across the state. Non-motorized trails are managed by state, local and federal agencies across Wyoming.

Prior planning documents for Wyoming’s trails include the 1985 Wyoming State Trails Plan and brief chapters focusing on trails in prior SCORP documents. Since development of the WSTP as an individual program in 1995, there have been a series of issues, goals and objectives identified for the program and outlined in the 2004 Wyoming Statewide Trails Plan, Vision 2010 Wyoming State Trails Program Plan, and most recently in the Wyoming State Trails Program Long-Range Plan 2012-2021. The 1995, 2003 and 2009 SCORP all included a summarized list of general strategies for the future of the statewide trails system at that time. Over this time, clear and concise goals and objectives were also developed to help provide Wyoming’s trail users with outstanding recreational trails opportunities and experiences.
Current Conditions

Ninety-two percent (92%) of designated trails in Wyoming are located on federal lands while only one percent (1%) are located on state lands. Consequently the WSTP is quite limited in its ability to directly control rule-making, build new trails, or direct management policies for these trails. Instead, the WSTP works to facilitate optimum recreational benefit of trail users through RTP grant distribution, motorized trail permit programs, and working collaboratively with federal agencies who are the actual land managers for most trails.

Current trail uses include snowmobile, ORV, hiking, equestrian, bicycling, mountain biking, backpacking, running, hunting access, walking, snowshoeing and cross-country skiing. Motorized use is allowed on 18% of the total number of trails during winter but only 11% of trails during summer (Nagler et al., 2013). Non-motorized uses are allowed on all trails year-round.

Over 98% of the funding for the WSTP comes directly from motorized uses. Thus motorized recreation users are currently financing essentially all operating costs of the program. Non-motorized trails and pathways across the state are primarily funded by the managing federal, state or local agency’s budget, or through limited assistance from RTP or Transportation Enhancement Activities - Local (TEAL) grants.
Trails

There are approximately 2,160 trails in Wyoming stretching over 10,472 miles. The primary land management agencies having jurisdiction over the trails were previously identified in this SCORP as recreation resource providers and include the U.S. Forest Service (USFS), the National Park Service (NPS), the Bureau of Land Management (BLM), the State of Wyoming and local entities, such as towns, cities, and counties. Almost 73 percent of Wyoming’s trails are located on USFS lands, while only 1.1 percent are located on state lands.

The winter season has the highest percentage of the number of miles available for use, with 92.5% of trails available for use during this season while spring has the lowest percentage available for use with 78.8%.

River Trails

River trails are those trails that include access points to river destinations for recreation such as white water rafting or fishing. None of these trails are currently under the supervision of the WSTP. Federal agencies manage 93.6% of these trails, with those on State lands being managed by the Wyoming Game and Fish Department.

ORV Trails

The 2013 Statewide Trails Inventory (Nagler et al., 2013) identified 245 trail segments totaling 1,379 miles which are managed for ATV and off-road motorcycle use. This represents 13.3% of total trail miles in the state, although other trail uses are also simultaneously allowed on these trails.

The WSTP has worked diligently with agencies to enroll trails and roads for ORV riding since the State ORV program was implemented in 2002. There are currently 6,215 miles of trails and roads (625 miles of trails and 5,590 miles of roads) which have been enrolled on public lands (primarily Forest Service). [Note: Inventory and ‘enrollment’ numbers for trails differ due to the Inventory’s ‘50-inch’ trail definition]. In addition over 50,000 miles of BLM and local county roads have been enrolled to allow ORV riders road access through the state ORV sticker versus needing a license plate.

The ORV permit program provides self-supporting funding for the State ORV Trails Program and has quickly become a success while growing to over 56,000 permits sold annually in less than 10 years of existence. The continuously growing high ORV sales rate illustrates the popularity of ORV recreation, along with the demand for proper planning and management to provide adequate opportunities to meet the growing needs of ORV recreationists.
The 2012 Wyoming Comprehensive Off-Road Vehicle Recreation Report (Nagler et al., 2013) provides valuable information regarding the characteristics and spending habits of resident and non-resident ORV riders, along with trail management priorities for this user group. In 2012 ORV users accounted for 2.9 million use days that generated $244.2 million of economic activity for the Wyoming economy. Residents spent an average of 38.6 days riding ORVs while non-residents averaged 17.6 days riding ORVs in Wyoming. Residents traveled an average of 4.5 hours per day on their ORV while riding 29 miles while non-residents spent an average of 5.8 hours per day while traveling 38 miles. ORV riders stated their top priorities for use of ORV registration/user fees include: new trail construction, trail maintenance, planning for new trails, trail signing, and trail maps. Respondents to the 2012 survey also indicated their most important future priorities include: more roads designated open to ORVs, more designated ORV trails, accurate and easy to read trail maps, more designated open riding areas, longer length of trail, loop trails, signage on trails, and trails that are challenging.

State ORV funds are used to provide Trail Ranger and Maintenance, Construction and Planning (MCP) grants to federal agencies. The State ORV Program provides trail maps and user ethics information to trail users and agencies. Its personnel also provides ORV trail maintenance, signing and construction across the state through the State Trails Crew. The Program routinely participates as cooperators in various Federal land management planning processes to help facilitate ORV riding opportunities and access.

**Snowmobile Trails**

The 2013 Statewide Trails Inventory (Nagler et al., 2013) identified 378 trail segments totaling 2,751 miles which allowed snowmobile use. This represents 26.3% of total trail miles in the state although other trail uses are also simultaneously allowed on these trails.

The State Snowmobile Program is managed by the WSTP and maintains 2,575 miles of snowmobile trails. All trails are signed, with 1,905 miles being regularly groomed and the remaining 670 miles maintained in an ‘ungroomed’ status. The Program also provides statewide trail maps along with snow removal for parking areas and safety shelters in some riding areas.
The success of the Snowmobile Program depends heavily on collaboration with federal agencies where most trails are located, the snowmobile permit program, and support from the Wyoming State Snowmobile Association and its local clubs. The permit program provides self-supporting funding for the State Snowmobile Trails Program with current annual sales of about 34,000 permits. The Snowmobile Program has also depended heavily upon RTP grant funding to provide trail grooming on snowmobile trail systems across the state. Trail grooming is accomplished through private contractors in 9 areas while 7 areas are groomed by seasonal State employees.

The Program routinely participates as cooperators in various Federal land management planning processes to help facilitate snowmobile riding opportunities and access. Local snowmobile club members have contributed many man-hours over the years to help establish the network of snowmobile trails. The vast majority of trail miles maintained under this program are located on U.S. Forest Service lands, with a few short segments located on private or BLM lands. This cooperative effort works to the benefit of snowmobilers and the general public, exemplifying a successful, active partnership between the federal government, state government, private landowners, volunteers, and the public users.

The 2011-2012 Wyoming Comprehensive Snowmobile Recreation Report (Nagler et al., 2012) provides valuable information regarding the characteristics and spending habits of resident and non-resident snowmobile riders, along with trail management priorities for this user group. Snowmobile riders accounted for 543,000 use days during the 2011-2012 winter season that generated $175.5 million of economic activity for the Wyoming economy. Residents spent an average of 20 days riding snowmobiles while non-residents averaged 11 days of snowmobiling in Wyoming. Residents traveled an average of 5.7 hours per day on their snowmobile while riding 49 miles, while non-residents spent an average of 7 hours per day snowmobiling while traveling 58 miles. The survey found that 88 percent of resident snowmobilers and 96 percent of non-resident snowmobilers were either ‘very satisfied’ or ‘satisfied’ with their Wyoming snowmobile experience. Snowmobile riders stated their top priorities for use of snowmobile registration/user fees include: trail grooming and maintenance, parking area construction and snow removal, and trail signage.

The Snowmobile Program, initially established in 1984, has grown to be hugely popular and extremely successful over the past several years. Non-resident snowmobilers typically travel long distances to snowmobile in Wyoming and routinely make up half or more of Wyoming’s total snowmobile permit sales. The 2011-2012 snowmobile report shows the average non-resident travels 11 hours and 674 miles from their home to snowmobile in Wyoming, and that Wyoming is an attractive snowmobiling destination due to its good snow conditions and off-trail powder. This popularity is affirmed by the fact six of Wyoming’s twelve snowmobile trail systems are routinely ranked in the ‘Top 10’ western snowmobiling areas by Sno-West magazine, with the Continental Divide Snowmobile Trail regularly garnering either the #1 or #2 spot. The largest amount of nonresident snowmobile use typically comes from people who live in Minnesota, Colorado, Iowa, South Dakota, Montana, Wisconsin, North Dakota, Nebraska, Utah and Idaho – in that order.

Snowmobile trails are also heavily used by snowmobile outfitters who provide guided trips for their clients. This use accounted for $21.3 million in trip expenditures within Wyoming during the 2011-2012 winter season. Snowmobile outfitter clients averaged 10.1 days per year snowmobiling in Wyoming, riding an average of 6.4 hours per day while traveling 69 miles. On average, outfitter clients traveled 12.8 hours and 1,014 miles from their home to snowmobile in Wyoming.
Non-Motorized Recreation Trails

While all of the 10,472 miles of trail in Wyoming are available for non-motorized recreation, over 8,500 miles (81%) are managed for hiking while over 6,200 miles (59%) are managed for equestrian use. (2013 Wyoming Statewide Trails Inventory, Nagler et. al, 2013) Other major uses for these trails include cross country skiing, snowshoeing, and bicycling.

Recreation Providers Survey
- Most Trails Were Ranked in “Good” Condition
- Equestrian (Horse Trails) Were Ranked in “Good” Condition

Recreation Users Survey
- 61.5% of respondents participate in hiking or walking
- Trail related opportunities, such as nature viewing and wildlife viewing had some of the highest participation rates in the survey
- Trail related opportunities, such as cross-country skiing and mountain biking have smaller participation rates but continue to grow in popularity.

Since 92% of all trails are located on federal lands, most of Wyoming’s non-motorized trails are managed by federal agencies. Since the location of the trail determines who is primarily responsible for trails’ operational costs, (i.e. trails located on USFS lands are maintained by the USFS), partnerships with federal agencies are becoming increasingly important given declining federal budgets.

Future Trails Planning

Many steps have been taken over the past years to improve the amount of data available on Wyoming’s statewide trail system. The WSTP has also grown tremendously as a program due to heavily increasing demands for trails. Several surveys and planning processes have been used to set goals and objectives for Wyoming trails and the WSTP. Most recently the ‘Wyoming State Trails Program Long-Range Plan 2012-2021’ was completed in 2012 working in conjunction with the Wyoming State Trails Advisory Council. Major goals and objectives related to trail uses include:

Snowmobile Program

1. Address program funding issues
2. Protect and enhance snowmobile access
3. Manage trail grooming to provide safe, high quality trails in a cost-effective manner
4. Manage trail signing to provide safe and easy to follow trails
5. Provide off-season trail route maintenance to ensure safe trails that can be effectively groomed
6. Promote education on riding opportunities, safe and ethical snowmobile operation and proper understanding of laws
ORV Program

1. Manage funding to aggressively diversify and expand riding opportunities
2. Protect and enhance ORV access
3. Manage trail signing to provide safe and easy to follow trails
4. Perform regular trail maintenance and improvement
5. Promote education on riding opportunities, safe and ethical ORV operation, and proper understanding of laws
6. Conduct ORV Program Monitoring

RTP Grant Program

Work with the State Trails Advisory Council to annually review and update program guidelines and selection criteria to keep current with Federal Highway Administration (FHWA) requirements for the program.

Trails Revenue Program

- Effectively manage and collect snowmobile and ORV revenue to support these trails
- Develop information which clearly relates to permit purchasers how their funds are spent

Non-Motorized Trails

- Analyze statewide non-motorized recreation opportunities and needs to determine appropriate roles for SPHST and the WSTP
- Facilitate opportunities and favorable policies for non-motorized trails statewide
- Pursue long-term funding sources and partnerships for non-motorized trails
- Evaluate the feasibility and need for a statewide non-motorized State Trail Crew
- Facilitate access for non-motorized recreation
Wyoming Land Managing Agencies That Provide Trail Opportunities

United States Forest Service

The United States Forest Service (USFS), within the U.S. Department of Agriculture, administers approximately 8.8 million acres of land in Wyoming, which is 25% of the total public land in the State. It is the largest single provider of trail opportunities in Wyoming. The 2013 Wyoming Statewide Trails Inventory identified over 9,600 miles of designated trails on national forests within Wyoming, which represents 72.7% of all inventoried trails in the state. Additionally, there are thousands of miles of non-designated trails and primitive roads available for recreation on USFS lands in Wyoming. National Forests are managed for multiple uses and provide timber, minerals, range, recreation, water, fish and wildlife.

There are fifteen designated Wilderness Areas totaling nearly 3 million acres (about 34% of USFS lands) in Wyoming available solely for non-mechanized recreation use such as hiking, horseback riding and long-distance backpacking. The use of Wilderness is an attraction for Wyoming residents, but is particularly captivating to out-of-state visitors. The Forest Service in Wyoming is administered by two different USFS Regional Offices, the Rocky Mountain Region (Region 2) headquartered in Denver, Colorado and the Intermountain Region (Region 4) headquartered in Ogden, Utah. There is one National Grassland (Thunder Basin) and four National Forests (Bighorn, Bridger-Teton, Medicine Bow and Shoshone) located entirely within the state and an additional four National Forests (Ashley, Black Hills, Caribou-Targhee and Uinta-Wasatch-Cache) located partially within Wyoming. The on-the-ground daily management is done by 21 Ranger Districts.

Bureau of Land Management

The Bureau of Land Management (BLM), within the U.S. Department of Interior, administers approximately 17.5 million acres of land in Wyoming, which is approximately one-third of the total state. The 2013 Wyoming Statewide Trails Inventory identified 520 miles of designated trails on BLM land, equal to 5% of trails in the State. However, over 50,000 miles of non-designated trails and primitive roads also exist on BLM land which makes the BLM an extremely important provider of trail opportunities in Wyoming.

BLM land in Wyoming is administered through the State Office in Cheyenne, with ten Field Offices located in Buffalo, Casper, Cody, Kemmerer, Lander, Newcastle, Pinedale, Rawlins, Rock Springs and Worland for on-the-ground management. The BLM’s resource management responsibilities in Wyoming are heavily influenced by the minerals, oil and gas industries, but also include recreation, timber, range, water, fish, wildlife and fire protection.
The National Park Service (NPS), within the U.S. Department of Interior, administers approximately 2.3 million acres of land in Wyoming that contain 1,474 miles of designated trails. These trails represent 14.1% of the trail opportunities in Wyoming and are significant for their historic, geologic and interpretive values.

NPS lands conserve the scenic, natural, historic objects and the wildlife therein, and provide for the enjoyment of the same by such manner and means that will leave them unimpaired for future generations. The NPS manages seven areas in Wyoming: Bighorn Canyon National Recreation Area, Devils Tower National Monument, Fort Laramie National Historic Site, Fossil Buttes National Monument, Grand Teton National Park, the John D. Rockefeller, Jr. Memorial Parkway and Yellowstone National Park. The recreational opportunities on NPS lands in Wyoming are particularly significant since Yellowstone was the nation’s first national park and Devils Tower was the first national monument.

The NPS is also the primary administrator of the National Trails System as authorized by the National Trails System Act of 1968. This System consists of three types of nationally designated trails: National Historic Trails, National Scenic Trails and National Recreation Trails. Various other agencies administer, operate and maintain the National Trails System within their jurisdiction in consultation with NPS.

National Scenic Trails are designated by an Act of Congress through a recommendation of the managing agency. They maximize outdoor recreation potential while providing for the conservation and enjoyment of nationally significant scenic, historic, natural or cultural qualities of areas through which the trails pass. Wyoming has one such trail, the 3,100-mile Continental Divide National Scenic Trail that follows the Continental Divide from Canada to Mexico with approximately 550 miles being located within Wyoming. National Historic Trails are also designated by an Act of Congress. They are extended trails that follow original trails or routes of national historic significance. Since these historic routes cross a checkerboard of private and public lands within Wyoming, there is often no public access to the trails themselves so auto tour routes often parallel the historic routes. Wyoming has four National Historic Trails whose original routes total over 2,600 miles: the Oregon National Historic Trail (491 original route miles in Wyoming), the Mormon Pioneer National Historic Trail (511 original route miles in Wyoming), the Pony Express National Historic Trail (540 original route miles in Wyoming) and the California National Historic Trail (1,088 original route miles in Wyoming including two alternate routes).

A National Recreation Trail is a designation that can be obtained for trails managed by public or private agencies as a component of the National Trails System. They must be fully developed and available for use at the time of designation and the administering agency must certify that the trail will be available for public use for a minimum of ten years. These trails do not require an Act of Congress, but rather can be designated either through the Secretary of Interior or the Secretary of Agriculture by a recommendation of the managing agency. There are fourteen National Recreation Trails totaling 138.3 miles in Wyoming: Beartooth Loop – Shoshone National Forest, 9.7 miles; Blackwater Fire Memorial – Shoshone National Forest, 6 miles; Bucking Mule Falls – Bighorn National Forest, 12 miles; Rock Creek/Deep Creek – Medicine Bow National Forest, 14 miles; Shell Falls – Bighorn National Forest, 0.2 mile; Wyoming Range – Bridger-Teton National Forest, 70 miles; Muddy Mountain Interpretive – Casper BLM, 2 miles; Grassroots – Torrington, 0.9 mile; Headquarters – Medicine Bow National Forest, 3.5 miles; Lee McCune Braille – Natrona County, 0.3 mile; Morning Glory – Yellowstone National Park, 1.5 miles; Sheridan – Bridger-Teton National Forest, 9 miles; South Rim – Yellowstone National Park, 9 miles; Three Senses – Yellowstone National Park, 0.2 mile.
The National Park Service also operates a Rivers, Trails and Conservation Assistance Program (RTCA) that works with community groups and local and State governments to conserve rivers, preserve open space, and develop trails and greenways. Their focus is on helping communities help themselves by providing expertise and experience from around the Nation. Their assistance in greenway efforts is wide-ranging and includes planning help with trails along abandoned railroad rights-of-way and regional water trails. Their assistance can be requested through the NPS Intermountain Region Office in Denver, Colorado.

**Bureau of Reclamation**

The Bureau of Reclamation (BOR), within the U.S. Department of Interior, administers approximately 954,000 acres of land in Wyoming. The BOR has played an active role in the economic development of Wyoming by providing facilities that generate power and store and convey water for irrigation and other uses. The day-to-day management of these lands is, for the most part, delegated to state or county government. Therefore, the discussion of trail opportunities on BOR lands is covered below in the discussion of the Wyoming Division of State Parks and Historic Sites and Local Agencies.

**U.S. Fish and Wildlife Service**

The U.S. Fish and Wildlife Service (USFWS), within the U.S. Department of Interior, administers approximately 81,000 acres of National Wildlife Refuge lands in Wyoming. Since public access to National Wildlife Refuges is very limited, USFWS has only 1 mile of designated trail in the state. Lands managed by the Fish and Wildlife Service are highly valued for their potential interpretive and wildlife viewing opportunities. The two primary USFWS areas within Wyoming with trail opportunities are the National Elk Refuge which has an accessible boardwalk behind the visitor center in Jackson and the Seedskadee National Wildlife Refuge where there is a fully accessible interpretive trail at the Lombard Ferry Historical Site.

**Wyoming Game & Fish Department**

The Wyoming Game and Fish Department (WGF) owns approximately 166,000 acres of land. The purpose of these lands are to provide fish and wildlife habitat. In some cases, these lands also provide access to other public lands. There are 6 miles of designated trails on WGF lands, along with a variety of paths and roads used as trails.

**Office of State Lands and Investments**

The Wyoming Office of State Lands and Investments manages 3.6 million acres of state trust lands in Wyoming. It is the administrative and advisory arm of the Board of Land Commissioners and the State Loan and Investment Board and is responsible for implementing the policies and decisions of those boards.

These State lands are not “public” lands in the same sense as those properties managed by the federal government. These lands were granted to the State on its admission to the Union to produce income for the support of public schools and institutions. Generally, State Lands, other than cultivated crop lands, are available for public hunting, fishing and recreational day use. There are few designated trails on State Lands, but a variety of paths and roads used as trails exist. While motor vehicle use off roadways is prohibited, all established roads have been enrolled in the State ORV Program.
**Wind River Indian Reservation**

The Wind River Indian Reservation administers public trails and pathways through two agencies, the Tribal Fish and Game and the Joint Transportation Department. It provides 39 trail segments totaling 131 miles of designated trails which represents 1.3% of trails within the state.

**Wyoming Department of Transportation**

The primary role of the Wyoming Department of Transportation (WYDOT) is to provide a safe, reliable transportation system that serves the needs of the traveling public, commerce and industry. A total of 6 miles of designated trail exists along WDOT right-of-ways. WYDOT also plays an important role in providing trail opportunities since it routinely considers bicycle and pedestrian needs when designing transportation facilities, particularly in urban areas. It administers the Transportation Alternatives program which allocates up to 10% of a state’s federal surface transportation funds for special use categories that can include trails and bicycle/pedestrian facilities. WYDOT’s Transportation Enhancement Activities Local (TEAL) grant program has been a primary funding source for many greenways and pathway projects located in or around Wyoming communities.

**Wyoming Division of State Parks, Historic Sites and Trails**

The Wyoming Division of State Parks and Historic Sites and Trails (SPHST), within the Wyoming Department of State Parks and Cultural Resources, manages 51,326 acres of land in Wyoming. The majority of this land is managed as reservoir parks leased from the Bureau of Reclamation. The park system has about 115 miles of designated non-motorized trails. Additionally, about 60 miles of park roadways are open to ORV use.

SPHST administers the federal Recreational Trails Program (RTP) grant program that provides grants to agencies and organizations for motorized, non-motorized and multiple use trail projects.

The Wyoming State Trails Program (WSTP), a program within SPHST, serves as the lead state entity to coordinate planning, development and implementation of statewide trail systems among federal, state and local agencies and the private sector. The State Trails Program does not own any land in Wyoming but rather facilitates and manages cooperative agreements that provide trail opportunities on lands owned by other agencies.

The State Trails Program administers the snowmobile and ORV registration programs and utilizes funds collected to develop and maintain snowmobile and ORV trail opportunities across the State. The Snowmobile Program provides day-to-day management for 2,573 miles of snowmobile trails. The ORV Program has over 625 miles of ORV trails and over 50,000 miles of ORV roads enrolled across the State.

The WSTP also operates the State Trail Crew that provides on-the-ground construction and maintenance of motorized trails for federal agencies, at no cost to the agency. It provides technical assistance to land management agencies and the public regarding trails management and development upon request. The program routinely monitors federal agency land-use planning initiatives such as USFS travel and forest management plans, BLM resource management plans, and environmental assessments to ensure recreational trail opportunities are properly considered and protected.
The ‘Wyoming State Trails Program Long-Range Plan 2012-2021’ describes the State Trails Program’s ‘niche’ as:

1. Operation of the State Snowmobile Program
2. Operation of the State ORV Program
3. Facilitation of non-motorized trail opportunities
4. Coordination of Wyoming Trails Advisory Council activities
5. Facilitate the effective use of RTP grant funds

Local Agencies
Wyoming’s cities, counties and recreation districts manage approximately 495 miles of trail which comprises about 4.7% of the designated trails in the State. These local-agency trails are extremely important since they provide close-to-home trail opportunities many residents desire for health and fitness.
In 1986, Congress enacted the Emergency Wetlands Resources Act (PL 99-645). Section 303 requires each Statewide Comprehensive Outdoor Recreation Plan (SCORP) to specifically address wetlands as an important outdoor recreation resource and requires the preparation of a wetlands priority plan consistent with the National Wetlands Priority Conservation Plan developed pursuant to Section 301 and in consultation with the State agency having responsibility for fish and wildlife resources. The Wyoming Wetlands Conservation Strategy prepared in 2010 by the Wyoming Joint Ventures Steering Committee with coordination through the Wyoming Game and Fish Department is presented here and serves as the wetlands component of this SCORP.

Purpose of Strategy

This statewide wetlands conservation strategy was developed to serve the following purposes:

1) Delineate important wetland and riparian habitat areas throughout Wyoming and assess their condition;
2) Identify factors or threats that may impair the functional integrity of wetlands and riparian habitats;
3) Establish statewide and regional conservation goals and priorities;
4) Formulate effective strategies to conserve and manage wetlands and riparian habitats;
5) Bring together existing conservation programs and initiatives to build and expand upon partnerships;
6) Assemble links to other resources and programs that can assist conservation planning, funding, and collaboration efforts; and

Although wetlands are the focus of this strategy, riparian corridors and open water habitats are also addressed.

For additional information concerning state wetlands conservation strategies, refer to:

http://www.epa.gov/owow/wetlands/initiative/swcp.html
Introduction

Wyoming contains proportionately less wetland and riparian area by comparison to more humid regions of the country (Hubert 2004). Indeed Wyoming is the fifth driest state, with an average rainfall of 16.8 inches (WSGS Water and Climate Working Group undated). Nonetheless, about 90% of wildlife species in Wyoming use wetlands and riparian habitats daily or seasonally throughout their life cycles and about 70% of Wyoming bird species are considered wetland or riparian obligates (Nicholoff 2003). Seventy-eight vertebrate species of greatest conservation need (SGCN) identified in our State Wildlife Action Plan use wetlands or riparian habitats on at least a seasonal basis (WGFD 2005). Fifty-eight vertebrate SGCN are considered wetland or riparian obligates (WGFD 2005). Riparian zones along the major stream courses also provide crucial migration and dispersal links traversing grassland and desert environments. Densities of breeding birds can be up to 10 times greater in riparian tracts compared to adjacent, non-riparian habitats (Lohman 2004).

Wetlands and riparian systems serve many functions in addition to wildlife habitat, such as flood attenuation, aquifer recharge and discharge, sediment filtering, contaminant removal, erosion control, and biomass export. Riparian systems act as sponges soaking up water during high flow events and later releasing it to maintain stable stream flows through the summer. Wetland and riparian systems are also used extensively for outdoor recreation such as hunting, fishing, wildlife viewing, and nature photography. Wetland functions and values are comprehensively described by Novitzki et al. (1999), EPA (2001), Nicholoff (2003), McKinstry et al. (2004), and several other authors. Riparian system functions and values are described by GAO (1988), Manci (1989), Brinson et al. (2002), Chambers and Miller (2004), Hubert (2004), and Soman et al. (2007). Due to their limited distribution and the many important functions they serve, wetlands and riparian systems are inordinately valuable to wildlife and people in Wyoming.

Definitions

Wetland Definitions and Delineation Criteria

For purposes of this wetland strategy, geographic delineation of wetlands is based on the National Wetland Inventory, which relies on the definition of “wetland” adopted by the U.S. Fish and Wildlife Service (USFWS):

“Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season each year” (Cowardin et al. 1979).

The above definition is somewhat more inclusive than regulatory definitions currently in use by the Natural Resource Conservation Service (NRCS), the U.S. Army Corps of Engineers (USACE or CE) and Environmental Protection Agency (EPA). Regulatory definitions require all 3 criteria (hydrology, hydric soils, and hydrophytic vegetation) must be met. The NRCS applies the following definition in determining agricultural operators’ eligibility for Farm Bill Program benefits:
“Wetland, except when such term is a part of the term “converted wetland”, means land that – (1) Has a predominance of hydric soils; (2) Is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and (3) Under normal circumstances does support a prevalence of such vegetation, except that this term does not include lands in Alaska identified as having a high potential for agricultural development and a predominance of permafrost soils.” [7 CFR 12.2]. [ftp://ftp-fc.sc.egov.usda.gov/WLI/tn_b_77_a.pdf]  

The USACE and EPA have adopted the following definition of wetlands with respect to regulatory programs under the Clean Water Act:  

“The term ‘wetlands’ means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.” [33 CFR 328.3(b)] [http://www.usace.army.mil/CECW/Documents/cecwo/reg/materials/33cfr328.pdf]  

The USFWS definition of “wetland” (Cowardin et al. 1979) encompasses additional areas such as alkali playas and temporary sheet water that may not strictly meet the NRCS or USACE/EPA regulatory definitions, but nonetheless function as important habitats for migrating birds. The USFWS, definition also does not distinguish between wetlands that are considered “jurisdictional” and “non-jurisdictional” under USACE and EPA regulatory programs – refer to “Clean Water Act of 1972” (page 26) for further discussion of “jurisdictional” wetlands. For purposes of this statewide wetland strategy, we have adopted the broader USFWS definition which is primarily habitat-based.  

Riparian Habitat Definition  

A regulatory definition of “riparian habitat” is not available. Collins et al. (2006) summarize numerous approaches that have been developed to identify riparian habitat. Most descriptions of “riparian habitat” are based on vegetation that is strongly influenced by hydrology associated with an adjacent stream or other water body. Odum (1971) provided the following conceptual definition: “‘Riparian habitat’ or ‘riparian corridor’ means an area of vegetation that exerts a direct biological, physical, and chemical influence on (and is influenced by) an adjacent stream, river, or lake ecosystem, through both above- and below-ground interactions. This area of association extends from the rooting systems and overhanging canopies of streamside flora outward to include all vegetation reliant on the capillary fringe characteristic of soils surrounding aquatic environments.” NRCS (2005) developed the following working definition to identify riparian zones in the field: “Riparian areas are ecosystems that occur along watercourses or water bodies. They are distinctly different from the surrounding lands because of unique soil and vegetation characteristics that are strongly influenced by free or unbound water in the soil. Riparian ecosystems occupy the transitional area between the terrestrial and aquatic ecosystems. Typical examples would include floodplains, stream banks, and lake shores.” Depending on location, riparian habitats in Wyoming are commonly indicated by presence of cottonwood trees, willows, water birch, river birch, dogwood, sedges, tufted hair grass, reed canary grass, and other phreatophytic plant species.
Ecological Setting

Wyoming is a high-elevation, topographically diverse state. The total surface area is 97,914 mi² with an average elevation of approximately 6,700 ft above sea level. Elevations range from 3,100 ft along the Belle Fourche River in NE Wyoming to over 13,000 ft in mountain ranges of western Wyoming (U.S. Geological Survey, EROS Data Center 1999). The average frost-free growing season is 125 days in the principal agriculture regions, but can be 42 days or shorter in mountain valleys (Curtis and Grimes 2004). Average annual precipitation ranges from 5-15 inches in most basins and prairies, 15-30 inches in foothills, and up to 60 inches in montane environments. Average annual evaporation ranges from 30-50 inches.

The western two-thirds of Wyoming are within the Rocky Mountains Geologic Province and the eastern third (east of the Laramie and Big Horn mountain ranges) is within the Interior Plains Geologic Province (Fenneman and Johnson 1946). The Interior Plains is further subdivided into the Missouri Plateau (NE Wyoming) and High Plains (SE Wyoming) physiographic regions (Barton et al. 2004).

Four dominant ecoregions cover the state: Northern Great Plains Steppe, Wyoming Basins, Utah-Wyoming Rocky Mountains, and Southern Rocky Mountains (Comer et al. 2003). At least 49 ecological cover types are present throughout the Wyoming portions of those 4 ecoregions. The most expansive are Wyoming big sagebrush shrubland and steppe (central/western Wyoming), and Great Plains mixedgrass and shortgrass prairie (eastern Wyoming), accounting for about half the state’s surface. Other cover types with significant area include mixed salt desert shrub, lodgepole pine forest, limber pine – juniper woodland, foothills grassland, and ponderosa pine woodland and savanna.

Wetland and Riparian Habitat Resources of Wyoming

Prior to settlement, natural wetlands covered about 3.2% of Wyoming (Dahl 1990) and were predominantly associated with riparian corridors, glaciated montane regions, and playa lakebeds. By the mid-1980s, anthropogenic activities had reduced wetlands to approximately 2% of the state’s surface. Both the number and area of natural wetlands continue to decline, while the acreage of ponds and other human-created water bodies has increased. Wyoming’s palustrine wetlands are predominantly freshwater emergent (55% by number, 73% by area) and temporary (67% by number, 87% by area) (Table 1).

Palustrine wetlands can be divided into morphological groups based on their location and origin. Riverine complexes were historically the most abundant natural wetlands and open water habitats in Wyoming. Wetlands associated with river systems include oxbows, beaver ponds, and seasonally flooded or subirrigated meadows and shrub/scrub types. These are included in the acreage tallies for palustrine wetlands whereas the open water phase of streams and rivers is included in the riverine tally (Table 1). The plains and intermountain basins of Wyoming also contain low densities of seasonally flooded basins called playas that formed in blowouts and in some cases are a result of tectonic activity. Kettle, cirque, and moraine type wetlands and lakes are present in high elevation sites historically covered by glaciers. The New Fork Potholes north of Pinedale are an example. However, the Pleistocene glacial sheets that left dense wetland complexes throughout the U.S. and Canadian prairie pothole region did not reach Wyoming. Springs, bogs, and seeps are also scattered throughout the state, but are most common in the montane regions. Beaver activity has created and maintained palustrine wetlands in all parts of the state, but to the greatest degree in foothills and montane streams.
Wetlands

Riparian systems currently cover approximately 2.6% (2,552 mi²) of the state’s surface (Merrill et al. 1996). Forest- and shrub-dominated riparian areas each comprise 45% of the riparian systems, and the remaining 10% is grass-dominated (Table 2). There is little historic data to assess changes in total area of riparian habitat in Wyoming. However, many riparian systems throughout the West are in poor condition due to the influence of regulated stream flows, grazing, and other land use practices (Elmore and Beschta 1987; GAO 1988; Chaney et al. 1990; Chambers and Miller 2004).

Table 1. Composition of wetlands and open water habitats in Wyoming. †

<table>
<thead>
<tr>
<th>Palustrine Wetlands</th>
<th>Based on Hydroperiod ‡</th>
<th>Number</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporary</td>
<td>186,646</td>
<td>803,717 acres</td>
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</tr>
<tr>
<td>Semi-permanent</td>
<td>75,723</td>
<td>67,639 acres</td>
<td></td>
</tr>
<tr>
<td>Permanent</td>
<td>13,696</td>
<td>17,275 acres</td>
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</tr>
<tr>
<td>Unknown</td>
<td>4,526</td>
<td>29,970 acres</td>
<td></td>
</tr>
<tr>
<td>TOTALS</td>
<td>280,591</td>
<td>918,601 acres</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Based on Classification ‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshwater emergent</td>
</tr>
<tr>
<td>Freshwater Forested/Shrub</td>
</tr>
<tr>
<td>Freshwater Pond</td>
</tr>
<tr>
<td>TOTALS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Open Water Types</th>
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</thead>
<tbody>
<tr>
<td>Lake/Reservoir</td>
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<tr>
<td>Riverine</td>
</tr>
<tr>
<td>Other</td>
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<tr>
<td>TOTALS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Palustrine Wetlands + Open Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL in Wyoming</td>
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</tbody>
</table>

† Source: Copeland et al. (2010)  
National Wetland Inventory data based on 1980 imagery  
‡ Cowardin et al. (1979)

Table 2. Composition of riparian habitats in Wyoming. †

<table>
<thead>
<tr>
<th>Type</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest dominated riparian</td>
<td>733,327 acres</td>
</tr>
<tr>
<td>Shrub dominated riparian</td>
<td>739,436 acres</td>
</tr>
<tr>
<td>Grass dominated riparian</td>
<td>160,658 acres</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,633,421 acres</td>
</tr>
</tbody>
</table>

† Source: Wyoming Gap Analysis (Merrill et al. 1996)
Wetlands

Wetland Complexes

Clusters of wetlands in close proximity (wetland complexes), especially wetlands of differing size, depth, chemistry, vegetation cover, and hydrology, tend to sustain more diverse ecological communities and concentrated use by wildlife (Stoudt 1971; Kantrud and Stewart 1977; Ruwalldt et al. 1979; Swanson et al. 1979; Mack and Flake 1980; Kantrud and Stewart 1984; Williams 1985; Brown and Dinsmore 1986; Weller 1987; Fredrickson and Reid 1988; McKinstry and Anderson 1994, 2002; Gammonly 2004; Rumble et al. 2004; Tessmann 2004). Along altitudinal gradients, wetlands at mid and lower elevations tend to support greater diversity and density of wildlife because the growing season is longer, enabling those wetlands to be more productive. Higher elevation wetlands can be important for specific life stages of several species, though they tend not to be as productive. Wetlands at over 8,000 ft. elevation do not support significant waterfowl production in Wyoming because the ice-free period is too short to dependably fledge broods and invertebrate food sources are more limited. Most high-elevation wetlands are on lands managed by the U.S. Forest Service and National Park Service; approximately 40% of these wetlands are afforded a high degree of protection (Copeland et al. 2010).

Conservation efforts often focus on complexes of wetlands because greater benefits can be realized in terms of wildlife diversity and abundance. In general, species richness and abundance are positively correlated with the density and diversity of wetlands in a complex (Stoudt 1971; Kantrud and Stewart 1977, 1984; Ruwalldt et al. 1979; Swanson et al. 1979; Mack and Flake 1980; Proctor et al. 1983a,b; Williams 1985; Brown and Dinsmore 1986; Weller 1987; Fredrickson and Reid 1988; Tilton and Denison 1992; Gibbs 1993; McKinstry and Anderson 1994, 2002; Semlitsch 2000; Fredrickson and Laubhan 1994; Gammonly 2004; Lovvorn and Hart 2004; Rumble et al. 2004; Tessmann 2004). However, wetland scientists do not agree on the criteria used to define wetland complexes. In the prairie pothole region, Lokemoen et al. recommended 12-40 impoundments/km² (30-100/mi²). On the other hand, McKinstry and Anderson (2002) recommended a minimum of 5 impoundments/km² (13/mi²) on reclaimed bentonite mines in NE Wyoming. Proctor et al. (1983a,b) recommended an impoundment density of at least 1/km² (2.6/mi²) to enhance wildlife habitat on surface coal reclamation.

The importance of isolated wetlands should not be overlooked, particularly within an arid landscape. Isolated wetlands provide a water source and enhanced cover and forage production, making them a hub of activity for terrestrial wildlife that inhabit the surrounding area. Such wetlands are often critical resting areas for birds migrating long distances across dry expanses. Species richness and abundance tend to increase with wetland size (Lokemoen 1973; Mack and Flake 1980; Hudson 1983; Brown and Dinsmore 1986; Belanger and Couture 1988; Leschisin et al. 1992; Marble 1992; McKinstry et al. 2001; McKinstry and Anderson 2002a). Therefore, larger size and a relatively permanent hydrologic regime are important attributes of isolated wetlands.

Two efforts have been undertaken to delineate and prioritize wetland complexes for conservation planning in Wyoming. The first assessment was conducted by the Wyoming Game and Fish Department (WGFD) with involvement by the USFWS during the late 1980s. The second assessment was conducted by The Nature Conservancy (TNC) in 2009 in conjunction with a project entitled “Wyoming Wetlands Integrity and Stressor Identification Project” (Copeland et al. 2010). The WGFD was also a cooperator in the TNC study.
WGFD Wetland Complex Delineation

The earlier delineation of wetland complexes became the foundation for the wetlands component of the 1995 Statewide Comprehensive Outdoor Recreation Plan (SCORP) (WGFD 1995; WY Dept. of Commerce 1995). The SCORP wetlands component was intended to identify wetland areas for potential acquisition under Section 303 of the Emergency Wetlands Resources Act of 1986 (EWRA) (USFWS 1989). The EWRA authorized expenditures from the Land and Water Resources Fund for the purpose of acquiring priority wetlands [http://www.fws.gov/laws/lawsdigest/emwet.html]. Delineation and prioritization of wetland complexes for the SCORP were based on the National Wetland Inventory maps and field experience of state and federal resource managers. Wetland complexes at elevations above 8,000 ft. were excluded due to their limited value for waterfowl production. In all, 49 important wetland complexes were recognized in the SCORP wetlands component (Fig 1).

2009 Wetland Assessment

In 2009, The Nature Conservancy (TNC) and WGFD completed a more comprehensive inventory and assessment of wetland complexes based on available geospatial datasets throughout Wyoming (Copeland et al 2010). TNC’s “Wyoming Wetlands Integrity and Stressor Identification Project,” was funded by the Wyoming Department of Environmental Quality through Section 319 (Nonpoint Source Program) of the Clean Water Act. Complexes were spatially delineated based on five density strata ranging from 0.001-0.006 wetlands/acre (0.6-3.8 wetlands/mi²) to 0.025-0.046 wetlands/acre (16-29 wetlands/mi²). The TNC study recognized 222 individual wetland complexes throughout Wyoming (Figs. 2, 3). Several condition assessment metrics were developed in this study and are discussed in a later section entitled, “PRIORITY RANKING OF WETLAND COMPLEXES” (Page 120).

“Due to their limited distribution and the many important functions they serve, wetlands and riparian systems are inordinately valuable to wildlife and the people in Wyoming.”
Fig. 1. Wetland complex delineations by WGFD (1995).

Major Wetland Complexes in Wyoming

1. Goshen County
2. Sinnard Reservoir
3. Miller (Glomil) Res.
4. Gray Rocks Reservoir
5. Johnson Reservoir
6. Lower N. Platte River
7. Central N. Platte River
8. Bixby Reservoir
9. Six Mile Reservoir
10. Natrona County
11. Sweetwater/Pathfinder NWR
12. Sand Creek
13. Sand Lakes
14. Medicine Bow
15. Laramie Plains
16. Horse Creek
17. Niobrara County
18. Betty Reservoir
19. South Gillette
20. Crazy Woman Drainage
21. North Buffalo
22. Parkman
23. Horse Creek
24. Park Reservoir
25. Northeast Wyoming
26. Upper N. Platte River
27. Little Snake River
28. Mahoney, Mud Flat Lakes
29. Chain Lakes
30. Picket Lake
31. Upper Sweetwater
32. Killpecker Sand Dunes
33. Farson-Eden (Big Sandy River)
34. Lower Green River
35. Blacks Fork/ Hams Fork
36. Henry’s Fork
37. Muddy Creek
38. Upper Bear River
39. Salt River
40. Greys River
41. Snake River
42. Yellowstone Park
43. Wind River
44. Bighorn River
45. Lower Greybull R.
46. Upper Greybull R.
47. Shoshone River
48. Beck/Alkali Lakes
49. Clarks Fork River

Areas of scattered wetland important to wildlife because of numerous playas, flooded meadows, beaver ponds or man-made reservoirs

Concentrated wetland areas
Fig. 2. Wetland complex delineations from Copeland et al. (2010).
Fig. 3. Wetland densities from Copeland et al. (2010).
Potential Threats To Wetlands

Activities and conditions that may adversely impact Wyoming’s wetlands are qualitatively ranked in Table 3 and further discussed in the sections that follow.

Table 3. Threats to wetlands in Wyoming.

<table>
<thead>
<tr>
<th>Potential Threats</th>
<th>Severity of Threat</th>
<th>Potential for Improvement †</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Climate Change / Drought</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Compromised Regulatory Programs</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Rural Residential Developments</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Dam/Reservoir Construction</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Stream Flow Stabilization</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Stream Dewatering</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Channel Alterations, Structures or Modifications in Floodplains</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Transportation Infrastructure</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Energy Exploration and Development</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Mining</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Timber Harvest</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Irrigation Improvements (e.g., ditch &amp; canal lining)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Conversions to Center Pivot Irrigation</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Intensive Farming Practices</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Overutilization by Ungulates</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Invasive Plant Species</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Management/Maintenance at Existing Wetland Projects</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Disturbances Associated with Recreational Use</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Public Awareness and Support</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Available Funding for Monitoring, Protection, Mitigation</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

† “L” = low; “M” = moderate; “H” = high potential for improvement
Climate Change

Periodic drought is a natural climatic event and an important driver of wetland ecology in the West. Drying cycles restore productivity of wetlands by oxidizing wetland substrates and releasing organically bound nutrients. However, the frequency, intensity, and duration of drought cycles have increased markedly since the 1980s (Fig. 3). These climatic shifts are producing undesirable changes in wetland hydrology and long-term loss of functional wetlands in several regions. Climatologists predict frequency and severity of drought will increase as global climate change continues.

Annual evaporation exceeds precipitation by 2-5 times in most Wyoming basins. Consequently, isolated natural wetlands (predominantly shallow playas) can remain completely dry for extended periods during a drought cycle. Riverine systems fed by mountain snowpack or springs have more dependable water supplies (Hubert 2004), but are also impacted by low flows during extended drought. Wetlands associated with irrigation can be somewhat insulated from drought as long as water sources remain available. However, wetlands dependent on irrigation can also remain dry for extended periods when there are water shortages. Permitted wetland impoundments with junior priority appropriation rights are especially vulnerable under these conditions.

Fig. 4. Historic frequency and severity of drought in Wyoming.

For example, about 85% of human-created wetlands in the Goshen Hole Complex (SE Wyoming), including those on the Department’s Wildlife Habitat Management Areas (WHMAs), depend directly or indirectly on irrigation. Although natural and created wetlands within the Goshen Hole Complex were generally in very good condition throughout the 1970s and 1980s, that timeframe coincided with a series of wetter than normal years. Water supplies decreased markedly from the late 1990s through 2009 and wetlands fed chiefly by irrigation flows or appropriations ceased to function in many cases. Springer Reservoir, Bump-Sullivan Reservoir, and all wetlands on the Springer WHMA were dry or nearly dry. Wetlands on the Table Mountain WHMA were also predominantly dry, in particular during the summer nesting and brood rearing period.

Water supplies were also impacted throughout the North Platte drainage due to a combination of drought and legal decisions (the Platte River Endangered Species Lawsuit). As a result, wetlands and deepwater habitats were severely depleted in a large area of southeast Wyoming. A conservative estimate placed the loss of wetland and reservoir-dependent recreation at 165,000 days annually (Tessmann 2007). This represented a loss to the State’s economy of nearly $14 million per year. Some degree of recovery was realized during the 2009 water year and 2010 was an exceptionally wet year. Nonetheless, climatic records clearly depict a long-term trend toward overall drier conditions and more frequent drought cycles.

Compromised Regulatory Programs

Two U.S. Supreme Court decisions, Solid Waste Agency of Northern Crook County (SWANCC) (2001) and Rapanos and Carabell (2006), significantly modified the federal interpretation of “waters of the United States” subject to regulation by the U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) (Refer to “Clean Water Act of 1972 – Section 404” on page 83). In the SWANCC case, the Court vacated the “Migratory Bird Rule” [Fed. Reg. 51: 41206, 41217] formerly used by the Federal Government to regulate activities within “isolated” wetlands. The Rapanos and Carabell case also established that wetlands must have a significant nexus to waters that are “navigable” in the traditional sense to be considered jurisdictional under the federal Clean Water Act (CWA).

As a consequence of the SWANCC and Rapanos and Carabell decisions, isolated wetlands lacking a “significant nexus” to traditional navigable waters no longer receive the protection of the CWA. The Swampbuster provision of the Food Security Act continues to afford some protection to isolated wetlands on agricultural lands. An operator who converts a wetland to agricultural production may lose eligibility for certain USDA farm program benefits including low-interest loans, tax credits, crop insurance and price support programs. However, Swampbuster does not protect wetlands from non-agricultural activities such as housing subdivisions, energy developments, utility corridors, and road construction.

Federal district court opinions issued in 1997 (American Mining Congress et al. v USACE et al.), 1998 (National Mining Association et al. v. USACE et al.), and 2007 (National Association of Home Builders et al. v. USACE et al.) also overturned USACE and EPA regulations asserting Section 404 jurisdiction over certain activities resulting in the drainage and conversion of jurisdictional wetlands (Refer to “Clean Water Act of 1972” – “Section 404” on page 83). The regulatory interpretations known as the Tulloch Rule and Tulloch Rule II asserted the Corps had authority to regulate and permit excavations resulting in “incidental fallback” of dredged material and operation of equipment within jurisdictional wetlands. The courts’ vacatur of the Tulloch rules created an additional loophole in the Nation’s wetland protection laws by allowing unregulated excavation of drainage ditches for the purpose of converting jurisdictional wetlands into non-wetland areas that can later be developed.
Rural Residential Development

Rural residential construction has expanded rapidly in many parts of Wyoming, notably in the Pinedale, Jackson, Star Valley, Bear River, Bridger Valley, Lander, Cody, Casper, Sheridan, Laramie, and Cheyenne areas. According to the Wyoming State Engineer’s Office, nearly 100,000 acres of rural lands were subdivided into lots smaller than 35 acres between 1998 and 2006. The American Farmland Trust (AFT) estimates 2.6 million acres of prime ranchland in Wyoming could be converted to residential development by 2020 (AFT 2002). The AFT study also found that 5 counties in Wyoming (Sublette, Park, Uinta, Big Horn, and Fremont) were among the top 25 counties in the Rocky Mountain region in terms of potential for conversion of prime ranchland to residential development.

Developers can drain and fill isolated wetlands without a permit at construction sites. In addition, rural residential construction is often situated within or near riparian corridors, which are appealing locations and often the only private land available for development in central and western Wyoming. Infrastructure such as roads, buildings, power lines, and fences, along with associated disturbance, can lessen the suitability of wetlands and riparian habitats for sensitive wildlife. Loose pets, especially cats, also pose a serious threat to wildlife within and near subdivisions.

Dam and Reservoir Construction

The Wyoming Game and Fish Department’s Stream/Lake Database includes 666 man-made reservoirs covering slightly over 248,000 acres or 388 mi² in Wyoming (these figures do not include most livestock impoundments or waters within the Wind River Indian Reservation). At least 30 Wyoming reservoirs exceed 10,000 acre-ft. storage capacity and 15 exceed 100,000 acre-ft. Although dams create large deepwater habitats, they often inundate significant areas of wetlands and riparian habitats. The larger water developments can flood many miles of natural streams and riparian habitats. The potential for wetland margins to develop along shorelines of large reservoirs is limited due to wave action and unstable water levels, which generally preclude establishment of wetland soils and vegetation.
Stream Flow Stabilization

Direct impacts from large, publicly funded water projects are typically mitigated through creation, enhancement, or acquisition of replacement wetlands and riparian habitats. However, project managers often fail to recognize the downstream impacts of dam operation through time. Flow stabilization and attenuation of peak floods alter channel-forming processes that are critical for creating and maintaining oxbow wetlands, pools, braided channels, point bars, and other natural habitat features. Rivers with heavily regulated flows such as the lower North Platte tend to develop constricted channels that over time become encroached by tree growth. High flows may no longer achieve a sufficient stage or energy to form new braided channels or oxbow cutoffs between river loops. As existing oxbows accumulate sediment and transition into terrestrial habitats, they are no longer being replaced by new oxbows. Flow stabilization projects also lead to additional residential and commercial development within floodplains. Over time, the cumulative area impacted by flow stabilization can be many times the area directly inundated by a reservoir.

Floodplain Modifications

Levees, bank stabilization projects, and other structures cause additional impacts to riverine ecosystems. The Snake River levee system is a case in point. Levees constrain flow to the main channel, preventing water from spreading onto the floodplain during high runoff periods. This disrupts the natural tendency of the channel to shift and form meanders and braids, which are essential for maintenance and formation of floodplain wetlands. Smaller braided channels that are crucial spawning and nursery habitat for cutthroat trout and other species become severed from the main channel and fish access is blocked. Flow energy is also concentrated within the main channel, leading to downstream channel destabilization, downcutting, more frequent flooding, and the need for additional stabilization projects, which in turn impact even more wetland and riparian area. Some other floodplain modifications that alter natural flow dynamics include bridges, culverts, dikes, irrigation diversions, elevated roadways, railroad grades, and sand/gravel operations.

Transportation Infrastructure

Bridge reconstruction, road resurfacing, shoulder widening, curve realignment, and culvert installation and replacement projects are completed on an annual basis throughout Wyoming. Not all road construction or reconstruction affects wetlands, however projects involving stream and floodplain crossings often do. Road improvements can also impact “isolated” wetlands in drainage ditches, borrow pits, gravel quarries, and where surface drainage may have been impounded by the original roadbed. Road construction and culvert installation across wet meadows, especially in montane regions, can intercept and channel surface and groundwater flow thereby desiccating substantial areas of wetland. The multi-lane initiative of the Wyoming Department of Transportation (WYDOT) proposes to convert 490 miles of 2-lane highway into 4-lane highway between 2005 and 2025 (WYDOT 2005:43) and may affect additional wetland areas.

The WYDOT mitigates impacts to wetlands affected by road construction in accordance with Section 404 of the CWA, the Federal Highway Administration’s (FHA’s) Wetland Mitigation Policy [FR 65:82913] [http://www.fhwa.dot.gov/environment/fr29de00.pdf] and WYDOT’s environmental mitigation practices [http://dot.state.wy.us/wydot/engineering_technical_programs/environmental_services]. In addition, any highway project that receives federal funding or authorization from the FHA is required to comply with Presidential Executive Order (EO) 11990 (Protection of Wetlands) [http://www.epa.gov/wetlands/regs/eo11990.html]. This EO requires (in part), “Each agency shall ... take action to minimize the destruction, loss or degradation
of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency’s responsibilities for … providing Federally undertaken, financed, or assisted construction and improvements …” The protections afforded by EO 11990 apply to all wetlands including isolated wetlands that are no longer subject to Section 404 jurisdiction pursuant to the SWANCC and Rapanos and Carabell decisions.

Nationwide Permit (NWP) 14 authorizes linear transportation projects that do not cause the loss of greater than 0.5 acre of waters of the United States.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. General permit conditions require projects authorized under nationwide permits must not block aquatic life migration or adversely affect fish spawning habitat or migratory bird breeding habitat. The activity also cannot adversely impact federally-listed threatened or endangered species.

Other impacts associated with road improvements may include disturbance effects from increased traffic, which can displace sensitive species from nearby wetlands. Roadways also become a barrier to less mobile wildlife such as amphibians and turtles, resulting in additional habitat fragmentation for those species. Heavy traffic near wetlands can become a significant source of mortality for concentrations of wildlife that are attracted to those areas. Finally, salt, oil, and other pollutants washing from road surfaces can impair water quality in small streams and wetlands.

Energy Development and Mining

Large areas of the Wyoming landscape are dominated by energy production and mining. Wyoming is ranked 2nd among all states in terms of total BTUs of energy output (U.S. Energy Information Administration 2010). Wyoming is the nation’s leading producer of coal (National Mining Association 2008) and is ranked 3rd in natural gas production and 8th in crude oil production (U.S. Energy Information Administration 2010). Wyoming is also the leading producer of soda ash (also called trona) (Kostick 2008) and bentonite (Virta 2008). Wyoming ranks 7th nationally in wind power generating potential factoring in land status and environmental constraints (Elliott et al. 1991).

Based on a recent compendium of public land statistics, 175,980 acres of federal minerals are currently leased for coal extraction in Wyoming and oil and gas leases total more than 8.8 million acres (BLM 2008). Over 42,000 oil and gas wells were in production as of April, 2008 (Barclay et al. 2008) and nearly 10,000 applications for permits to drill (APDs) were approved from January, 2008 through May, 2009 (Wyoming Oil and Gas Commission data available at http://wogcc.state.wy.us/). Natural gas production in Wyoming is projected to more than double from its current level by 2035 (Surdam undated, 2008).

Interest in Wyoming’s wind resources is also escalating sharply. The Wyoming Game and Fish Department (WGFD) is aware of 30 new wind projects that will seek regulatory approval in the next few years and many additional proposals are expected as new transmission projects enter the regulatory process (WGFD 2010). The Wyoming Infrastructure Authority is also studying a conceptual design capable of collecting as much as 12,000 megawatts (MWs) of new electric generation within Wyoming. Typical turbines have a power generating capacity of approximately 1.5-2.5 megawatts and require approximately 50 acres of land per turbine. Therefore, the land area of wind farms in Wyoming could potentially exceed a quarter-million acres.
Wyoming also ranks 12th among states in total non-fuel mineral production (National Mining Association 2008). By the late 1970s, bentonite mining had affected 50,000- 60,000 acres (NRC Committee on Surface Mining and Reclamation 1979) and Wyoming continues to be the world’s leading producer of bentonite. Soda ash or trona leases total 74,479 acres (BLM 2008). While most soda ash mining is underground, evaporation ponds used in the recovery process can occupy large areas of surface and pose a hazard to migrating waterbirds. In addition, Wyoming has 150 sand and gravel mining operations affecting an unspecified acreage of land (Bolen 2009). Uranium ore was historically mined from open pits, however since 1992 in-situ technologies have replaced surface mining to extract uranium, and only one operation is currently producing in Wyoming (WSGS Uranium Working Group undated).

Energy and mineral developments can have varying impacts on wetlands depending on the location and specific regulatory provisions governing each type of operation. In some cases wetlands have been enhanced through reclamation, mitigation, or acquisition of supplemental water sources. Modern mining and drilling operations that involve discharge of dredged or fill materials into waters of the United States must, at a minimum, comply with Section 404 of the Clean Water Act of 1972. Prior to the SWANCC and Rapanos and Carabell decisions, this meant nearly all wetlands had to be avoided or mitigated if avoidance was not feasible (i.e., if the project was “wetland dependant”). In Wyoming, extensive surface water (886 ponds occupying 909 acres) on abandoned bentonite mine workings had, in many cases, developed wetland characteristics (McKinstry 1993; McKinstry and Anderson 1994). During the late 1980s and early 1990s, the Wyoming Abandoned Mine Lands Program created and enhanced over 288 wetlands totaling some 593 acres in order to mitigate wetlands impacted by reclamation of these abandoned mine workings (McKinstry 1993; McKinstry and Anderson 1994). These wetlands were generally considered “isolated,” therefore it is unclear whether they would have been retained or mitigated after the SWANCC and Rapanos and Carabell decisions reinterpreted the Clean Water Act. However, federally-funded reclamation under the Abandoned Mine Lands Program is also required to comply with EO 11990 (Protection of Wetlands).
Coal mines are regulated under the Surface Mining Control and Reclamation Act of 1977 (SMCRA) and by approved state regulatory programs that can be no less stringent than SMCRA. Section 515(b)(24) of SMCRA stipulates, “[a]ll surface coal mining and reclamation operations] shall ... to the extent possible using the best technology currently available, minimize disturbances and adverse impacts of the operation on fish, wildlife, and related environmental values, and achieve enhancement of such resources where practicable.” 30 CFR 715.13(a) further stipulates, “All disturbed areas shall be restored in a timely manner (1) to conditions that are capable of supporting the uses which they were capable of supporting before any mining ...” Specific to wetlands and riparian habitats, 30 CFR 816.97(f) states, “The operator conducting surface mining activities shall avoid disturbances to, enhance where practicable, restore, or replace, wetlands, and riparian vegetation along rivers and streams and bordering ponds and lakes. Surface mining activities shall avoid disturbances to, enhance where practicable, or restore, habitats of unusually high value for fish and wildlife.” Some regulators have incorrectly interpreted these obligations as being applicable only to wetlands that are “federally jurisdictional” under Section 404. However, all wetlands that comprise important wildlife habitat must be restored on reclaimed lands in order to preserve the capability of the land to support fish and wildlife habitat as defined at 30 CFR 715.13(c)(10) and in order to comply with the specific provisions of 30 CFR 816.97(f). SMCRA provides no distinction between habitats based on whether they are “jurisdictional” or “non-jurisdictional” under another regulatory authority. For example, there is no jurisdictional definition of “riparian habitat” and all riparian habitats must be restored or replaced in accordance with 30 CFR 816.97(f). Furthermore, Executive Order (EO) 11990 (Protection of Wetlands) applies to all permitting activities under the oversight of the Federal Office of Surface Mining (OSM). This EO states (in part), “Each agency shall ... take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency’s responsibilities for ... conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.”

Sand and gravel mining operations sited in floodplains also have potential to impact wetlands and riparian habitats. However, it is likely this type of mining has produced a net gain of wetlands and open water habitats relative to the acreages that were impacted because it was a common practice in the past to convert abandoned or reclaimed quarries into ponds and small lakes. Many of these impoundments have developed wetland margins of varying width depending on steepness of the basin slope. Conversely, the conversion of sand and gravel pits into open water habitats may have produced a net loss of riparian habitats.

Over the past 10 years, unprecedented development of oil and gas fields has taken place in Wyoming and other regions of the West. The trend will likely continue, at least cyclically, through upcoming decades. For the most part, well fields are located in arid upland sites with sparse wetland and riparian features. Nonetheless, vegetation clearing, road construction, and culvert installations can alter watershed characteristics by producing higher peak flows of shorter duration, and increased sediment loading, erosion, and pollutant runoff that impact downstream areas including wetlands. Poor road and culvert installation practices can eliminate wet meadow and swale areas by channeling flow, which induces down-cutting and desiccation of adjacent surfaces. Although these types of mesic habitats may or may not strictly meet the definition of wetland, they sustain enhanced forage production important to sage grouse, big game, and other species. Locating wells, roads, or buildings within or close to riparian habitats can also adversely affect wildlife. New housing and community infrastructure built to accommodate work forces and related population growth are often built near riparian areas because in the West, the private lands that are open to development are often situated along stream corridors. For example, sections of the Green and New Fork Rivers have the potential to be heavily impacted.
In some areas, oil and gas developments have created new ponds and wetlands by discharging produced water onto the land surface. These wetlands can be beneficial for several species (e.g., waterfowl, shorebirds) if the discharged water is of suitable quality. Conversely, increasing the distribution of surface water within predominantly arid shrublands can alter the ecology of terrestrial ecosystems by changing timing and distribution of grazing and by creating mosquito breeding habitat which can lead to spread of West Nile virus. New surface water sources may not be desirable on winter ranges where they could enable larger numbers of ungulates to remain well into the summer and fall, thereby depleting forage availability during crucial winter periods. Discharging produced water into streams and tributary drainages can alter the natural range of hydrologic conditions resulting in either detrimental or beneficial effects on the species that are adapted to life in a particular stream. Most potential impacts to wetlands and riparian systems can be avoided or minimized by locating all oil and gas facilities at a sufficient distance and by implementing appropriate environmental “best management practices” (USDI and USDA 2007; WGFD 2009).

The potential impact of wind energy facilities also depends largely on site selection and setback distances. Turbines situated too close to wetlands and open water can cause aquatic birds and bats to displace from otherwise suitable habitat (Gill et al. 1996; Guillemette et al. 1998; Larsen and Madsen 2000; Noer et al. 2000; Percival 2001; Bruns et al. 2002; Christensen et al. 2002; Guillemette and Larsen 2002; Langston and Pullan 2003; Garthe and Hüppop 2004; Strickland 2004; Krijgsfeld 2007; Stewart et al. 2007:6). Collision mortalities are also more frequent if turbines and powerlines are located too near migration corridors, refuges, and feeding and resting sites (Fiedler and Wissher 1980; Crwellia et al.1988; Morkill and Anderson 1991; Pacific Flyway Study Committee 2002; BLM 2005:5-63; Manville 2005; Rubolini et al. 2005; APLIC 2006; Mabey and Paul 2007; and Frost 2008).

The U.S. Fish and Wildlife Service identified avian collisions as a major issue related to wind farm construction near the Horicon National Wildlife Refuge in Wisconsin (USFWS 2004). As a result, the project sponsor was required to site all wind turbines at least 2 miles from the refuge property boundary (Public Service Commission of Wisconsin 2005:19). To reduce impacts on wetlands, the U.S. Fish and Wildlife Service recommends that turbines never be constructed in wetlands including lakes, ponds, marshes, sloughs, swales, swamps, or potholes, and that turbine locations should avoid obvious flight paths between larger (20 acres or greater) wetlands or sloughs or other known migratory bird corridors or flight paths. The Service further recommends turbines not be located in areas where birds are highly concentrated such as wetlands, state or federal refuges, private duck clubs, staging areas, rookeries, leks, roosts, riparian areas along streams, and landfills. Known daily flight corridors such as between roosting and feeding areas, and areas with a high incidence of fog, mist, low cloud ceilings, and low visibility should also be avoided (USFWS 2003). The Wyoming Game and Fish Department recommends that appropriate setback distances should be site-specifically determined when wind energy facilities are proposed within 2 miles of a wetland, stream, or riparian habitat (WGFD 2010).

Timber Harvest

Most of Wyoming’s commercial timber is located on national forest system lands where timber harvest is conducted in accordance with forest management area prescriptions and silvicultural best management practices (USFS 1988; WY Dept. of Environmental Quality 2004). Annual timber harvest on Wyoming’s national forests peaked at over 100 million board feet in 1987 and 1988, but has since declined. Only 12 million board feet were harvested in 2000 and 2001 (Morgan et al. 2005:14). This drop in harvest levels resulted from numerous constraints on harvesting timber on public lands, including appeals and litigation of timber sales, threatened and endangered species protection, and cumulative impacts of past harvesting.
on other resources such as water quality and wildlife (Morgan et al. 2005:2). Timber harvest rebounded slightly to 25 million board feet in 2002, the last year of data reported by Morgan et al. 2005).

Silvicultural operations can impact streams and wetlands by increasing runoff, peak flows, erosion, and siltation (Hutchens et al. 2004). In addition, access and haul roads can eliminate wet meadows and swales by channeling surface and groundwater flow through culverts where roads are constructed across these features. Forest prescriptions in Wyoming generally require leaseholders to harvest timber by means of clearcuts that mimic the size and shape of natural disturbances. Buffer strips are usually left standing adjacent to streams, lakes, and larger wetlands to reduce the impact to aquatic ecosystems. However, isolated springs and wetlands frequently are not mapped within forest harvest stands and may not be protected during logging operations. The decline in logging since the 1980s has lessened the potential impact. Current levels of commercial timber harvest are considered to have a low to moderate impact on wetlands and riparian habitats in Wyoming. The impending large-scale loss of mature boreal forest due to pine bark beetle infestation is expected to have a major impact, although the scope and magnitude are unpredictable at this time.

Irrigation System Improvements

An estimated 1,947,100 acres of land are irrigated in Wyoming (WY Water Development Commission 2007). Agricultural irrigation has impacted wetlands both positively and negatively. Stream diversions and dewatering can diminish or eliminate natural wetlands associated with riverine systems. On the other hand, release of stored irrigation water and subsurface return flows can enhance base stream flows during the summer period, thereby sustaining a higher water table and more permanent wetland conditions. Wetlands often form in locations where seepage along canals and lateral ditches, and runoff from irrigated fields support wetland hydrology. Irrigation systems can also provide opportunities for wetland creation and enhancement by conveying water to suitable wetland project locations. Irrigation system rehabilitation or improvement projects intended to reduce seepage losses, such as installing canal linings or pipe, will eliminate some wetlands. On the other hand, more efficient water delivery can increase water supplies to some wetlands and may also increase irrigation return flows into others. Projects that are publicly funded should include an assessment of wetland impacts and mitigation to offset potential losses.
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Conversions to Center Pivot Irrigation

Past and ongoing conversions from flood irrigation to center pivot sprinkler systems have adversely impacted wetlands in several regions of Wyoming. Center pivot systems reduce water consumption by producing substantially less runoff or “waste water” that feeds into watersheds and wetland basins. Federal funding assistance is currently available from the Environmental Quality Incentives Program (EQIP) administered by the NRCS to convert flood irrigation to center pivot systems. The impact of this program on wetlands has not been fully recognized or mitigated. For example, return flows from flood-irrigated fields historically drained into wetlands on the Springer WHMA and provided a supplemental source of water. The amount of runoff has substantially decreased since several of those fields were converted to center pivot sprinkler systems.

Intensive Farming Practices that Impair Wetlands or Nesting Cover

Conversion to agricultural production was the leading cause of wetland losses nationally throughout the 20th century (Dahl 1990, 2000), and remained the second leading cause from 1998-2004 when urban and rural development was the leading cause (Dahl 2006). Ongoing conversions (drainage, tilling and planting) are comparatively minimal in Wyoming. However, if effective land conservation measures are not employed, certain farming practices may continue to adversely affect wetlands. Sediment runoff from tilled fields and heavily grazed pastures decreases the lifespan of ponds and wetlands, and impairs water quality. Agrichemical runoff, including fertilizers, pesticides, herbicides, and animal waste also adversely affect water quality, plant life, and wildlife. In some regions of the U.S., isolated wetlands continue to be drained and converted to agricultural production at a rapid pace.

Proximity to agricultural operations is factored into wetland integrity scores developed by Copeland et al. (2010) because specific agricultural practices can impair wetland functions. On the other hand, many wetlands in Wyoming exist as a direct byproduct of agriculture. For example, water supplies to most wetlands in the Laramie Basin are principally derived from irrigation flows and irrigation-enhanced groundwater tables (Peck and Lovvorn 2001; Lovvorn and Hart 2004; Peck et al. 2005). Numerous wetlands in Goshen Hole are also sustained by irrigation return flows, seepage along ditches and canals, and direct appropriations. In several cases, wetlands have been restored and created on agricultural lands through various federal and private cost-share and incentives programs. Adverse impacts of agriculture can be controlled and minimized by incorporating best management practices into agricultural operations. (Refer to: Oneale (1993), Nicholoff (2003), U.S. Environmental Protection Agency (2005), Welsch et al. (1995), WY Department of Environmental Quality (1997, 1999, 2004), McKinstry et al. (2004), Brockmann (1999), Niemuth, et al. (2004), and Tessmann (2004)). Most impacts arising from agricultural practices can be minimized or avoided by implementing appropriate best management practices (Dressing et al. 2003). Retaining adequate vegetated buffers is the most effective means of filtering sediment and contaminants and protecting shorelines from excessive erosion. Intact vegetation also provides forage and nesting, thermal, and escape cover for wildlife.

Grazing Management

Improperly managed grazing has been a dominant factor resulting in loss and degradation of wetland margins and riparian systems throughout the western U.S. (GAO 1988; Jensen and Platts 1989; U.S. Department of the Interior 1994). Uncontrolled livestock spend a disproportionate time within wetland margins and riparian areas where they find water, succulent forage, and favorable micro-climates including shade, wind reduction, and higher humidity (Eng et al. 1979; Skovlin 1984; Clary and Webster 1989; U.S.
For these reasons, the risk of damage to wetlands and riparian habitats is high, particularly under season-long grazing strategies (Clary and Webster 1989; Chaney et al. 1993; U.S. Department of the Interior 1994). Excessive grazing within wetland basins can remove vegetation cover, damage root mats, increase turbidity and siltation, and destroy nests of ground-nesting birds. However, adverse impacts are avoided or minimized by implementing appropriate grazing management systems and best management practices [http://www.epa.gov/oecaagct/anprgbmp.html], and by properly regulating distribution of cattle (Clary and Webster 1989; Chaney et al. 1993; Natural Resource Conservation Service 1997; U.S. Dept. Agriculture 1997; WY Dept. of Environmental Quality 1997; Smith et al. 1986; Ehrhart and Hansen 2004; Niemuth et al. 2004; and Tessmann 2004).

Invasive Plants

Invasive plants impair habitat functions of wetlands and riparian communities in many regions of the country. In Wyoming, problem species include: tamarisk (Tamarix spp.), Russian olive (Elaeagnus angustifolia), cheatgrass (Bromus tectorum), smooth brome (Bromus inermus), leafy spurge (Euphorbia esula), Russian thistle (Salsola kali), halogeton (Halogeton glomeratus), field bindweed (Convolvulus arvensis), purple loosestrife (Lythrum salicaria), common reed (Phragmites australis) and other designated noxious and prohibited weeds listed by the WY Dept. of Agriculture [http://wyagric.state.wy.us/divisions/techserv/docs/w&p_designated_list.pdf]. Russian olive is a popular species for landscaping and habitat plantings. Several species of wildlife benefit from the cover, forage, and nest sites it provides. However, higher densities of predators and competitive species are attracted to stands of Russian olive and can be detrimental to native wildlife adapted to open grasslands or shrub-steppe ecosystems. In addition, high transpiration rates in dense, monoculture stands of Russian olive can adversely affect wetland hydrology and stream base flows. The natural vegetation of an area should be emphasized when wetland projects are built. Nonnative and invasive plants should be eradicated where possible and their spread vigorously controlled. To date, grants totaling over $2.4 million have been awarded for invasive plant control by the Wyoming Wildlife and Natural Resources Trust Account.

Management and Maintenance of Wetland Projects

Most created wetlands rely on structural and mechanical features such as dikes, ditches, headgates, fences, and in some cases, mechanical pumps, all of which require periodic maintenance. Water control structures and fences can lapse into disrepair; erosion and rodent activity can damage earthen dikes; and personnel are not always present to monitor livestock or attend to water management. To sustain productive conditions, created wetlands and their watersheds should be managed through a prescribed regime of water level manipulations, vegetation treatments, and appropriate grazing and erosion control practices. Wetland projects are susceptible to failure unless management and maintenance responsibilities are contractually assigned and adequate resources are made available. Management and maintenance provisions should always be written into wetland project agreements and responsible parties identified (Erwin 1990; Jensen and Platts 1990; Levine and Willard 1990; Lowry 1990). Sufficient funding should be set aside to cover the costs of managing and maintaining wetland projects, and to correct project failures if necessary.

Recreational Use of Wetlands

Frequent disturbances by people, vehicles, and equipment can often result in loss of effective habitat for sensitive wildlife. However, Wyoming has a low human population density and continues to remain a predominantly rural state. For much of the year, disturbances associated with recreational activities are...
comparatively minimal in most wetlands throughout the state. Some notable and increasing exceptions include popular reservoirs and stream reaches that receive heavy pressure from boating, fishing, and other public uses, as well as wetlands near urban areas. During the fall and early winter, moderate hunting pressure on accessible lands can alter the distribution of migratory game birds and their use of wetlands for feeding and resting. To address this, the WGFD has closed hunting on several key areas that serve as refuges. A number of federal wildlife refuges operated by the USFWS are also present in strategic locations. Year round disturbances associated with housing subdivisions, road projects, and energy developments are increasing and pose a greater risk to the functional integrity of wetlands and riparian habitats. Reasonable access for wildlife- and wetland-dependent recreation is beneficial because this instills cultural values that translate into political and financial support for wetlands conservation programs. However, such access needs to be managed in sensitive nesting areas to prevent disturbance and possible destruction or abandonment of nest sites. (Nicholoff 2003; Patla and Lockman 2005). Disturbance problems can also be alleviated to some degree through public education, signing, or seasonal restrictions. (Nicholoff 2003:89).

Public Awareness and Support

Wetlands conservation has received a great deal of national attention since the 1960s and this is reflected in the numerous landmark legislative actions and federal programs designed to protect and restore the integrity of the nation’s wetlands and other waters. However, public awareness and vigilance are matters of ongoing urgency as efforts to modify the intent and interpretation of these legislative enactments continue. In particular, new legislation is acutely needed to clarify Federal Clean Water Act jurisdiction pursuant to the SWANCC and Rapanos and Carabell U.S. Supreme Court Cases. As of this writing, such legislation appears to be stalled in Congress. In addition, there is a need for greater awareness of floodplain functions and services including the importance of maintaining healthy riparian systems and instream flows. Public awareness can be achieved best through a program of continuing education, outreach, and effective use of media resources. A wetlands conservation website proposed in this strategy will help disseminate information about the importance of wetlands and riparian habitats in Wyoming and will provide access to a range of resources that can assist in their conservation.

Funding Availability

In Wyoming, wetlands conservation is not so much limited by the availability of funding as by constraints placed on how funds are used. Major sources of funding for wetlands conservation include the North American Wetlands Conservation Act (NAWCA), NRCS Wetlands Reserve Program (WRP), USFWS Partners for Fish and Wildlife program, and the Wyoming Wildlife and Natural Resource Trust Account (WWNRT) to name a few (see “EXISTING CONSERVATION PLANS AND INITIATIVES” – Page 90). However, funding from these programs is primarily available for construction and in general cannot be applied to technical services including project planning, permitting, and administration. The shortage of human resources dedicated to grant writing, project planning, and implementation limits our ability to capture the available funds to get more projects done on the ground. Many government agencies and nongovernmental organizations (NGOs) also face hiring freezes and personnel caps that preclude them from filling additional positions even if funds were available. A potential solution is to include or increase funding allocations for technical services in the various conservation programs and initiatives that fund wetlands projects. The effect of providing reimbursement for technical services will be a substantial increase in on-the-ground project delivery and fuller utilization of the available funding.
Wetlands Regulatory Programs

Good discussions of regulatory and non-regulatory wetland protection strategies can be found at:

[http://www.water.ncsu.edu/watershedss/info/wetlands/protect.html];
[http://www.epa.gov/owow/wetlands/pdf/reg_authority_pr.pdf];
[http://www.aswm.org/propub/statepartnership.pdf]; and
[http://www.aswm.org/propub/7_state_6_26_06.pdf].

Clean Water Act of 1972

Several provisions of the Clean Water Act (CWA) regulate activities that impact wetlands [http://www.wetlands.com/regs/tlpge02a.htm]. Section 101 sets forth the objectives of the Act, which are implemented largely through Title III (Standards and Enforcement) and Title IV (Permits and Licenses). Section 301 [Prohibitions] prohibits the discharge of pollutants into waters of the United States. Point source discharges are subject to permitting requirements under Section 402 [National Pollutant Discharge Elimination System] and Section 404 [Discharges of Dredge or Fill Material]. Section 401 [Certification] sets forth additional requirements for permit review and certification at the state level. Section 319 establishes a program to assist states with the abatement of nonpoint source pollution through federally-assisted watershed management practices. These regulatory programs are discussed in detail in the sections that follow.

Section 404

Section 404 of the Clean Water Act, administered by the Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (USACE), remains the nation’s principal wetlands protection law [http://www.epa.gov/OWOW/wetlands/regs/sec404.html]. Section 404 regulates discharge of dredged and fill materials into jurisdictional waters of the United States. Larger discharges (e.g., construction of a dam or marina), can only be authorized through issuance of individual permits preceded by a NEPA environmental impact statement. Smaller-scale discharges with minimal impact can be authorized through a system of nationwide permits [http://www.usace.army.mil/cccw/pages/nw_permits.aspx] and regional general permits [https://www.nwo.usace.army.mil/html/od-rwy/gpermits.htm]. The basic premise of the Section 404 regulatory program is that no discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation’s waters would be significantly degraded [http://www.epa.gov/owow/wetlands/pdf/reg_authority_pr.pdf].

In 1986, the Corps of Engineers issued interpretative jurisdictional guidelines that came to be known as the “Migratory Bird Rule” [51 Fed. Reg. 41206, 41217]. These guidelines specifically stated the agency had permitting jurisdiction over waters used to irrigate crops sold in interstate commerce, and waters that are, or could be used as a habitat by migratory birds or endangered species. This interpretation was based on the Commerce Clause of the U.S. Constitution, which gives the Congress power to regulate intrastate activities having a significant effect on interstate commerce. Since migratory birds cross state political boundaries and sustain various forms of commerce, the Corps interpreted that use of isolated ponds and wetlands by migratory birds was sufficient to confer jurisdiction under Section 404. The expanded jurisdictional interpretation provided effective protection for most wetlands and other waters throughout the United States, including isolated potholes, playas, small lakes and ponds, and wetlands along ephemeral and intermittent drainages.
The “Migratory Bird Rule” was ultimately challenged in a U.S. Supreme Court case – Solid Waste Agency of Northern Crook County (SWANCC) [531 U.S. 159 (2001)]. In a 5:4 split decision, the Court held that the Corps’ interpretation exceeded Congress’ scope of authority under the Commerce Clause: “The grant of authority to Congress under the Commerce Clause, though broad, is not unlimited” [531 U.S. 159 (2001)]. “Use of ‘isolated’ ponds by migratory birds does not confer jurisdiction” (ELI 2007:13).

A second Supreme Court case, Rapanos and Carabell (2006), attempted to clarify the geographic extent of the Corps jurisdiction under the CWA (i.e., the degree of connection that must exist between a wetland and a traditionally navigable water in order for the Corps to assert jurisdiction). In a 4:1:4 decision (1 vote abstained), the Court determined wetlands and streams must have a significant nexus to traditional navigable waters in order to be covered by the CWA, but did not agree on the factors necessary to establish whether a significant nexus does or does not exist. Instead, the issue has been returned to the lower courts for resolution [www.floods.org/PDF/Rapanos_Carabell_10-9-06.pdf]. The 2007 edition of the Clean Water Act Jurisdictional Handbook provides the following guidance: “A significant nexus exists where a wetland, either alone or in combination with similarly situated lands in the region, significantly affects the chemical, physical, and biological integrity of waters more readily understood as navigable.” (ELI 2007:18).

In 1993, the U.S. Army Corps of Engineers and EPA promulgated a regulation that defined “dredged and fill material” to include any substrate incidentally falling into a wetland from an apparatus used for dredging or ditching [58 FR 45008]. Known as the “Tulloch Rule,” this regulation gave the Corps jurisdiction under Section 404 to regulate wetland drainage and conversion on the basis of “incidental fallback” from equipment used to excavate ditches, even if the intent was to deposit the dredged material outside the wetland area. In 1997, the U.S. District Court for the District of Columbia set aside and invalidated the Tulloch Rule on the basis it exceeded Congressional intent regarding the scope of activities regulated under Section 404. The Corps appealed this decision, however the district court of appeals affirmed the lower court’s decision in 1998 and the case was never brought before the U.S. Supreme Court.
In 2001, the USACE and EPA promulgated a regulation that regarded the use of mechanized earth-moving equipment in streams and wetlands as resulting in a discharge of pollutants requiring a permit under the Federal Clean Water Act unless project-specific evidence demonstrates the dredging results in only incidental fallback into substantially the same place as the initial removal [66 FR 4549]. Known as Tulloch Rule II, this regulation addressed the loophole created by the Courts’ vacatur of the original Tulloch Rule. In 2007, the U.S. District Court for the District of Columbia issued an opinion that the revised Tulloch Rule also exceeded the scope of regulatory jurisdiction intended under Section 404.

In December, 2008 the EPA and Corps of Engineers released a revised regulatory guidance memo providing the following direction to agency staff:


The agencies will assert jurisdiction over the following waters:

- Traditional navigable waters;
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and
- Wetlands that directly abut such tributaries

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
- Wetlands adjacent to but that do not directly abut a relatively permanent; non-navigable tributary.

As a consequence of the Supreme Court’s rulings in the SWANCC and the Rapanos and Carabell cases, isolated wetlands lacking a significant nexus to traditional navigable waters no longer receive protection under Corps of Engineers or EPA regulation. As a consequence of the District of Columbia Court’s vacatur of the Tulloch rules, jurisdictional wetlands and other waters of the United States can be converted by ditching and draining. However, the Section 404 permitting process continues to provide a high degree of protection to traditional navigable waters, their tributaries, and wetlands that have a significant nexus to, or are hydrologically-connected with navigable waters. All permitting and jurisdictional determinations in Wyoming are handled through Wyoming Regulatory Office of the U.S. Army Corps of Engineers located in Cheyenne. [https://www.nwo.usace.army.mil/html/od-rwy/Wyoming.htm]
The 404(b)(1) Guidelines


The purpose of the 404(b)(1) guidelines is to restore and maintain the chemical, physical, and biological integrity of waters of the United States through the control of discharges of dredged or fill material in accordance with Section 404. The guidelines establish 4 conditions which must be satisfied in order to make a finding that a proposed discharge of dredged or fill material complies with the guidelines. No discharge of dredged or fill material shall be permitted if:

1. There is a practicable alternative to the proposed discharge which would have less adverse impact;
2. The proposed discharge would cause or contribute to violations of applicable State water quality standards or applicable toxic effluent standard under Section 307 of the Act; or jeopardize the continued existence of a species listed as endangered or threatened or results in the destruction or adverse modification of the species’ critical habitat;
3. The proposed discharge would cause or contribute to significant degradation of the waters of the United States; or
4. Appropriate and practicable steps have not been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

Nationwide and Region General Permits


Nationwide and regional general permits are intended to protect the aquatic environment and the public interest while effectively authorizing activities that have minimal individual and cumulative adverse effects on the aquatic environment. The Corps currently maintains 49 nationwide permits (NWPs) and 2 region general permits (RGPs) authorizing specific categories of dredge and fill activities that have minor impacts on jurisdictional wetlands and other waters of the United States. Nationwide permits are also subject to “general conditions” set forth at: https://www.nwo.usace.army.mil/html/od-rwy/gconditions.pdf. Pre-construction notification is required in accordance with General Condition No. 27 [https://www.nwo.usace.army.mil/html/od-rwy/pcn.pdf] when required by the terms of the NWP under which the prospective permittee plans to operate. The district engineer will notify the permittee whether the activity may proceed under the NWP along with any special conditions imposed by the district or division engineer. In addition, the Wyoming Regulatory Office has issued regional conditions (dated 11 May, 2007) for activities authorized by nationwide permits: https://www.nwo.usace.army.mil/html/od-rwy/wroconditions.pdf. Nationwide and general permits are also subject to Section 401 water quality certification by the Wyoming Department of Environmental Quality (discussed next).

Section 401 Water Quality Certification

Water quality standards are an effective tool available to states to protect wetlands resources and the valuable functions they provide, including shoreline stabilization, nonpoint source runoff filtration, wildlife
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habitat, and erosion control, which directly benefit adjacent and downstream waters. Water quality standards, including designated uses, criteria, and an anti-degradation policy can provide a sound legal basis for protecting wetland resources through state water quality management programs.

Pursuant to the authorities contained in Section 401 of the CWA, the Wyoming Department of Environmental Quality (DEQ) reviews all Section 404 individual permits issued by the Wyoming Regulatory Office of the USACE to determine if they comply with State water quality standards. A Section 401 certification letter is required before activities involving discharges to the waters of the State can be authorized by a Section 404 individual permit. In addition, DEQ has issued a Section 401 letter of certification (dated 20 March, 2007) with respect to activities authorized within Wyoming by USACE nationwide permits. DEQ’s review of the nationwide permits found that some were acceptable as written, some required additional conditions to assure compliance with State water quality standards, and a few were denied certification. Certification was waived for a number of nationwide permits that do not involve discharges to waters of the State, or have little or no applicability in Wyoming. DEQ’s Section 401 letter of certification for nationwide permits can be viewed at: http://deq.state.wy.us/wqd/watershed/Downloads/401/wdeq32007.pdf.

Section 402 CWA National Pollutant Discharge Elimination System
[http://cfpub.epa.gov/npdes/cwa.cfm?program_id=45]

The 1972 amendments to the Federal Water Pollution Control Act (known as the Clean Water Act or CWA) created the statutory authority for the National Pollutant Discharge Elimination System (NPDES) permit program and the basic structure for regulating the discharge of pollutants from point sources into waters of the United States. Section 402 of the CWA specifically required that EPA develop and implement the NPDES program. The CWA requires anyone who wants to discharge pollutants must first obtain and NPDES permit. Otherwise, the discharge is considered illegal. The CWA allows EPA to approve state-run NPDES permit programs, enabling states to perform many of the permitting, administrative, and enforcement aspects of the NPDES Program. The EPA approved Wyoming’s NPDES permit program in 1975.

Section 319 Non-point Source Management Program
[http://epa.gov/nps/cwact.html]

Under Section 319 of the CWA, states, territories, and Indian tribes receive grant money which supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects. The Wyoming Nonpoint Source Program (NPS) works through voluntary and incentive-based approaches to preserve and restore the quality of Wyoming’s surface water and groundwater resources. The Nonpoint Source Program relies largely on local voluntary implementation by individual landowners and land users in a cooperative effort to address water quality improvements through watershed planning. The Wyoming Nonpoint Management Plan can be downloaded from: http://deq.state.wy.us/wqd/watershed/nps/npspg.htm. Activities that produce NPS pollution generally fall into one or more of the following categories: silviculture, grazing, farming, feedlot management, hydrological modification, mining, oil and gas, roads, rural development, urban activities, and recreation. Best management practices to reduce nonpoint pollution from these sources are described at: http://deq.state.wy.us/wqd/watershed/nps/BMPs.htm.
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Swampbuster Provisions of the Food Security Act of 1985


The Highly Erodible Land Conservation and Wetland Conservation Compliance provisions known as “Swampbuster” were introduced in the 1985 Farm Bill, with amendments in 1990, 1996, and 2002. The purpose of these provisions is to remove certain incentives to produce agricultural commodities on converted wetlands or highly erodible land, unless the highly erodible land is protected from excessive soil erosion. Persons who plant an agricultural commodity on wetlands that were converted between December 23, 1985 and November 28, 1990 will be ineligible for Farm Bill program benefits in any year an agricultural commodity is planted unless an exemption applies. Persons who convert a wetland making production of an agricultural commodity possible after November 28, 1990, will be ineligible for program benefits until the functions of the wetland that was converted are mitigated or unless an exemption applies.

In order to determine compliance with the Swampbuster Provisions, the U.S. Department of Agriculture’s (USDA) NRCS will determine if a producer’s land has wetlands that are subject to the provisions. The agency maintains a list of the plants and combinations of soils and plants found in wetlands, and uses these technical tools, along with the hydrology of the area, to conduct determinations. These determinations stay in effect as long as the land is used for agricultural purposes or until the producer requests a review.

The Farm Bill allows producers to convert wetlands for production of an agricultural commodity if they compensate for the wetland functions that are lost. Landowners can work with USDA, conservation districts, or others to choose the best ways to mitigate wetlands. Landowners who want to convert or alter wetlands may enhance existing wetlands, restore former wetlands, or create new wetlands to offset functions and values that are lost from conversions or alterations. Wetland conversions authorized by Section 404 of the Clean Water Act will be accepted if the conversion activities are adequately mitigated.


Sec. 403 of the Tax Reform Act of 1986 eliminated federal tax incentives for draining wetlands by treating gains from sale of “converted wetlands” as ordinary income rather than the more favorable capital gains tax treatment. Section 1257(a) of the Internal Revenue Code stipulates, “Any gain on the disposition of converted wetland or highly erodible cropland shall be treated as ordinary income.”


Fish and Wildlife Coordination Act, 1958 Amendments

[http://www.fws.gov/habitatconservation/fwca.html]

The Fish and Wildlife Coordination Act (FWCA) provides the basic authority for the Fish and Wildlife Service’s involvement in evaluating impacts to fish and wildlife from proposed water resource development projects. It requires that fish and wildlife resources shall receive equal consideration to other project features. It also requires Federal agencies that construct, license or permit water resource development projects must first consult with the Service and the affected state’s fish and wildlife agency regarding the impacts on fish and wildlife resources and measures to mitigate those impacts.
**Executive Order 11990 – Protection of Wetlands**  
*(signed by President Jimmy Carter in 1977)*

[http://www.epa.gov/wetlands/regs/eo11990.html](http://www.epa.gov/wetlands/regs/eo11990.html)

Executive Order 11990 requires each federal agency “shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency’s responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; and (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.”

Section 1.(b) provides the following exception: “This Order does not apply to the issuance by Federal agencies of permits, licenses, or allocations to private parties for activities involving wetlands on non-Federal property.”

**Executive Order 11988 – Floodplains**  
*(signed by President Jimmy Carter in 1977)*

[http://www.epa.gov/owow/wetlands/regs/eo11988.html](http://www.epa.gov/owow/wetlands/regs/eo11988.html)

Perhaps the closest thing we have to a riparian habitat protection law, Executive Order 11988 requires each federal agency “shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.”

**Wyoming Wetlands Act and Mitigation Bank**

The Wyoming Wetlands Act [W.S. §§ 35-11-308 through 35-11-311] was passed by the Wyoming Legislature in 1991 and amended in 1994 [http://legisweb.state.wy.us/statutes/compress/title35.doc](http://legisweb.state.wy.us/statutes/compress/title35.doc). Section 309(a) of the Act declared all water, including collections of still water and waters associated with wetlands within the borders of this State are property of the State. The Act further declared water is one of Wyoming’s most important natural resources and the protection, development and management of Wyoming’s water resources is essential for the long-term public health, safety, general welfare and economic security of Wyoming and its citizens.

The two operative provisions of the Wyoming Wetlands Act are a notification requirement for persons intending to drain a wetland of 5 acres or more [Section 310], and the creation of a mitigation bank to consist of credits based on ecological functions and values of wetlands [Section 311]. The “Wyoming Statewide Wetland Mitigation Bank Guidelines for Interpretation and Implementation” can be downloaded from: [http://deq.state.wy.us/wqd/watershed/Downloads/Wetlands/wet_guidelines.pdf](http://deq.state.wy.us/wqd/watershed/Downloads/Wetlands/wet_guidelines.pdf).


The Society of Wetland Scientists position paper on mitigation banking can be downloaded from: [http://www.sws.org/wetland_concerns/banking.mgi](http://www.sws.org/wetland_concerns/banking.mgi).
Existing Conservation Plans and Initiatives In Wyoming

Ducks Unlimited (DU) Conservation Regions and Initiatives


- Maintain the integrity of existing wetlands – achieve a no net loss of wetlands and associated uplands within DU emphasis areas;
- Work with federal agencies and private landowners to create and enhance wetlands;
- Maintain strong funding for the North American Wetlands Conservation Act (NAWCA);
- Maintain strong funding for the Wetlands Reserve Program (WRP) and the conservation programs of the Farm Bill;
- Work with agencies and other organizations to protect large tracts of grasslands in areas with high wetland densities;
- Support the objectives of the joint ventures that deliver conservation within the 3 regions. [Includes the Intermountain West Joint Venture and Northern Great Plains Joint Venture in Wyoming];
- Apply GIS and remote sensing technologies to map and evaluate habitat; and
- Continue to support needed research.

Conservation strategies include:

- In the Rainwater Basin and along the Platte River corridor, Ducks Unlimited is finding innovative ways to protect, restore, and manage wetlands. With a combination of conservation easements, fee title acquisitions, and planned gifts; critical wetlands in the system are being permanently protected.

- DU developed the High Country Wetlands initiative to work with ranchers, farmers, public agencies and other conservation organizations across the Rocky Mountain range. This initiative primarily seeks to protect waterfowl breeding habitats through conservation easements, but also works to restore seasonal wetlands that have been drained or degraded.

DU was recently awarded 2 NAWCA standard U.S. grants to fund wetland and grassland conservation within the Platte River and Rainwater Basin Initiative area, which includes the lower North Platte River in Wyoming. Over the past 5 years, DU has expended approximately $1.5 million to protect wetlands and associated upland habitats in southern Goshen County, WY (Greg Kernohan pers. comm.). Much of the funding has been used for permanent conservation easements, however several wetlands creation and restoration projects are also being completed. DU has contributed funding annually to the U.S. Fish and Wildlife Service’s Partners for Fish and Wildlife Program and works closely with the program to develop additional projects throughout Wyoming, including projects in Crook, Fremont, Goshen, and Teton counties.

Since 1989, DU has worked with partners to conserve 3,194 acres of wetland habitat throughout Wyoming [http://www.ducks.org/Page1856.aspx]. In addition, DU has provided technical assistance to manage and improve over 110,000 acres of private uplands.

**USFWS Partners for Fish and Wildlife Program**

The U.S. Fish and Wildlife Service’s Partners Program (Partners) was established in 1987 to promote on-the-ground wetland restoration projects on private lands. The Wyoming program description can be downloaded from: http://ecos.fws.gov/docs/partners/web/pdf/563.pdf. The Partners’ Program has identified 8 focus areas in which the majority of staff time is expended to implement wetlands and upland habitat conservation projects in Wyoming (USFWS 2007). Partners focus areas include the Wind River, Goshen Hole, Bear River, Laramie Plains, Upper Green River, Upper Sweetwater/Red Desert, Powder/Tongue River, and Black Hills Mixed Grass focus area. Partners staff expend approximately 70% of their time in the two staffed focus areas – Wind River and Goshen Hole. The remaining 30% is allocated among the other 6 focus areas.

Statewide goals are to: restore 15,000 acres of wetlands; restore or enhance 5 million acres of upland habitat; restore 1,000 miles of riparian habitat; and restore 1,000 miles of in-stream habitat. Five-year targets for the 8 focus areas are to restore/enhance 1,270 acres of wetlands, 87,000 acres of uplands, and 209 miles of stream/riparian habitat including at least 46,000 ft. of in-stream work and fish barrier removal (USFWS 2007).
Natural Resources Conservation Service: Farm Bill Programs

The NRCS and Farm Service Agency administer 4 principal Farm Bill programs that provide funding and technical assistance for conservation and restoration of wetlands, watersheds, and wildlife habitat on private lands: the Wetland Reserve Program (WRP), Environmental Quality Incentives Program (EQIP), Wildlife Habitat Incentives Program (WHIP), and Grassland Reserve Program (GRP). A comprehensive guide to the 2008 Farm Bill for Fish and Wildlife Conservation (Gray 2009) can be downloaded from: http://www.wetlands.com/fed/aug93wet.htm.

Wetlands Reserve Program (WRP)

The WRP is the largest and best-funded wetlands conservation program administered by the NRCS. This voluntary program provides landowners financial incentives and technical assistance for restoring wetland functions and values while maximizing wildlife habitat benefits on eligible land. The program offers 3 enrollment options:

1. Permanent Easement – This is a conservation easement in perpetuity. In addition to paying for the easement, USDA pays up to 100 percent of the cost of restoring the wetland.

2. 30-Year Easement – Easement payments through this option are 75 percent of what would be paid for a permanent easement. USDA also pays up to 75 percent of restoration costs.

3. Restoration Cost-Share Agreement – This is an agreement (generally for a minimum of 10 years) to re-establish degraded or lost wetland habitat. USDA pays up to 75 percent of the cost of the restoration activity. This enrollment option does not place an easement on the property. Under all 3 options, any cost to the landowner can be covered through non-federal matching funds from the landowner or other partners.

Environmental Quality Incentives Program (EQIP)

EQIP is a voluntary conservation program for farmers and ranchers, which promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants with installation or implementation of structural and management practices on eligible agricultural land. EQIP provides payments of up to 75 percent of the incurred costs and income foregone as a result of certain conservation practices and activities. Payments may be higher for certain categories of agricultural operations. National priorities for EQIP include:

1. Reduction of nonpoint source pollution, such as nutrients, sediment, pesticides, or excess salinity in impaired watersheds consistent with EPA total maximum daily loads (TMDLs) where available as well as the reduction of groundwater contamination and reduction of point sources such as contamination from confined animal feeding operations;

2. Conservation of ground and surface water resources;
Wetlands

3. Reduction of emissions, such as particulate matter, nitrogen oxides (NOx), volatile organic compounds, and ozone precursors and depleters that contribute to air quality impairment violations of National Ambient Air Quality Standards;

4. Reduction in soil erosion and sedimentation from unacceptable levels on agricultural land; and


[http://www.or.nrcs.usda.gov/programs/eqip/fy10/ranking.html]

The Wyoming State Conservation Plan includes the following priorities for EQIP: grazing lands management; water quality, irrigation water management; wetlands; prevention of the conversion of agricultural lands to non-agricultural use; excessive erosion; streambank/riparian area protection; and fish and wildlife habitat. EQIP funding can be used in Wyoming to implement projects in these categories to meet the national priorities. Statistics are not available regarding the number or acreage of wetland and riparian projects funded through EQIP in Wyoming.

Wildlife Habitat Incentive Program (WHIP)

[http://www.nrcs.usda.gov/programs/whip/]

WHIP is a voluntary program for landowners who want to develop and improve wildlife habitat on agricultural land, nonindustrial private forest land, and Indian land. The NRCS administers WHIP to provide both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. WHIP cost-share agreements between NRCS and the participant generally last from one year after the last conservation practice is implemented to not more than 10 years from the date the agreement is signed.

National priorities for WHIP include:

1. Promote the restoration of declining or important native fish and wildlife habitats;
2. Protect, restore, develop or enhance fish and wildlife habitat to benefit at-risk species;
3. Reduce the impacts of invasive species on fish and wildlife habitats; and
4. Protect, restore, develop or enhance declining or important aquatic wildlife species’ habitats.

The Wyoming WHIP Plan sets forth the following priorities:

1. Riparian and Wetland Areas:
   Emphasize projects that will benefit rare and declining species or species of concern, including but not limited to: cold water fisheries, sage grouse, turkey, neotropical birds, bald eagle, waterfowl, deer, elk, moose, and amphibians. Practices will focus on: fencing with livestock management and off-site water developments; stream restoration; removal of barriers to fish movement; herbaceous or woody plantings; and creation or enhancement of shallow water areas for wetland dependent wildlife.

2. Upland Projects (grassland and shrub-steppe):
   Emphasize projects that will benefit rare and declining species or species of concern, including but not limited to: sage-grouse, Cassin’s sparrow, lark bunting, and sage sparrow. Other target species that benefit include antelope, mule deer and elk. Practices to be applied may include: shrub thickets; grass or legume seedings; water facilities such as guzzlers; brush management; aspen stand regeneration; fencing and livestock management; water developments; and prescribed burnings.
WHIP funding can be used to implement riparian, wetland, and upland projects to meet the national priorities. Statistics are not available regarding the number or acreage of wetland and riparian habitat projects funded through WHIP in Wyoming.

### Grassland Reserve Program (GRP)

The GRP is a voluntary program that helps landowners and operators restore and protect grasslands, including rangeland and pastureland, and certain other lands, while maintaining the areas as grazing lands. Participants voluntarily limit future use of the land while retaining the right to conduct common grazing practices; produce hay, mow, or harvest for seed production (subject to certain restrictions during the nesting season of bird species that are in significant decline or those that are protected under Federal or State law); and conduct fire rehabilitation and construct firebreaks and fences. The program offers several enrollment options including 10-year, 15-year, 20-year, or 30-year rental agreements; permanent easements; 30-year easements; and restoration agreements.

Grassland restoration and protection projects can be designed to complement wetland conservation by improving watershed functions and by promoting nesting cover for a variety of waterfowl and other wetland-associated bird species.

### North American Wetlands Conservation Act

The North American Wetlands Conservation Act of 1989 (NAWCA) was passed, in part, to support activities under the North American Waterfowl Management Plan, an international agreement that provides a strategy for the long-term protection of wetlands and associated uplands habitats needed by waterfowl and other migratory birds in North America. In December 2002, Congress reauthorized the Act and expanded its scope to include the conservation of all habitats and birds associated with wetlands ecosystems.

NAWCA provides matching grants to organizations and individuals who have developed partnerships to carry out wetlands conservation projects in the United States, Canada, and Mexico for the benefit of wetlands-associated migratory birds and other wildlife.

Funding is administered through “Standard Grants” and “Small Grants” programs. Both are competitive and require that grant requests must be matched by partner contributions at no less than a 1:1 ratio. Funds from U.S. federal sources may contribute toward a project, but are not eligible as match. In order to successfully compete for NAWCA funding, projects generally provide at least a 2:1 nonfederal match ratio.

The Standard Grants Program supports projects in Canada, the United States, and Mexico that involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats. The Small Grants Program operates only in the United States, but supports the same type of projects and adheres to the same selection criteria and administrative guidelines as the U.S. Standard Grants Program. However, project activities are usually smaller in scope and less costly. Small grants may not exceed $75,000, and funding priority is given to grantees or partners new to the Act’s grants program.
Since its inception in 1989 through June, 2010, NAWCA funded 2,015 small and large project grants totaling $1.05 billion in North America [http://www.fws.gov/birdhabitat/Grants/NAWCA/index.shtm]. The FY 2010 Congressional appropriation for NAWCA totaled $47,647,000. As of this publication, a single standard U.S. grant of $109,162 and 4 small grants totaling $152,680 in NAWCA funding have been awarded exclusively within Wyoming.


Two multi-state standard U.S. grants have been awarded to Ducks Unlimited through the Playa Lakes Joint Venture to support projects in the Platte River confluence region of SW Nebraska, NE Colorado, and SE (specifically Goshen County) Wyoming. Platte River Confluence Phase I, approved in 2007, was funded at $1 million with $2.3 million in matching funds. Platte River Wetlands Partnership II, approved in March, 2009, was also funded at $1 million with $2.1 million in matching funds.

[Ducks Unlimited administered a portion of the 2007 grant along with other funding to accomplish significant wetlands conservation work in Goshen County, WY. Many of the Wyoming projects involved conversion of short-term conservation easements into permanent easements to extend protection of USFWS Partners Program wetlands. DU has also built or enhanced several wetlands that will be protected by permanent conservation easements. Goshen County is included in the geographic area covered by the 2009 Partnership II grant as well.

Two other multi-state standard U.S. grants were awarded to the Teton Regional Land Trust, Inc. based in Driggs, ID for easement acquisitions primarily in Teton County, Idaho. The geographic area covered by the grants extends into a small portion of Teton County, WY. The Teton River Basin drains westerly from the Teton Range into Idaho and includes approximately 15 mi² of private land on the Wyoming side near Alta. “Teton River Basin Wetlands Conservation Phase III,” approved in 2002, was funded at $1 million with $5,340,221 in matching funds. “Conservation of Priority Wetland Bird Focus Areas, Teton River Basin,” approved in 2005, was also funded at $1 million with $13,671,151 in matching funds. [http://www.fws.gov/birdhabitat/Grants/NAWCA/Standard/US/Wyoming_Std.shtm].

**Intermountain West Joint Venture (IWJV)**

[http://www.iwjv.org/about.htm].


The IWJV was established in 1994 with the following mission statement, “Our mission is to facilitate the long-term conservation of key avian habitat including planning, funding, and developing habitat projects that benefit all biological components of Intermountain ecosystems.” The original administrative boundary of the IWJV included all of Wyoming, but was modified after 2002 to exclude 7 counties in NE Wyoming, which are now part of the Northern Great Plains Joint Venture.

The primary purpose of the Wyoming Implementation Plan is to assist the IWJV Management Board in reviewing and ranking habitat protection, restoration and enhancement projects for potential funding
through the North American Wetlands Conservation Act and other programs. The Implementation Plan identifies priority bird species and lists statewide conservation goals for priority habitats (such as total acreage protected, maintained, enhanced, or restored). The plan also identifies 48 bird habitat conservation areas of which half are primarily wetland or riparian complexes. As of this publication, the IWJV Management Board has not recommended a large-scale project for Standard Grant funding exclusively or predominantly within Wyoming. One standard grant of $109,162 (Green River Wetlands) was approved in 1996. Four small grant projects have received NAWCA funding totaling $152,680 along with an additional $428,935 in matching and non-matching funds.

A wetland demonstration project at the Teton Science School (Jackson, WY) received $15,000 from the IWJV Cost Share Program in 2006. In 2008, a 3-year commitment of Capacity Grant funding ($15,000/year) was made to help support a shared NRCS Wildlife Biologist position working on farm bill projects within the Wyoming Landscape Conservation Initiative area. In 2009, The Nature Conservancy was awarded a $15,000 Capacity Grant to conduct a project readiness assessment of 3 focus areas – Bear River, Goshen County, and Little Snake River/Muddy Creek watershed. In 2010, The Nature Conservancy was awarded an additional $15,000 Capacity Grant to fund an “implementation partnership for a Wetland Reserve Program (with reserved grazing) pilot project in Wyoming.”

<table>
<thead>
<tr>
<th>Year</th>
<th>Project Name</th>
<th>NAWCA Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Wyoming North Platte Wetlands Initiative</td>
<td>$75,000</td>
</tr>
<tr>
<td>2002</td>
<td>Lower Green River Wetland Restoration Project</td>
<td>$49,072</td>
</tr>
<tr>
<td>1997</td>
<td>Wetland Creation Riparian Enhancement Beaver</td>
<td>Not Specified</td>
</tr>
<tr>
<td>1996</td>
<td>Cottonwood Creek Riparian Habitat Protection &amp; Enhancement</td>
<td>Not Specified</td>
</tr>
<tr>
<td>1996</td>
<td>Green River Wetlands</td>
<td>$109,162</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>$261,842</td>
</tr>
</tbody>
</table>

Northern Great Plains Joint Venture (NGPJV)

[http://www.northerngreatplainsjointventure.org]

Migratory Bird Management for the Northern Great Plains Joint Venture: Implementation Plan

[http://www.northerngreatplainsjointventure.org/downloads.php]

The Northern Great Plains Joint Venture was established in 2002 with the following mission statement, “The mission of the Northern Great Plains Joint Venture is to seek out new opportunities and foster new partnerships while strengthening existing alliances for the protection, enhancement and restoration of prairie, riverine and forest ecosystems. These conservation actions will place an emphasis on sustaining and enhancing populations of migratory birds, resident birds and wildlife consistent with current and future formal bird conservation objectives as expressed in regional, national and international plans.” After its formation in 2002, the administrative boundary of the NGPJV was expanded to include 7 counties in NE Wyoming: Campbell, Converse, Crook, Johnson, Niobrara, Sheridan, and Weston.

The purpose of the NGPJV Implementation Plan is to “… contribute to the attainment of continental population goals, developed by all major bird initiatives, by strategically delivering habitat conservation within the NGP ecosystem” (Pool and Austin 2006). The geographic area covered by this plan is closely aligned with Bird Conservation Region (BCR) 17 of the North American Bird Conservation Initiative (NABCI).
Conservation and implementation goals are described at a programmatic level, although specific goals are not established for each state. The programmatic goal most relevant at the state level is to, “design [projects] at multiple spatial scales (e.g., eco-region, landscape, project). Working groups will be encouraged to develop plans that outline the habitat improvements needed in each [scale] and to use the acreage objectives to estimate the ability of those improvements to contribute to the BCR’s bird population goals.” As of this publication, NGPJV has been engaged primarily in planning activities and is a cooperator in the development of a NE Wyoming regional component of this statewide Wetlands Conservation Strategy.

[http://www.partnersinflight.org/description.cfm]

Major purposes of the Wyoming Bird Conservation Plan are to identify priority species and habitats and to establish objectives for bird populations and habitats in Wyoming. The plan describes conceptual objectives at statewide and landscape scales. However, the objectives are not stepped down to regional and local scales. Wetland “best management practices” are described in the plan and could improve the functional integrity of wetlands if implemented on a watershed scale. The Wyoming Bird Conservation Plan can be accessed at: [http://www.blm.gov/wildlife/plan/WY/menu.htm](http://www.blm.gov/wildlife/plan/WY/menu.htm). The wetland component can be downloaded from: [http://www.blm.gov/wildlife/plan/WY/Wetlands.htm#wetlands](http://www.blm.gov/wildlife/plan/WY/Wetlands.htm#wetlands).

**Audubon Wyoming**
[http://www.audubonwyoming.org/]

Audubon Wyoming’s goal is to protect and restore bird populations and important bird habitats, and build a network of citizen scientists to carry out on-the-ground conservation work and education programs throughout the state. Main areas of conservation are the Species Survival Plan
[http://www.audubonwyoming.org/BirdSci_SSP.html];

Important Bird Areas (IBA) Program
[http://www.audubon.org/bird/IBA/];

and MAPS Bird Banding Program

Thirty-nine Important Bird Areas (IBAs) are currently recognized in Wyoming (Table 4). Most IBAs include wetlands and/or riparian habitats.

Table 4. Audubon important bird areas in Wyoming. *(see next page)*
<table>
<thead>
<tr>
<th>IBA Name</th>
<th>Status</th>
<th>Priority</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Alkali and Beck Lakes</td>
<td>Recognized</td>
<td>State Park</td>
<td></td>
</tr>
<tr>
<td>2. Alpine Wetland</td>
<td>Recognized</td>
<td>State Lincoln</td>
<td></td>
</tr>
<tr>
<td>4. Breteche Creek Ranch</td>
<td>Recognized</td>
<td>State Park</td>
<td></td>
</tr>
<tr>
<td>5. Canyon Creek</td>
<td>Recognized</td>
<td>State Park</td>
<td></td>
</tr>
<tr>
<td>6. Chapman Bench</td>
<td>Recognized</td>
<td>State Sweetwater</td>
<td></td>
</tr>
<tr>
<td>7. Cokeville Meadows National Wildlife Refuge</td>
<td>Recognized</td>
<td>State Lincoln</td>
<td></td>
</tr>
<tr>
<td>8. Commissary Ridge Raptor Migration Route</td>
<td>Recognized</td>
<td>State Lincoln, Sublette, Uinta</td>
<td></td>
</tr>
<tr>
<td>9. Edness Kimball Wilkens State Park</td>
<td>Recognized</td>
<td>State Natrona</td>
<td></td>
</tr>
<tr>
<td>10. Flat Creek Marshes and Wetland Complex</td>
<td>Recognized</td>
<td>State Teton</td>
<td></td>
</tr>
<tr>
<td>11. Grand Teton National Park</td>
<td>Recognized</td>
<td>State Teton</td>
<td></td>
</tr>
<tr>
<td>12. Gros Ventre Riparian Complex</td>
<td>Recognized</td>
<td>State Park</td>
<td></td>
</tr>
<tr>
<td>13. Heart Mountain</td>
<td>Recognized</td>
<td>State Park</td>
<td></td>
</tr>
<tr>
<td>14. Jackson Canyon Eagle Roost</td>
<td>Recognized</td>
<td>State Natrona</td>
<td></td>
</tr>
<tr>
<td>15. Laramie Greenbelt</td>
<td>Recognized</td>
<td>State Albany</td>
<td></td>
</tr>
<tr>
<td>16. Laramie Plains Lakes Complex</td>
<td>Recognized</td>
<td>State Albany</td>
<td></td>
</tr>
<tr>
<td>17. Lions Park</td>
<td>Recognized</td>
<td>State Laramie</td>
<td></td>
</tr>
<tr>
<td>18. Little Sandy Landscape</td>
<td>Recognized</td>
<td>State Fremont, Sublette, Sweetwater</td>
<td></td>
</tr>
<tr>
<td>19. Loch Katrine Wetland</td>
<td>Recognized</td>
<td>State Park</td>
<td></td>
</tr>
<tr>
<td>20. Muddy Creek Wetlands</td>
<td>Recognized</td>
<td>State Carbon</td>
<td></td>
</tr>
<tr>
<td>21. Ninemile Draw</td>
<td>Recognized</td>
<td>State Fremont</td>
<td></td>
</tr>
<tr>
<td>22. Pathfinder National Wildlife Refuge</td>
<td>Recognized</td>
<td>State Natrona</td>
<td></td>
</tr>
<tr>
<td>23. Powder Rim</td>
<td>Recognized</td>
<td>State Sweetwater</td>
<td></td>
</tr>
<tr>
<td>24. Red Desert</td>
<td>Recognized</td>
<td>State Fremont, Sweetwater</td>
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</tr>
<tr>
<td>25. Seedskadee National Wildlife Refuge</td>
<td>Recognized</td>
<td>State Sweetwater</td>
<td></td>
</tr>
<tr>
<td>26. Shamrock Hills Raptor Concentration Area</td>
<td>Recognized</td>
<td>State Carbon</td>
<td></td>
</tr>
<tr>
<td>27. Shirely Basin</td>
<td>Recognized</td>
<td>State Carbon, Natrona</td>
<td></td>
</tr>
<tr>
<td>28. Snowy Range Peaks</td>
<td>Recognized</td>
<td>State Albany</td>
<td></td>
</tr>
<tr>
<td>29. Soda Lake</td>
<td>Recognized</td>
<td>State Natrona</td>
<td></td>
</tr>
<tr>
<td>30. Soda Lake Wildlife Habitat Management Area</td>
<td>Recognized</td>
<td>State Sublette</td>
<td></td>
</tr>
<tr>
<td>31. South Park Wildlife Habitat Management Area</td>
<td>Recognized</td>
<td>State Teton</td>
<td></td>
</tr>
<tr>
<td>32. Tensleep Preserve</td>
<td>Recognized</td>
<td>State Washakie</td>
<td></td>
</tr>
<tr>
<td>33. Teton Basin</td>
<td>Recognized</td>
<td>State Teton</td>
<td></td>
</tr>
<tr>
<td>34. The Nature Conservancy, Red Canyon Ranch</td>
<td>Recognized</td>
<td>State Fremont</td>
<td></td>
</tr>
<tr>
<td>35. The Nature Conservancy, Sweetwater River Project Area</td>
<td>Recognized</td>
<td>State Fremont</td>
<td></td>
</tr>
<tr>
<td>36. Thunder Basin National Grasslands</td>
<td>Recognized</td>
<td>State Campbell, Converse, Crook, Niobrara, Weston</td>
<td></td>
</tr>
<tr>
<td>37. Wyoming Hereford Ranch</td>
<td>Recognized</td>
<td>State Laramie</td>
<td></td>
</tr>
<tr>
<td>38. Yellowstone National Park</td>
<td>Recognized</td>
<td>State Park</td>
<td></td>
</tr>
<tr>
<td>39. Yellowtail Wildlife Management Area</td>
<td>Recognized</td>
<td>State Big Horn</td>
<td></td>
</tr>
</tbody>
</table>
Green River Trumpeter Swan Range Expansion Project

The WGFD began efforts as early as 1988 to establish a breeding population of swans in the Green River Basin of southwestern Wyoming (Patla and Lockman 2004; Patla and Oakleaf 2004; Lockman 2005). A nesting population was successfully established through release of captive-reared swans from 1994-2002. To provide additional shallow water summer habitat for this expanding flock of resident swans, a State Wildlife Grant was obtained in 2003 to identify potential wetlands projects on private lands. Plans were developed for over 20 projects – 4 projects have been completed to date.

Basin Management Plans – WGFD Fish Division

(WGFD basin plans are accessible through the WGFD intranet or by request).

The Fish Division manages aquatic resources through an integrated program of protection, regulation, propagation, restoration, and control to provide diverse, quality fisheries resources and angling opportunities. Basin management plans have been developed to summarize basic fisheries management information and goals for each basin. The plans provide management goals and objectives along with a summary of the aquatic wildlife communities, habitat conditions and wild brood stocks in each basin. Several basin plans also include a general description of watershed characteristics and stressors (land uses) that influence water quality and quantity and fish habitat. However, the primary focus is currently on fisheries management, with some limited attention given to wetlands and riparian habitat conditions.

Aquatic management is broadening from a traditional sport fish focus to include all aquatic wildlife and a watershed approach. Collaborative relationships with other state and federal agencies enhance the ability to gather information and promote management actions to maintain, enhance and restore native aquatic species. Substantial attention is given to evaluating potential impacts of land management activities through NEPA commenting on proposed projects.

State Wildlife Action Plan (SWAP) and State Wildlife Grants (SWG)

(formerly, “Comprehensive Wildlife Conservation Strategy for Wyoming” or CWCS)

The SWAP is a long-range plan to conserve Wyoming’s Species of Greatest Conservation Need (SGCN) that was developed to meet the requirements of the Congressionally-authorized State Wildlife Grants (SWG) Program. The plan identifies SGCN, key habitats, and conservation challenges statewide. Habitat quality or “intactness” was estimated using a modeling approach (Copeland et al. 2007) to assess the condition of ecological systems (Comer et al. 2003) throughout Wyoming. The 2005 CWCS did not contain a wetlands conservation section, however the 2010 update has incorporated many elements of this Wetlands Conservation Strategy.
The Nature Conservancy

The mission of The Nature Conservancy (TNC) is to preserve the plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. TNC does this primarily through acquisitions of lands and easements to protect important representative communities and habitats in their natural state.

TNC recently completed a statewide wetland evaluation and risk assessment (Copeland et al. 2010) – also see 2009 Wetlands Assessment on page 66. The Nature Conservancy’s study produced a statewide inventory of wetland complexes and condition metrics used in this Wetlands Conservation Strategy, and is relied upon as a principal source of information for the wetlands section of the 2010 SWAP update (discussed above). The main purpose of TNC’s wetland condition dataset is to assist managers and NGOs in determining where to focus conservation efforts. Functional wetland complexes were identified based on several spatially defined criteria including mean wetland patch size, mean wetland densities, and distance between wetlands. The condition or integrity assessment was based on distances to features known to impair wetland functions, for example distances to roads, dams, pipelines etc. Another descriptive data layer depicts the protection status of wetlands within various terrestrial habitat types. Future site conditions (vulnerability) were modeled and “at risk” areas identified. The conceptual modeling process is described in Copeland et al. (2007).

Land Trusts

Four principal land trusts operate in Wyoming. They include The Nature Conservancy (discussed above), the Jackson Hole Land Trust, The Green River Valley Land Trust, and the Wyoming Stock Growers Agricultural Land Trust. The Wyoming Wildlife and Natural Resource Trust (next section) also funds conservation easements. In addition, a national land trust organization, The Conservation Fund, maintains a field office in Jackson, WY. The Conservation Fund finances short-term acquisitions for other partners to protect key vulnerable lands through a revolving fund [http://www.conservationfund.org/revolving-fund]

The Jackson Hole Land Trust [http://www.jhlandtrust.org/] was founded in 1980 as a non-profit organization with the sole purpose of preserving the scenic, ranching, and wildlife values in and around Jackson Hole. Since that time, the organization has ensured the permanent protection of over 20,000 acres. During Winter, 2009 the Jackson Hole Land Trust launched an affiliated conservation effort, the Wind River Program to focus on conserving important scenic, agricultural and wildlife values in the upper Wind River watershed area [http://www.jhlandtrust.org/pdfs/NewConservationFocusWindRiverWatershed.pdf].

The Green River Valley Land Trust [http://www.grvlandtrust.org/] was founded in 2000 by a group of ranchers, teachers and local business owners who wanted to provide landowners, particularly working ranchers, with a voluntary way to conserve their land and the wildlife habitat and agricultural heritage it provides. To date, this land trust has worked with more than 46 families to conserve nearly 30,000 acres of working ranchland, wildlife habitats and scenic views in Sublette County. In 2010, the Green River Valley Land Trust expanded its focus area statewide and became the Wyoming Land Trust.

The Wyoming Stock Growers Agricultural Land Trust [http://www.wsgalt.org/] is dedicated to conserving Wyoming’s working family farms and ranches and the wide open spaces, natural habitats, and western
lifestyle they support. Founded in December of 2000, the Wyoming Stock Growers Agricultural Land Trust already holds 41 conservation easements on 108,115 acres of ranchland. Additional conservation easements are being negotiated throughout the State.

Wyoming Wildlife and Natural Resource Trust

[http://wwnrt.state.wy.us/]

The Wyoming Legislature created the Wyoming Wildlife and Natural Resource Trust (WWNRT) in 2005. The WWNRT is funded by interest earned on a permanent account, donations, and legislative appropriations. Its purpose is to enhance and conserve wildlife habitat and natural resource values throughout the state. Any project designed to improve wildlife habitat or natural resource values is eligible for funding. Projects with multiple partners and cost share contributions tend to rank higher in the selection process. An important service of the WWNRT is to provide a state source of funding that meets the non-federal match requirement of federal funding programs such as NAWCA, WHIP, WRP, and SWG.

From its inception through 2009, the WWNRT provided more than $7.7 million to help fund 76 projects directly or indirectly benefiting wetlands and riparian habitats throughout Wyoming. These WWNRT contributions helped leverage an additional $54.4 million from other sources. The WWNRT has helped fund several wetland creation and enhancement projects as well as wetland and riparian habitat restoration and stream improvements. The greater share of funding has been applied to conservation easements and efforts to control invasive plants that spread into wetland and riparian areas. Projects benefiting wetlands and riparian habitats accounted for over 50% of total WWNRT funding from 2005 through 2009. WWNRT funds cannot be used for fee simple acquisition of real property or to purchase water rights.

Federal Land Management Plans and Planning Processes

Public involvement in federal land use planning can influence a range of management practices and other actions and activities on public lands. Three principal agencies manage land and water resources that can affect wetlands and riparian habitats in Wyoming. The Bureau of Land Management (BLM) is responsible for multiple use management of public lands comprising 28% of the State’s surface. The BLM periodically updates resource management plans, as appropriate, for each of its 10 districts in Wyoming [Ref: 43 USC 1712]. Resource management plans and plan revisions can be viewed at: http://www.blm.gov/rmpweb/ and http://www.blm.gov/wy/st/en/programs/Planning/rmps.html.

The U.S. Forest Service (USFS) manages national forest system lands covering 15% of Wyoming. The USFS periodically updates forest management plans for each of the 10 national forest units in Wyoming [Ref: 16 USC 1604]. Forest management plans can be downloaded at: http://www.fs.fed.us/r2/projects/.

The Bureau of Reclamation (BOR) manages 59,960 acres (just 0.1% of Wyoming), but regulates dam operations at 21 reservoirs that affect flow regimes, wetlands, and riparian habitats along several hundred miles of streams. The most significant operation involves the 7 BOR facilities along the North Platte River, a completely regulated stream system. The BOR does not operate under a comprehensive management plan such as those prepared by the U.S. Forest Service and Bureau of Land Management. The BOR's operations are governed primarily by average historic allocations of water use and annual variations in water yield (John Lawson, pers. comm.). NEPA documents are prepared whenever a significant change in operational allocations is proposed. For example, the North Platte River EIS was developed when the Bureau was
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required to modify water releases to restore habitat for endangered species in central Nebraska. [see: http://platteriverprogram.org/default.aspx; and http://cwcb.state.co.us/WaterSupply/EndangeredSpecies/PlatteRiverRecovery/]

The BOR also prepares annual operations plans for major project areas such as the North Platte River, but these are not subject to a formal public review. The Wyoming Area Office of the BOR holds two informal public meetings per year (spring and fall) to receive input regarding water operations in Wyoming. In addition, the BOR maintains a public involvement link on its website at: http://www.usbr.gov/gp/wyao/.

Wyoming Landscape Conservation Initiative

[http://www.wlci.gov/]

The Wyoming Landscape Conservation Initiative (WLCI) is a long-term, science-based, collaborative effort to ensure Wyoming’s wildlife and crucial habitats are fully considered and addressed in the face of increasing land use pressures. The mission of the WLCI is to implement a long-term science-based program to assess and enhance the quality and quantity of aquatic and terrestrial habitats at a landscape scale in southwest Wyoming, while facilitating responsible development through local collaboration and partnerships. Cooperating agencies implementing the WLCI include the BLM, USFWS, WGFD, USFS, U.S. Geological Survey (USGS), Wyoming Department of Agriculture, and southwest Wyoming conservation districts and county commissions. Funding is provided through an annual appropriation from the USFWS, BLM, and USGS budgets totaling approximately $4.5 million. Additional funding is provided through independent donations. The geographic area covered by the WLCI is the portion of Wyoming west of the Continental Divide and all of Carbon County. The WLCI strategic plan can be downloaded from: http://my.usgs.gov/Public/WLCI/Bibliography/WLCI_Strategic_Plan_final.pdf.

To date, the WLCI has funded 17 projects directly or indirectly benefiting wetlands and riparian habitats. Among these are 11 noxious weed control projects, 3 conservation easements, 2 riparian habitat treatments, and 1 wetland enhancement project.

Wyoming Statewide Comprehensive Outdoor Recreation Plan

[http://wyoparks.state.wy.us/PlanningDocs/scorp/ch5.pdf]

The plan must contain or reference a wetlands priority component consistent with the Section 303 of the Emergency Wetlands Resources Act of 1986. At a minimum, the wetland component must:

1) Be consistent with the National Wetlands Priority Conservation Plan, prepared by the U.S. Fish and Wildlife Service;

2) Provide evidence of consultation with the state agency responsible for fish and wildlife resources;

3) Contain a listing of those wetland types which should receive priority for acquisition; and

4) Consider outdoor recreation opportunities associated with its wetland resources for meeting the State’s public outdoor recreation needs.
To our knowledge, no LWCF grants have been expended exclusively to acquire, protect or enhance wetlands in Wyoming. A handful of small stream and riparian areas have been encumbered by virtue of easements for recreation facilities developed on the same property and funded through LWCF grants.

A detailed inventory and prioritization of important wetland areas was developed for the 1995 SCORP, but the final published version only included a generalized list of water basins. The original detailed inventory and prioritization were reinstated in the 2008 SCORP update. In order to be eligible for LWCF funding, a project must include a recreation facility of some sort. Counties and municipalities have been the principal entities applying for grants through the LWCF in Wyoming. The possible use of LWCF funds for wetland acquisition and improvements to support wetland-based recreation needs to be investigated further. The State apportionment of LWCF funds has been nominal in recent years and is not expected to be a significant source of funding for wetland acquisitions in the near term. The total nationwide allocation for FY 2010 was just $38 million and Wyoming’s apportioned share was $334,458. However, the Obama Administration has committed to achieve the authorized full funding level of $900 million for the overall LWCF Program by 2014 [http://www.nps.gov/ncrc/programs/lwcf/funding.html]. If this happens, the LWCF could become a very important source of additional funding for wetlands conservation.

Wyoming Nonpoint Source Management Plan:
Watershed Planning Program

[http://deq.state.wy.us/wqd/watershed/#Planning]

The Wyoming Nonpoint Management Plan is effectively the State’s implementation plan for Section 319 of the CWA. The plan recognizes the importance of wetlands and riparian zones in a watershed approach to water quality management. The plan further recognizes natural wetlands are waters of the State that are protected from impairment caused by point and nonpoint sources. A Section 401 water quality certification is required for discharges into wetlands. The Nonpoint Management Plan includes a Wetlands Protection section and also summarizes the range of other state and federal programs that address wetlands management, protection, restoration and mitigation. DEQ plans to integrate wetlands monitoring into its surface water quality monitoring program and has contributed funding to complete digitization of the National Wetland Inventory in Wyoming. DEQ also funded “A geospatial assessment of the distribution, condition, and vulnerability of Wyoming’s wetlands” (Copeland et al. 2010).

Wyoming State Water Plan

[http://waterplan.state.wy.us/frameworkplan-index.html]

The Wyoming Statewide Framework Water Plan provides future water resource planning direction for the State of Wyoming. The plan contains an inventory of the state’s water resources and related lands, a summary of the state’s present water uses, a projection of future water needs, and identification of alternatives to meet future water needs. Eight individual basin plans accompany the statewide framework plan. Wetlands are addressed in the context of an environmental consumptive use of water, a watershed management component, wildlife habitat, a source of recreation, and a resource that potentially must be mitigated if impacted by water development projects.
The plan includes a summary of potential water development projects and future water consumption needs that may impact wetlands as well as provide opportunities for wetlands enhancement and mitigation. In addition, the plan contains a discussion of interstate compacts, international treaties, court decrees, and contracts and agreements that can have a bearing on water availability for wetlands projects in specific geographic locations and drainages.

Wetlands and Riparian Habitat Conservation Strategies

A broad range of conservation programs are being applied by numerous agencies and organizations to restore, protect, manage, create, and enhance wetlands and riparian habitats throughout the Intermountain West. Relevant management and conservation practices are described in detail by Ehrhart and Hansen (2004); Niemuth et al. (2004); and Tessmann (2004). The EPA promotes an integrated watershed approach to manage and protect wetlands [http://water.epa.gov/type/wetlands/restore/watersheds_index.cfm]. Conservation strategies that have particular relevance and applicability in Wyoming are discussed in the following sections.

Project Capacity

Programs and funding sources available for wetlands conservation are currently underutilized in Wyoming primarily because additional technical resources and services are needed to secure grants and plan, permit and administer projects. This limiting factor has been especially problematic with respect to NAWCA and WRP funding. However, there is no shortage of opportunities for wetlands conservation work. It will be crucial to developing additional capacity in order to capture the funding that is available and get more projects done on the ground.

Priorities:

- Our highest administrative priority is to secure additional technical services needed to carry out wetland and riparian conservation projects. Specific expertise is needed to identify project opportunities, develop project proposals, secure grants from available funding sources, draw up certified engineering designs, conduct certified land surveys, secure permits and clearances, and administer projects. One potential strategy to accomplish this is a pooled agency approach whereby expertise housed in individual agencies and NGOs can work collaboratively on important wetland projects throughout the State. Due to hiring freezes and position caps in some government agencies, additional technical services may need to be secured from contractors or NGOs with agency funding support.

- Create a statewide wetlands coordinator position whose principal role is to track and monitor projects, and connect project proponents and landowners with funding sources and expertise needed to get projects planned, designed, permitted, and implemented.

- Develop additional funding sources to contract technical services such as grant writing, engineering, land surveying, permitting, or cultural resource clearances.

- Identify/develop additional sources of non-federal matching funds to realize greater use of the available federal funding.
• Coordinate with the State Engineer’s Office and Board of Control to facilitate permitting and other actions pertaining to water use. Investigate the potential to independently fund an additional State Engineer’s Office position whose primary responsibility would be permitting environmental projects such as wetland impoundments, instream flow rights, etc.

• Create and maintain a Wyoming Wetlands Website. Include links to various wetland and riparian conservation and programs, a frequently updated list of project opportunities throughout Wyoming, funding contacts, statewide and regional wetland conservation strategies, best management practices, and other helpful resources.

• Prepare regional “step-down” plans identifying local and regional objectives and priorities, and tailor conservation strategies to address the specific threats, opportunities, and other unique circumstances within each region. Regional plans currently proposed or under construction include:
  - Bear River Initiative
  - Goshen Wetland Complex
  - Upper Wind River
  - Upper Green River
  - NE Wyoming (Little Missouri R. / Beaver Cr. / Belle Fourche R.)
  - Salt River
  - Red Desert (Great Divide Basin)
  - Laramie Plains
  - Little Snake/Muddy Creek

Preparers of step-down plans should consult other relevant plans such as the Wyoming Bird Conservation Plan (Nicholoff 2003) [http://www.blm.gov/wildlifeplan/WY/Wyoming%20Bird%20Conservation%20Planhtm]; and the WGFD Strategic Habitat Plan (WGFD 2009) [http://gf.state.wy.us/downloads/pdf/SHP_Jan09.pdf].

**Wetlands and Riparian Habitat Protection**

Our highest conservation priority is to avoid further losses of existing wetlands and riparian habitats (i.e., “no net loss”). This is accomplished by monitoring and actively participating in permitting and planning actions that may potentially affect wetlands and riparian habitats; notifying appropriate regulatory authorities of water quality and Section 404 violations; implementing effective strategies to mitigate unavoidable adverse impacts; utilizing incentives programs such as WHIP, EQIP, and Section 319 of the CWA to their fullest potential; and by strategically protecting at risk areas through acquisitions, conservation easements, and management agreements. Effective participation in state and federal permitting, planning and incentives programs requires a comprehensive knowledge of the purpose, scope, and limitations of each program as well as vigilant awareness of ongoing and pending actions and opportunities. Wetlands managers should maintain close collaboration with government agencies and NGOs that administer various acquisition,
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Regulatory Programs and Mitigation

Jurisdictional wetlands are protected from harmful discharges and conversions through several permitting and incentive-based approaches. Non-jurisdictional wetlands are more susceptible to development and degradation. Voluntary and incentive-based strategies are the principal means of protecting non-jurisdictional wetlands and of protecting jurisdictional wetlands from activities that are not regulated, such as nonpoint source pollution or disturbances caused by nearby construction and other activities.

Priorities:

• Support ongoing Congressional efforts (Clean Water Restoration Act) to reinstate regulatory protections for isolated wetlands that were lost when U.S. Supreme Court and other federal district court decisions reinterpreted federal jurisdiction criteria under the Clean Water Act. [http://www.aswm.org/fwp/state_associations_letter_cwa_jurisdiction.pdf]

• Work collaboratively with landowners, developers, and agencies to plan effective mitigation for permitted discharges into jurisdictional wetlands. As appropriate and when opportunities allow, combine mitigation projects with other wetland creation and enhancement projects to realize more cost-effective mitigation and greater overall benefits. Maintain close liaisons with the Wyoming Regulatory Office of the Army Corps of Engineers and with agencies whose projects are likely to affect wetlands (WY Water Development Commission, WY Dept. of Transportation, Bureau of Reclamation, Federal Energy Regulatory Commission, etc.) [https://www.nwo.usace.army.mil/html/od-rwy/Wyoming.htm].

• Work collaboratively with all stakeholders to develop consensus regarding potential language modifications that would expand wetlands protection under the Wyoming Wetlands Act. Some specific considerations include:
  1. The 5-acre minimum size threshold [W.S. 35-11-310(a)] required to trigger the notification process before draining a wetland or series of wetlands;
  2. Scope of the Act with respect to activities resulting in the deposition of fill materials into wetlands;
  3. The exemption for wetlands affected by mining operations; and
  4. Mitigation for actions that impair the functional integrity of the State’s wetlands.

• Work with WY Department of Transportation, county road and bridge departments, and railroad companies to minimize impacts of new and existing transportation infrastructure and stream bank stabilization projects.

• Review all large project applications involving significant wetland or riparian habitat impacts and recommend effective avoidance or mitigation alternatives.

• Notify appropriate regulatory authorities of possible CWA violations when they are encountered in the field.

• Work with county zoning departments to discourage residential and commercial developments within floodplains and wetlands.
**Fee Title Acquisition**

Fee title acquisition is the most permanent means of protecting wetlands, riparian areas, and surrounding watersheds. Outright ownership affords the greatest control over potentially harmful activities as well as the widest range of management options. However, fee title acquisition is often the most expensive solution. Rural property values in Wyoming commonly exceed $1,000 per acre and can reach over $100,000 to $500,000 per acre in high-end markets such as Jackson Hole. In addition, the NGO or governmental agency holding title assumes all property management and maintenance responsibilities including annual payment of property taxes. Some agencies are also constrained as to the amount of property they are allowed to acquire and hold. Fee title acquisitions may be appropriate in the following circumstances when supported by a willing seller:

- to protect the most important areas at risk;
- to acquire areas in which long-term management, restoration, or wetlands creation projects are planned;
- to acquire important areas when less costly protection strategies are inapplicable or cannot be negotiated;
- to provide public recreation access; and
- to secure a dependable water supply for wetlands creation or management.

**Conservation Easements, Land Trusts**

Conservation easements are the most widely applied instrument for protecting important natural resource values throughout the West. A conservation easement conveys certain non-possessory interests in a private property to a nonprofit conservation organization or government agency. Terms of easements vary and can range from simple agreements to not develop the land to agreements stipulating a specific ecological condition in which the land is to be maintained. The landowner retains title to the property but agrees to forego certain uses as specified in the easement contract. Perpetual easements are most common, but term-limited easements have been negotiated in a number of cases (e.g., USFWS Partners for Fish and Wildlife and WRP programs). The value of a perpetual easement is commonly 30-40% of the total property value, making this a substantially less expensive alternative when compared to fee title acquisition. In addition, fiscal responsibilities of ownership and management of the land are retained by the landowner. In the case of a donated perpetual conservation easement, the U.S. tax code allows the landowner to claim a substantial annual tax deduction and the taxable estate value can be reduced or eliminated for the landowner’s heirs. [http://www.privatelandownernetwork.org/plnlo/taxbenefits.asp] [http://www.michbar.org/journal/article.cfm?articleID=95&volumeID=8] [http://www.csrlt.org/PDF/John%20West%20Conservation%20Easement%20Tax%20Benefits.doc]

Limited term or perpetual easements are a requirement of most wetland projects funded through the Wetland Reserve Program, Partners for Fish and Wildlife, and Ducks Unlimited. Conservation easements are also negotiated with individual property owners to protect key wetland and riparian habitat areas risk of being developed.
In some cases, it can be more cost effective to acquire fee title to a property for the purpose of attaching a conservation easement, and then resell the property with the easement to recoup most of the acquisition cost. This strategy provides a means of establishing a conservation easement in cases where the landowner is willing to sell the property but not interested in negotiating an easement.

Priorities:

There are many opportunities throughout Wyoming to protect important wetlands and riparian habitats through purchased or donated conservation easements. Each of the 4 major land trusts – The Nature Conservancy, Jackson Hole Land Trust, Green River Valley Land Trust, and Wyoming Stock Growers Agricultural Land Trust – has its own set of priorities. Some of the more pressing needs we have identified include:

- Secure additional lands within the acquisition boundary of Cokeville Meadows in cases where property owners are unwilling to sell their land.
- Continue converting term easements into permanent easements on Partners for Fish and Wildlife wetland projects, primarily in Goshen and Fremont counties.
- Continue exploring easement options to protect key wetland and riparian habitats with emphasis in the following areas:
  - Bear River Watershed (through the Bear River Initiative)
  - Upper Green River watershed
  - Salt River
  - North Platte River
  - Laramie Plains
  - Upper Wind River
  - New Fork River
  - Snake River
  - Little Snake River
  - Big Sandy River
  - Hams Fork
  - Blacks Fork
  - Little Missouri / Belle Fourche (NE WY Wetland Complex)

Land Use Planning

Executive Order 11990 requires each federal agency shall take actions to minimize loss or degradation of wetlands and preserve and enhance wetlands in carrying out its responsibilities. Executive Order 11988 requires each federal agency shall also preserve the natural and beneficial values served by floodplains.

Priorities:

- To assure the intent of these executive orders and other applicable laws and regulations are met, wetlands managers should participate in federal land use planning and other NEPA-driven decision processes.
- Each plan should contain a comprehensive inventory and condition assessment of wetlands and riparian habitats within the area covered by the plan or other federal action.
• Reviewers should recommend appropriate and applicable management practices including proper grazing management, fencing, pasture systems, setback distances, silvicultural practices, erosion control, water management, mitigation and other measures to restore and maintain the integrity and function of wetlands and riparian [floodplain] habitats affected by the plan or other action. [Refer to: Oneale (1993); Nicholoff (2003); U.S. Environmental Protection Agency (2005); Welsch et al. (1995); WY Department of Environmental Quality (1997, 1999, 2004); McKinstry et al. (2004); Brockmann (1999); Niemuth, et al. (2004); and Tessmann (2004)].

Wetlands and Riparian Habitat Restoration

Priorities:

• Identify potential restoration sites (both wetland and riparian) for inclusion in Appendix B.
• Prioritize the list in Appendix B regionally based on wetland complexes depicted in Figs. 2 and 8.
• Make the list available to government agencies (NRCS, USFWS, BLM, USFS, WY DEQ, WGFD, etc.) and NGOs (DU, TNC, etc.) administering wetlands restoration programs.
• Post the prioritized list on a Wyoming Wetlands Website and provide frequent updates and status reports.

Wetlands Reserve Program

The primary mission of the wetlands reserve program is to restore wetlands that were historically drained and converted to crop production or other uses. However, the full potential of Wyoming’s WRP program is not being fully realized due to insufficient staffing and technical services, and timeframes required to obtain permits for wetland impoundments. At the end of the federal fiscal year in 2009, the Wyoming NRCS turned back approximately $3.24 million of unobligated WRP funds from a total allocation of $5.24 million. This could potentially impact the amount of funding made available to Wyoming in the future.

Priorities:

• Build capacity by funding and securing additional technical services to identify candidate sites for wetlands restoration and to plan, permit, and administer wetlands restoration projects.
• Work with the State Engineer’s Office to expedite permitting so WRP funds can be obligated to restoration projects during the fiscal year in which the funds are available.
• Fund a “Wetlands Reserve Enhancement Program (WREP) with reserved grazing” pilot project to increase landowner interest and participation in the WRP. WREP will enable the landowner to continue traditional grazing and haying where these practices are beneficial to wetlands management within WRP project easements, subject to some NRCS guidelines.

Conservation Easements

Conservation easements can be a valuable tool for both protection and restoration of wetlands. Management practices and stewardship responsibilities can also be written into easement contracts or agreements where appropriate. Conservation easements are nearly always required to assure the long-term sustainability of federally funded wetlands restoration or creation projects under the WRP or Partners for Fish and Wildlife programs, and DU programs.
Priorities:

- Identify sites with high potential for restoration and improvement under a conservation easement strategy.
- Provide a prioritized list of candidate sites to the primary organizations that administer conservation easement and restoration programs in Wyoming – land trusts, NRCS, USFWS Partners Program.
- Implement “sloughing easements” that allow stream channels to meander naturally.

**Land Use Planning**

Refer to “Land Use Planning” under Wetlands and Riparian Habitat Protection (Page 53).

**Watershed Management**

Sustaining watersheds in good ecological condition has tremendous potential to improve the condition of wetlands and riparian habitats throughout the Intermountain West. Bue et al. (1964) were among the first to generalize that good range management is good waterfowl management. Fredrickson and Reid (1986) similarly concluded manipulation of the surrounding upland is a more economical approach to manage wetlands for nongame. Furthermore, costly “in-basin” habitat improvements are likely to be short-lived in a poorly managed watershed (Tessmann 2004).

Sound watershed management is achieved primarily through compatible riparian and upland grazing practices, sediment and erosion control practices, abatement of nonpoint source pollution, retirement of highly erodible lands from grazing and crop production, appropriate use of prescribed fire, control of invasive plant species, appropriate silvicultural practices, and conservation easements. In Wyoming, programs and technical services available to plan, fund, and implement watershed rehabilitation and improvement practices include:


Section 319 nonpoint source program implementation: [http://deq.state.wy.us/wqd/watershed/nps/npspg.htm]

Watershed best management practices: [http://deq.state.wy.us/wqd/watershed/nps/BMPs.htm]

Extension services and technical assistance provided by NRCS, DEQ, WY Dept. Agriculture, Conservation Districts, and the University of Wyoming:
[http://www.conservewy.com/]
[http://deq.state.wy.us/wqd/watershed/]
[http://wyagric.state.wy.us/divisions/techserv.htm]
[http://uwadmnweb.uwyo.edu/UWrenewableRenewable_Extension_Prgm.asp]
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Farm Bill programs including the Conservation Reserve Program (CRP), Grassland Reserve Program (GRP), WRP, and EQIP:
[http://www.wy.nrcs.usda.gov/programs/grp/grp.html]

The EPA’s Integrated Watershed Management program:
[http://water.epa.gov/type/wetlands/restore/watersheds_index.cfm]

The Wyoming State Water Plan, Basin Plans:
[http://waterplan.state.wy.us/BAG/]
[http://waterplan.state.wy.us/BAG/general/plancoord.html]

Wyoming Wildlife and Natural Resource Trust:
[http://wwnrt.state.wy.us/]

Stream Flow Management

Impoundment and regulation of stream flows has profoundly altered the natural processes responsible for maintaining riverine wetlands and riparian habitats throughout the West. Impacts commonly include loss of the flow characteristics required to create and maintain oxbow wetlands, braided channels, sand and gravel bars; channel encroachment and constriction by riparian vegetation; channel downcutting (degradation) due to silt load reduction in reservoir discharges; loss of floodplain functions; barriers to fish migration; and loss of fish spawning habitat (USBR and USFWS 2006).

Priorities:

- Implement flow management regimes to simulate the natural hydrograph of streams that are controlled by reservoirs.
- Establish adequate and effective instream flows.
- Remove or modify barriers to restore fish passage.
- Modify irrigation intakes to prevent fish entrainment.
- Discourage all construction and development within floodplains.

Management Agreements

Management agreements can be used to formalize a variety of arrangements made between a government resource agency or nonprofit organization and a land-owner to achieve habitat improvements and long-term management on private land. Management agreements usually center on an approved management plan developed by field staff together with the landowner prior to formalizing the agreement. The management plan specifies the restoration or management practices the landowner will undertake to achieve specified conservation goals. The landowner receives partial financial compensation and technical assistance in exchange for implementing and maintaining improvements over a period of time.

Although conservation easements are also a type of management agreement having greater or lesser degrees of specificity, the option also exists to negotiate management practices independently of a conservation
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A conservation easement through a contractual arrangement with the landowner. The latter approach has considerable potential but is not widely used in Wyoming.

**Leases**

A landowner who prefers not to grant a conservation easement or assume wetland management responsibilities under a management agreement may be willing to lease the wetland area for management by a conservation agency or nonprofit organization. A lease gives the lessee the right of access and any other rights, as agreed upon, to provide for proper management of the land. It takes effect for a specified period, usually 15 to 25 years, and can be drafted to cover specific purposes or a broad range of uses. The lease can be donated or entered into in exchange for rental payments. It can provide for long-term protection and management of land, but does not require an interminable commitment on the part of either the landowner or the conservation group.

**Mitigation**

Wetland and riparian restoration projects offer potential opportunities to mitigate impacts caused by a permitted development or construction project if the company or agency responsible for the impact agrees to fund the restoration.

Priorities:

- Identify and maintain a statewide list of potential restoration sites – both wetland and riparian (Appendix B).
- Provide the list to the USACE, other state and federal agencies, and companies to make project proponents aware of potential mitigation opportunities.

**Wetlands Creation and Enhancement**

Innumerable opportunities exist throughout Wyoming to improve the wetland habitat base. Project capacity is the most constraining factor and the first priority addressed under the heading, “WETLANDS AND RIPARIAN HABITAT CONSERVATION STRATEGIES” (Page 48). Improved coordination and collaboration among all entities involved in wetland conservation would greatly increase our effective use of available resources to complete additional wetland projects.

Priorities:

- Develop and periodically update a statewide list of potential wetland creation and enhancement opportunities (Appendix B).
- Organize and prioritize the list regionally based on identified wetland complexes depicted in Fig. 1.
- Make the list available to government agencies (NRCS, USFWS, WGFD, etc.) and NGOs (DU, TNC, etc.) administering wetlands programs.
- Make the list available to agencies potentially involved in wetlands mitigation projects (USACE, Bureau of Reclamation, WY Dept. Transportation, WY Dept. Environmental Quality WY Water Development Commission, etc.).

- Post the prioritized list on a Wyoming Wetlands Website and provide frequent updates and status reports.

- Wetlands creation, enhancement, restoration, and management should be based on the best available science and technology in the wetland design arts. Several design and management references are provided in Niemuth (2004); Erhart (2004); and Tessmann (2004). Several comprehensive design and management references include: Atlantic Waterfowl Council (1972); Weller (1978, 1987); Eng et al. (1979); Smith et al. (1986); Kusler and Kentula (1990); Marble (1992), Payne (1992); France (2002); EPA (2005); Mitsch and Gosselink (2007); and USDA NRCS (2008). Regionally-adapted design criteria should be addressed in regional step-down plans.

**Mitigation**

Wetland impacts caused by permitted development or construction are typically mitigated through wetland creation and enhancement projects. Mitigation by its nature does not normally produce a net gain in the habitat base. The concept is to avoid an overall net loss (i.e., “no net loss policy” [http://www.wetlands.com/fed/aug93wet.htm](http://www.wetlands.com/fed/aug93wet.htm)). However, there can be opportunities to combine mitigation with other creation or enhancement projects to realize greater benefits through a coordinated and potentially more cost-effective approach.

**Priorities:**

- Develop and periodically update a statewide list of potential creation and enhancement sites (Appendix B).

- Make the list available to the USACE, other state and federal agencies, and companies to suggest mitigation options for consideration by project proponents.

**Wyoming Wetlands Mitigation Bank**

The Wyoming Wetlands Mitigation Bank can provide incentives for private or corporate entities to finance and build wetlands projects. Mitigation credits that are deposited into the bank can later be withdrawn and used or sold to mitigate impacts resulting from construction activities.
Deposited mitigation credits are a form of “currency” that a wetland project sponsor receives in exchange for financing or building a wetland enhancement project. [http://deq.state.wy.us/wqd/watershed/Downloads/Wetlands/wet_guidelines.pdf](http://deq.state.wy.us/wqd/watershed/Downloads/Wetlands/wet_guidelines.pdf)

**State-owned Wildlife Habitat Management Areas (WHMAs)**

Over the past 30-40 years, a number of wetland projects have been built on WHMAs managed by the Wyoming Game and Fish Department. Locating wetland projects on Department-managed lands has several advantages:

- The primary purpose of a WHMA is to provide wildlife habitat. All WHMAs are managed primarily for this purpose.
- Long-term management and maintenance of wetlands on WHMAs becomes the responsibility of a government agency; and
- Most WHMAs are open to public access year-round for such activities as hunting, fishing, wildlife viewing, educational field trips, and casual recreation. Encouraging public use of wetlands increases support and funding for wetland conservation. Where needed, seasonal closures are enforced on some WHMAs to minimize disturbance of wildlife during winter or nesting seasons.

Priorities:

- Develop and periodically update a list of wetlands creation, enhancement, and management opportunities on Department-owned WHMAs throughout the state, including conditions that need to be addressed to restore and maintain functional wetlands (Appendix B).
- Coordinate with DU to identify and promote viable new wetlands projects as part of the Platte River and Rainwater Basin initiative.
- Encourage wetlands projects that increase public access for wetland-dependent recreation. These types of projects may potentially be constructed on accessible public lands, Department lands, or private lands under agreement such as lands enrolled in the Department’s Private Lands / Public Wildlife (PLPW) Program.

**Water Supply Issues**

Agricultural regions contain some of the densest and most productive wetland complexes in Wyoming. Wetland hydrology is often enhanced by irrigation practices. However, protracted drought and depleted water supplies have impacted the functional integrity of many irrigation-dependent wetlands since the late 1980s. As quantities of water reaching storage facilities, pastures, and cultivated fields dwindle, opportunities to create and manage wetland impoundments become increasingly limited. The following strategies may be considered to improve water supplies, where feasible and permissible under State of Wyoming water law:

Priorities:

- Collaborate with irrigation districts to help design and fund irrigation system rehabilitation and improvement projects that incorporate wetland conservation assurances and other wildlife benefits. Conservation assurances would typically set aside a quantity of water to sustain wetlands and may potentially be executed through a petition to change the use or location of use of an
existing water right if approved by the State Engineer’s Office (SEO) or Board of Control (BOC) as part of a rehabilitation agreement. Wyoming statutes allows for changes of use or location of use if the change does not increase the historic amount consumptively used or decrease the historic amount returned to the system [W.S. § 41-3-104]. This strategy should be investigated further in consultation with the SEO. In addition, conservation assurances can be negotiated directly with an irrigation district and executed through a contractual agreement such as between the City of Casper and the Casper-Alcova Irrigation District.

The City of Casper paid for canal rehabilitation work in exchange for an option to utilize the amount of water conserved (7,000 acre-ft) if needed. Conservation assurances are most feasible in cases where the irrigation district owns stored water. [http://library.wrds.uwyo.edu/wrp/89-12/abstract.html]

- Fabric liners are probably the most cost-effective means for reducing seepage losses and increasing delivery efficiency in leaky irrigation ditches and canals. Nonetheless, liners may cost several hundred thousand dollars per lineal mile. Concrete liners are even more expensive and also susceptible to frost heaving.

- Feasibility of canal liners is probably limited to problem segments within the overall conveyance system.

- Buried pipeline is another option to reduce seepage loss. In some circumstances, conversion from open ditches to pipeline will enable gravity-fed conveyance systems to run sprinklers, thereby reducing water distribution losses on irrigated fields. However, complete elimination of seepage and farm runoff will also eliminate habitat areas that are sustained by irrigation-enhanced hydrology. If pipe is installed, it should be limited to short segments of canal where the most severe seepage problems exist.

- Partial funding for system upgrades may be available from the Wyoming Water Development Commission. EQIP and other federal funding are also available for irrigation delivery improvements and on-farm systems.

- Nonfederal match funding and in-kind match are potentially available from State Wildlife Grants, Wildlife and Natural Resources Trust Account, private landowners, NGOs, and other sources provided an agreement can be negotiated to assure conservation benefits.

- Wetlands that were created and are sustained by seepage or leaks from irrigation ditches should be identified and mitigated in publicly funded projects.

- Explore options to expedite SEO permitting of wetlands creation, restoration, and enlargement projects.


- Maintain existing water rights in good standing on all Department-held lands.

- An adjudicated water right must be exercised at least once in each 5-year period when water is available to protect it from abandonment proceedings [Ref: W.S. § 41-3-401].
• Develop groundwater wells to augment surface water supplies into constructed wetlands.
  
  o Water yield from groundwater wells is highly variable depending on characteristics of the geologic strata into which wells can be drilled. Wells are a viable option to supplement wetland water supplies where yield is at least sufficient to offset evapotranspiration and seepage.
  
  o Restrictions on drilling and pumping groundwater are minimal unless the well is drilled within a groundwater control area [Ref: W.S. § 41-3-913] or interferes with another well having a higher priority or with a surface water right. A well that interferes with another well used for domestic or stock watering purposes, or interferes with a well having a senior appropriation date, may be ordered to cease or reduce withdrawals [Ref: W.S. § 41-3-911].
  
  o Wells drilled into a stream aquifer may be administered as a surface water diversion due to connectivity between the aquifer and surface flows resulting in potential impact on surface water availability.

• Lease or acquire property on which water rights can be managed to enhance wildlife habitats.
  
  o An irrigation water right is always attached to the land but can be moved to other lands or transferred to another use under existing provisions of water law.
  
  o A water right for the direct use of the natural unstored flow of any stream is also attached to the land, place or purpose for which it was acquired [Ref: W.S. § 41-3-101]. However, provisions of water law allow for the movement of water rights, including changes in place or type of use.
  
  o Return flows of water from irrigated crops and pastures (including habitat areas) can be captured within permitted wetland impoundments.

However, the quantity of water that can be diverted for irrigation must then be reduced to account for the loss of return flow to the system. This change of use is subject to approval by the BOC. If no other historic information is available, the BOC commonly assumes 50% of the water diverted for flood irrigation eventually returns to the stream system. To maintain the same quantity of water in the system and to protect other appropriators, the amount of allowable diversion could be reduced by double the volume of water intercepted in the impoundment. For example, if 100 acre-ft of water is applied to irrigate a field, 50 acre-ft would normally return to the system. If 10 acre-ft of irrigation return flows are intercepted in a new wetland impoundment, the total allowable diversion would be reduced from 100 acre-ft to 80 acre-ft. This yields 40 acre-ft of runoff of which 10 acre-ft is impounded and 30 acre-ft actually returns to the system. The 20 acre-ft reduction in the appropriation, combined with the 30 acre-ft of actual return flow equals the original 50 acre-ft that theoretically returned to the system before the impoundment was built.

  o A wetland impoundment built on top of irrigated land with water rights also represents a change in the permitted use of the water that must be approved by the BOC (i.e., the water is no longer being used to produce a crop). The same reduction in the allowable diversion applies – the diversion could be reduced by double the storage capacity of the impoundment.

• Acquire property with water rights and petition for a change of use and/or location of use to provide additional water supplies for wetlands [Ref: W.S. § 41-3-104]
Petitions for a change of use and/or location (place) of use must include consent from all potentially affected users on the system. Otherwise, the petition can only be considered after a public hearing on the requested change of water rights is heard before the BOC.

The change in use and/or location (place) of use may be allowed provided the quantity of water transferred shall not exceed the amount of water historically diverted under the existing use, nor exceed the historic rate of diversion under the existing use, nor increase the historic amount consumptively used under the existing use, nor decrease the historic amount of return flow, nor in any manner injure other existing lawful appropriators [W.S. § 41-3-104].

If the BOC approves a change of use and/or location of use from an irrigation right to a permitted impoundment, the volume of water that can be diverted under the existing water right is (without other evidence or information) reduced based on typical irrigation seasonal or return flow factors. Normally, the BOC assumes 50% of the water that is applied for flood irrigation returns to the system.

- Lease or purchase stored water to enhance water supplies to wetlands [Ref: W.S. § 41-3-320].
- Investigate the potential for temporary water transfers from other users to augment water supplies on Department-owned and private wetlands. Such transfers may be approved for periods of up to 2 years [Ref: § W.S. 41-3-110].
- Investigate the potential for water exchanges with other users to fulfill existing water rights at times of year (e.g. early spring/late summer) that may be more beneficial for wetland management [Ref: W.S. § 41-3-106].
- Establish water-harvesting features such as windrows and shrub stands to accumulate snowdrifts. On wetland construction sites, grade surface contours to maximize the wetland watershed and the amount of surface runoff captured.

Beaver Restoration

Opportunities exist throughout Wyoming to establish small palustrine wetlands by reintroducing beaver (*Castor canadensis*) into suitable vacant habitats (McKinstry and Anderson 1997; McKinstry et al. 2001). Beaver can be live-trapped and relocated to suitable stream environments on federal lands, and on private lands with the landowner’s consent. A Chapter 10 permit is required from the WGFD to trap, handle, and relocate live beaver. Beaver that are removed to alleviate damage problems can also provide a potential source of relocation candidates. Areas most suitable for beaver reintroduction should have the following parameters (Saldi- Caromile 2004):
Wetlands

- The channel slope is less than 3% to minimize dam blow-outs;
- The water supply is perennial or beaver are released on ephemeral streams during a period with sufficient water to create a dam and lodge;
- The stream geomorphology is such that beaver activities will be supported;
- Beaver will not cause unacceptable damage to public or private property or facilities;
- There is an adequate food source (at least 18 acres of willow or 6 acres of *Populus* species within 100 feet of the stream) and dam building materials;
- Beaver activities will not conflict with other management prescriptions, such as endangered species management or instream flow issues;
- The valley is at least 60’ wide (150’ or more is best); and
- The site is below 6,000’ elevation. The short growing season and heavy snowfall above this elevation may be limiting factors for beaver. (Exception note: beavers are known to thrive in suitable habitats as high as 8,000-10,000 ft. in Wyoming).

Advantages of beaver restoration include:

- Ponds and wetlands created by beaver activity require no permits, water rights, engineering designs, land surveys, or cultural resource clearances;
- Beaver ponds are maintenance-free (except where dam building activity may clog culverts, head gates, or irrigation ditches);
- Beaver ponds are natural and blend into the landscape;
- Beaver ponds stabilize stream channels and through succession raise the streambed elevation, widen the floodplain, restore riparian systems, and increase forage production;
- Beaver ponds raise the alluvial water table, thereby creating suitable growing conditions for riparian vegetation and prolonging stream flows through the summer period; and
- The habitat associated with beaver ponds sustains a rich and diverse plant and wildlife community.

Some disadvantages of beaver restoration are:

- Success of colonization is uncertain – only about 15-20% of transplanted beaver remain in the stream system into which they are introduced (McKinstry and Anderson 2002b);
- It can be difficult to trap enough beavers to support a viable relocation program;
- Ponds created by beavers are typically small, often a fraction of an acre, however beaver colonies usually build several ponds of differing sizes in a complex;
- Beavers can cause problems if they are relocated near residential areas, irrigation systems, or road culverts; and
- Some landowners don’t want beavers on their property.
Wetlands Maintenance Management

Wetlands creation and enhancement projects often fail to meet ecological goals due to lack of an agreement or sufficient resources to support long-term management and maintenance. A stewardship agreement should be developed and included in any plan to mitigate, restore, create, or enhance wetlands (Levine and Willard 1990; Lowry 1990; Tessmann 2004). The agreement should identify the parties responsible for maintenance (e.g., fence, dike repair) and management of land uses (e.g., grazing). It should set forth permissible land use practices in and near the wetland and should specify the condition in which the wetland is to be maintained (Jensen and Platts 1989). Mitigation wetlands should be protected by a perpetual conservation easement if retained in private ownership, or they should be transferred to ownership by a governmental institution (Golet 1986; Erwin 1990).

State Water Law

The potential for wetlands restoration, creation, management, and maintenance can be constrained by applicable provisions of state water law depending upon the type of facility being permitted and the precise use of the water. Water can only be appropriated and applied to a beneficial use recognized by the State of Wyoming. However, a considerable number of wetlands water rights have been approved by the SEO over the years, establishing that these uses of water are a beneficial use in Wyoming. (Jacobs et al. 2003) [http://seo.state.wy.us/PDF/b849r.pdf] [W.S. 43-3-101] [http://legisweb.state.wy.us/statutes/compress/title41.doc].

The beneficial use of water is recognized by the State Engineer when a decision is made to approve a water right for a proposed use. There is no formal list of approved or defined beneficial uses in Wyoming and this has afforded the SEO flexibility to treat water appropriated for wetlands as a beneficial use. A review of water rights that have been issued in the State would demonstrate water rights have been issued for a variety of wetlands facilities, thus establishing that water supplied to wetlands is, in fact, a beneficial use in Wyoming.

Water rights for the direct use of the natural unstored flow of any stream are attached to the lands, place or purpose for which they are acquired. If an appropriator desires to make changes to their water right, there are a number of statutory authorities to accomplish this such as a change from a non-preferred to a preferred use as provided in W.S. 41-3-101. Preferred uses include rights for domestic and transportation purposes, municipal uses, steam power plants, and industrial purposes (Jacobs et al. 2003) [W.S. 41-3-102(a),(b)].

In addition, an appropriator can petition the BOC for a change of type or location of use provided the quantity of water transferred shall not exceed the amount of water historically diverted, nor exceed the historic rate of diversion, amount consumptively use, nor decrease the flow, nor in any manner lawful appropriators [W.S. 41-3-104].

Stored water and rights permits that are not land by deed or other

“Water rights for the direct use of the natural unstored flow of any stream are attached to the lands, place or purpose for which they are acquired.”

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leased, transferred and used in such manner and upon such lands as the owner of such rights may desire, provided that such water must be used for beneficial purposes and in a manner consistent with the reservoir water rights [W.S. 41-3-303, W.S. 41-3-323]. However, it is common practice for the BOC to reduce the original permitted appropriation by double the volume applied to the new use or location, or by another factor specific to the situation before the BOC, in order to offset any reduction in return flows resulting from the new use or location. In addition, the new use or location cannot adversely impact other water users on the system.

Temporary water transfers of both direct flow and storage water rights are permitted for up to 2 years for highway or railroad construction purposes, drilling and producing operations, or “other temporary purposes” [W.S. 41-3-110]. A temporary transfer can potentially be applied to wetlands projects depending on how the water is specifically used.

Water conservation projects such as irrigation canal lining are done to reduce water losses, increase delivery efficiency, and provide some “insurance” against dry years when water supplies are short. However, the BOC, based on longstanding legal opinions and policy, does not view leaks or “seepage” as a “transferrable” consumptive use of water because [hypothetically] the water that leaks from a canal could eventually return back into the stream system and become available for use by another water right holder. Therefore the water saved is not treated as additional water that can be applied to any other use or location such as a wetland project. On the other hand, water that is saved and retained in a permitted storage facility can be made available to other uses subject to provisions of law that protect other appropriators from injury.

Priorities:

As appropriate, work collaboratively with all stakeholders to increase flexibility of water used for wetlands and habitat projects. Some potential strategies include:

- Some landowners don’t want beavers on their property.
- Formally recognize wildlife habitat creation, maintenance, enhancement or management (alternatively wetlands creation, maintenance, enhancement or management) is a beneficial use, in the same context as instream flows.
- Provide a mechanism whereby additional yield from water conservation practices such as irrigation infrastructure improvements can be permitted and applied to other beneficial uses including wetlands creation, maintenance or management [also see: Trout Unlimited undated]. [http://www.tu.org/atf/cf/%7BED0023C4-EA23-4396-9371-8509DC5B4953%7D/WYWateWYSolutions.pdf].
- Clarify the process by which temporary water transfers might be applied to instream flows, wetlands, and other habitat projects [also see: Trout Unlimited undated].
- In the case of petitions to change use or location of use, require that the original water right shall not be reduced by more than the quantity of water potentially taken away from other users as a result of the new use or location of use. This could be accomplished through a more detailed analysis and interpretation of the “no injury rule” under existing law.
Priority Ranking of Wetland Complexes

Two efforts have been undertaken to prioritize wetland complexes for conservation actions in Wyoming. The first assessment was completed by the WGFD and USFWS for inclusion in the 1995 Statewide Comprehensive Outdoor Recreation Plan (WY Dept. of Commerce 1995). A more recent study by TNC developed several sets of condition assessment metrics (indices) that can be applied in a variety of ways to prioritize wetlands (Copeland et al. 2010).
Wetlands

SCORP Wetland Complex Prioritizations

The 1995 SCORP prioritization relied upon qualitative ranking criteria adapted from National Wetlands Priority Conservation Plan (NWPCP), which were developed to implement Section 303 of the Emergency Wetlands Resources Act of 1986 (EWRA) (USFWS 1989). The EWRA authorized expenditures from the Land and Water Resources Fund for the purpose of acquiring priority wetlands. [http://www.fws.gov/laws/lawsdigest/emwet.html]. In all, 49 important wetland complexes were identified throughout Wyoming (Fig. 1). The original objective was to emphasize wetland acquisitions within the 8 highest priority complexes (Table 5). Priority rankings were based on the following NWPCP criteria and weights: wetland functions and values (33%), historic trends of wetland losses (33%), and relative threat of future loss or degradation (33%).


<table>
<thead>
<tr>
<th>Rank</th>
<th>Complex</th>
<th>Qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Southern Goshen County (Goshen Hole Complex)</td>
<td>Several thousand acres of wetlands. High waterfowl production, waterbird production, migration stopover, and winter habitat.</td>
</tr>
<tr>
<td>5.</td>
<td>Laramie Plains</td>
<td>5,500 acres of wetlands. High waterbird and waterfowl production. Staging/migration area for thousands of ducks and shorebirds.</td>
</tr>
</tbody>
</table>
The Nature Conservancy Wetlands Assessment Study

Copeland et al. (2010) developed several geospatial datasets to examine characteristics and conditions of 222 wetland complexes throughout Wyoming. Descriptors included wetland density (average number of wetlands per hectare within each complex perimeter), wildlife species richness (Number of SGCN present), species diversity (Shannon index based on SGCN), number of rare species (based on State and internationally-recognized species), wetland condition or integrity (based on proximity of land uses or activities known to impair wetland functions), and future vulnerability (based on models projecting future development and climatic conditions).

It can be tempting to generate composite scores or indices that combine several wetland attributes in an attempt to identify regional or statewide priorities. Ultimately, such approaches rely on subjective weighting and are inherently biased by differing cultural perspectives of functions and values. Furthermore, efforts to prioritize wetland complexes based on single or composite measures of functions and values can produce misleading results. For example, a low integrity score does not necessarily mean the wetland complex is unimportant. Rather, this serves to indicate that anthropogenic factors known to impair wetland functions exist nearby. The central and lower North
Wetlands

Platte River complexes have low integrity scores due to regulated flows, extensive agricultural influences, and proximity to urban areas. However, the North Platte wetlands also support very high species diversity, provide critical migration and dispersal corridors, and are used extensively by breeding waterfowl. The North Platte region and its wetlands and riparian habitats are also important sources of wildlife-dependent recreation close to the state’s urban centers.

For these reasons, Copeland et al. (2010) did not attempt to construct an overall prioritization of wetland sites. A better approach is to identify priorities based on the specific purpose and goals of each conservation program. It may be useful to apply more than one assessment metric in a nested sequence. For example, integrity scores (Fig. 5) may be the most relevant screening criterion to identify intact, natural wetlands for possible acquisition or conservation easements. If the most desirable candidates are wetland complexes with diverse species assemblages or large numbers of SGCN, then those wetlands should be selected from among the wetlands with high integrity scores by applying an appropriate secondary index such as Shannon diversity (Fig. 6). A third criterion in the sequence could be vulnerability to loss or degradation (Fig. 7). In this example, desirable candidates for acquisition are functionally intact, natural wetlands that sustain high species diversity, but are vulnerable to future loss or degradation. Real estate values might be another consideration having implications for acquisition decisions or easement negotiations.

A remediation program such as Section 319 (non-point source pollution) may rely on a differing set or sequence of assessment metrics. The first screening level might identify wetland complexes with low integrity scores, indicating possible candidates for remediation or restoration. The second level might utilize a species diversity or richness score in order to identify sites on which treatments will realize the greatest benefits. On the other hand, a conservation program intended to increase waterfowl production might consider breeding waterfowl densities or wetland densities as its first screening criterion, and so forth. Prioritizations that are based on ecological indicators such as functional integrity (Fig. 5) species diversity (Fig. 6), and vulnerability (Fig. 7), are particularly insightful for planning purposes.

Quantitative procedures that may be applied to rank sites for potential project consideration are not intended to preclude other sites from being considered at all. Rather, they provide general guidance on where significant benefits can be realized through various conservation actions that may have differing goals. It is appropriate for managers to encourage projects in “high priority” areas and enlist resources to get them done, but more often than not opportunity is a major driver behind project selection and implementation. Projects get done where there is interest, willing landowners and other partners, and available funding. Accordingly, managers should remain adaptable to take advantage of local and regional support leading to project implementation in non-priority areas as well as priority areas.
Fig. 5. Integrity scores of Wyoming wetland complexes (Copeland et. al. 2010).
Fig. 6. Species diversity (Shannon Diversity Index) of Wyoming wetland complexes based on wetland-associated SGCN (Copeland et al. 2010).
Wetland Delineation Comparisons

It is informative to compare the wetland complex delineations of WGFD (1995) with those of Copeland et al. (2010). The Copeland et al. analysis used an empirical approach based on strict geospatial interpretation of density strata, whereas the WGFD (1995) delineation recognized wetland complexes of known importance to waterfowl and other migratory bird species. Using these differing approaches, WGFD identified 49 wetland complexes whereas Copeland et al. (2010) identified 222. The WGFD delineation excluded high-elevation wetlands because they were not considered important waterfowl habitat and most are on National Forest and National Park Service lands. The Copeland et al. analysis included several high elevation and low-density (0.6-3.8 wetlands/mi²) complexes and smaller, isolated clusters of wetlands that were largely omitted from the WGFD delineations.

Table 6 summarizes attributes of 28 wetland complexes with highest species diversity scores (Copeland et al. 2010), and attributes of 3 additional complexes identified by the Wyoming Joint Ventures Steering Committee based on high project potential and other unique ecological considerations. These 31 complexes
Wetlands are also depicted on Fig. 8. The list in Table 6 includes all 8 priority complexes identified by WGFD (2005). Seven of the priority complexes identified by WGFD (2005) are included in the 11 complexes with highest species diversity scores identified by Copeland et al. (2010).

In general, the 8 priority complexes identified by WGFD (1995) are within the principal agricultural regions along major stream courses and at lower elevations. Low elevation wetlands are among the most productive in the state owing to a longer growing season and warmer average temperatures. Although these complexes received generally lower integrity scores, the Copeland et al. (2010) analysis verified they contain high densities of wetlands that sustain important habitat functions. However, the condition metrics used in the Copeland et al. (2010) analysis are unable to discriminate among the 8 WGFD complexes on a finer scale (i.e., they do not support a specific order of priority). For example, the species diversity scores range from 91-96 on a scale of 100, which is not enough separation to support reliable inferences regarding how the complexes compare to one another.

Geographic Focus Areas and Priority Conservation Actions

Wetland Delineation Comparisons

The Wyoming Joint Ventures Steering Committee has identified 9 primary focus areas (wetland complexes) in which partners are encouraged to focus project planning and implementation over the next 10-year planning horizon (refer to green-shaded rows in Table 6 and dark blue shaded complexes in Fig. 8). The criteria for selecting priority focus areas included a Shannon diversity rank of 5 or lower combined with “high” project opportunity. Six areas met those criteria:

- Bear River
- Goshen Hole
- Upper Green River
- Wind River Basin
- Snake River Valley (Jackson)
- Laramie Plains

The Steering Committee added 3 areas to the priority list based on unique ecological values and/or high project interest:

- Little Snake R. / Muddy Cr.
- NE Wyoming (Little Missouri R. / Belle Fourche R. / Beaver Cr.)
- Red Desert / Great Divide Basin

Near term efforts to secure a NAWCA standard U.S. grant will focus on the Bear River, Goshen Hole, and Little Snake River complexes. In 2009, TNC was awarded an IWJV Capacity Grant to assess the potential for funding major projects, including partner interest and availability of in-kind matching funds, within those 3 areas. The Steering Committee has identified a comparatively limited number of focus areas in which to concentrate wetlands conservation efforts. We stress that all wetlands are important and it is not the Committee’s intent to discourage projects in other wetland complexes or regions of the state. The Steering Committee will assist conservation efforts in non-priority areas to the extent available resources allow. Where questions arise regarding the allocation of available funds and other resources, projects in priority areas will generally receive emphasis over projects in non-priority areas. Geographic priorities are subject to review and revision on an annual basis.
Conservation Objectives, Priorities, and Project Opportunities

Statewide conservation objectives and priorities are identified in Appendix A. Appendix A remains under construction and will be updated pending completion of regional step-down plans. This Appendix shall also be updated periodically by consensus of the Wyoming Joint Venture Steering Committee. Appendix B is a list of project opportunities and project continuations for which partners and funding are sought. Many of the project descriptions are conceptual due to possible sensitivity of releasing detailed information about projects on private lands. The principal contacts identified on the project sheets can provide additional information. Appendix B will also be updated on a periodic basis.
Table 6. Attributes of 31 wetland complexes with high species diversity scores including identification of priority complexes.*

<table>
<thead>
<tr>
<th>TNC ID</th>
<th>WGFD ID No.</th>
<th>Shannon Diversity Rank</th>
<th>WGFD Rank</th>
<th>Complex Name</th>
<th>Complex Area (mi²)</th>
<th>Wetland Density (No/mi²)</th>
<th>Wetland Area (acres)</th>
<th>No. SGCN</th>
<th>Shannon Diversity</th>
<th>Rare Species Presence</th>
<th>Integrity</th>
<th>Vulnerability</th>
<th>Project Opportunity</th>
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<tr>
<td>1</td>
<td>49</td>
<td>11</td>
<td></td>
<td>Beartooth Plateau</td>
<td>255.9</td>
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<td>86</td>
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<td>81</td>
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<td>Unk.</td>
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<td>6</td>
<td>41</td>
<td>3</td>
<td>6, 7</td>
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<td>239.6</td>
<td>8.0</td>
<td>8,554</td>
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<td>96</td>
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<td>70</td>
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<td>High</td>
</tr>
<tr>
<td>7</td>
<td>39</td>
<td>7</td>
<td>2</td>
<td>Salt River</td>
<td>155.2</td>
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<td>10,064</td>
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<td>91</td>
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<td>70</td>
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<td>2,997</td>
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<td>32</td>
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<td>67</td>
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<td></td>
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<td>429.5</td>
<td>6.0</td>
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<td>69</td>
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<td>80</td>
<td>11</td>
<td>9</td>
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<td>Pathfinder – Sweetwater River</td>
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<tr>
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<td>10</td>
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<td>Old Woman Creek</td>
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<td>21</td>
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<td>72</td>
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<tr>
<td>165</td>
<td>21</td>
<td>7</td>
<td></td>
<td>Clear Creek – Powder Creek</td>
<td>92.2</td>
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<td>109</td>
<td>30</td>
<td>91</td>
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<td>66</td>
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<td>37</td>
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<td>1,012</td>
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<td>85</td>
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<td>63</td>
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<td>36</td>
<td>9</td>
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<td>Wasatch Front</td>
<td>135.6</td>
<td>14.7</td>
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<td>29</td>
<td>89</td>
<td>83</td>
<td>77</td>
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<tr>
<td>175, 218-19</td>
<td>25</td>
<td></td>
<td></td>
<td>NE WY (L Missouri/ Belle F/Beaver Creek)**</td>
<td>877.9</td>
<td>5.0</td>
<td>5,371</td>
<td>23</td>
<td>83</td>
<td>33</td>
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<tr>
<td>178</td>
<td>25</td>
<td>9</td>
<td></td>
<td>Inyan Kara</td>
<td>477.3</td>
<td>4.6</td>
<td>3,497</td>
<td>27</td>
<td>89</td>
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<td>71</td>
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<tr>
<td>179</td>
<td>25</td>
<td>10</td>
<td></td>
<td>Beaver Cr. – Upton</td>
<td>933.5</td>
<td>4.5</td>
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<td>27</td>
<td>88</td>
<td>33</td>
<td>68</td>
<td>16</td>
<td>High</td>
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Table 6. (continued)

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<thead>
<tr>
<th>TNC ID No.</th>
<th>WGFD ID No.</th>
<th>Shannon Diversity Rank</th>
<th>WGFD Rank</th>
<th>Complex Name</th>
<th>Complex Area (mi²)</th>
<th>Wetland Density (No/mi²)</th>
<th>Wetland Area (acres)</th>
<th>No. SGCN</th>
<th>Shannon Diversity</th>
<th>Rare Species Presence</th>
<th>Integrity</th>
<th>Vulnerability</th>
<th>Project Opportunity</th>
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<tr>
<td>180</td>
<td>4 &amp; 5</td>
<td>6</td>
<td></td>
<td>Wheatland</td>
<td>236.6</td>
<td>5.6</td>
<td>4,819</td>
<td>30</td>
<td>92</td>
<td>50</td>
<td>52</td>
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<tr>
<td>181</td>
<td>N/A</td>
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<td></td>
<td>Laramie Range</td>
<td>1,214.4</td>
<td>5.4</td>
<td>8,295</td>
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<td>89</td>
<td>50</td>
<td>78</td>
<td>4</td>
<td>Low</td>
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<tr>
<td>182</td>
<td>8</td>
<td>3</td>
<td>8</td>
<td>Middle N. Platte River</td>
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<td>9,802</td>
<td>34</td>
<td>96</td>
<td>67</td>
<td>57</td>
<td>75</td>
<td>Low</td>
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<td>184</td>
<td>44</td>
<td>1</td>
<td></td>
<td>Bighorn River/ Greybull River</td>
<td>1,895.4</td>
<td>5.7</td>
<td>29,825</td>
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<td>100</td>
<td>100</td>
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<td>185</td>
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<td></td>
<td>West Wind River Range</td>
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<td>29,782</td>
<td>36</td>
<td>88</td>
<td>83</td>
<td>86</td>
<td>24</td>
<td>Low</td>
</tr>
<tr>
<td>193</td>
<td>Out</td>
<td>10</td>
<td></td>
<td>Skull Creek/ Pat O’Hara Creek</td>
<td>80.2</td>
<td>5.4</td>
<td>147</td>
<td>30</td>
<td>88</td>
<td>67</td>
<td>64</td>
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<tr>
<td>207</td>
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<td>East Wind River Range</td>
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<td>9,783</td>
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<td>85</td>
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<td>208</td>
<td>43</td>
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<td></td>
<td>Wind River Basin</td>
<td>1,246.8</td>
<td>71</td>
<td>37,706</td>
<td>40</td>
<td>96</td>
<td>100</td>
<td>65</td>
<td>97</td>
<td>High</td>
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<tr>
<td>210</td>
<td>38</td>
<td>10</td>
<td></td>
<td>Smiths Fork/Lower Bear River</td>
<td>317.7</td>
<td>5.7</td>
<td>4,860</td>
<td>32</td>
<td>88</td>
<td>67</td>
<td>82</td>
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<td>High</td>
</tr>
<tr>
<td>211</td>
<td>34</td>
<td>2</td>
<td></td>
<td>Green River Basin</td>
<td>2,594.6</td>
<td>8.2</td>
<td>174,193</td>
<td>36</td>
<td>97</td>
<td>100</td>
<td>69</td>
<td>81</td>
<td>High</td>
</tr>
<tr>
<td>213</td>
<td>35</td>
<td>4</td>
<td></td>
<td>Black Fork/Little Muddy Creek</td>
<td>590.2</td>
<td>8.3</td>
<td>38,006</td>
<td>32</td>
<td>94</td>
<td>83</td>
<td>70</td>
<td>7</td>
<td>Unk.</td>
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<td>216</td>
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<td></td>
<td>Snowy Range</td>
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<td>Low</td>
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<td>217</td>
<td>15</td>
<td>5</td>
<td>5</td>
<td>Laramie Plains</td>
<td>1,401.9</td>
<td>6.4</td>
<td>83,094</td>
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<td>93</td>
<td>67</td>
<td>70</td>
<td>34</td>
<td>High</td>
</tr>
<tr>
<td>221</td>
<td>22</td>
<td>8</td>
<td></td>
<td>Tongue River - Sheridan</td>
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<td>3,625</td>
<td>29</td>
<td>90</td>
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<td>54</td>
<td>81</td>
<td>High</td>
</tr>
<tr>
<td>222</td>
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<td>6</td>
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<td>Upper North Platte River</td>
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<td>7.0</td>
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<td>92</td>
<td>50</td>
<td>70</td>
<td>8</td>
<td>High</td>
</tr>
</tbody>
</table>

* Data from Copeland et al. (2010) and WGFD (1995, 2008). Areas highlighted in green are priority wetland complexes identified by the Wyoming Joint Ventures Steering Committee. Except as noted below, these areas have TNC diversity ranks in the top 5 and high project potential.

** Additional complexes were included at the discretion of the State Steering Committee because they have unique ecological values that are not be reflected by the TNC diversity scores plus exceptionally high potential for conservation projects.
Fig. 8. Thirty-one priority wetland complexes including 9 primary focus areas (dark blue) identified by the Wyoming Joint Ventures Steering Committee. [based on data provided by Copeland et al. (2010)].
Goals and Priorities

As noted in previous chapters there are two perspectives on outdoor recreation in Wyoming. The first perspective is from the point of view of those agencies and organizations providing recreation facilities to the general public. The second is the perspective of the general public; this can include individuals, families, or organizations that have specific needs, demands or desires for facilities or recreation opportunities. The following issues were derived by synthesizing provider concerns, and public input on the activities they participated in, quality of public outdoor recreation facilities, concerns and issues related to outdoor recreation, and why people did not recreate. These issues and the associated recommendations are to be used as a guide for outdoor recreation in Wyoming for the next five years.

Recreation Issues

The following are the five major issues condensed from the recreation provider and recreation user surveys conducted in 2013:

1) Land Use Management
   - Access to Public Lands
   - Public Land Usage
   - Public Land Acquisition

2) Facilities
   - Developing New Facilities
   - Maintaining Existing Facilities
   - Addressing Environmental Factors
   - Meeting the Needs of a Changing Population
   - Trails and Pathways

3) Funding and Cost
   - Funding for Personnel
   - Funding for Maintenance
   - Funding for Restoring Existing Facilities and Developing New Facilities
   - Cost to Public
**Issue 1: Land Use Management**

Ensuring recreation opportunities meet the needs of the user is a primary goal of the SCORP. This entails access to a facility or public area, reasonable user fees, handicap accessibility, and the ability to enjoy the recreational activity once there (i.e. crowding, noise, condition of facility, user conflicts, etc.). Public access to public recreation areas was identified as the greatest concern for respondents to the survey. Additionally, respondents felt public land use should be managed to minimize conflicts yet have accessible and convenient facilities that complement uses. Respondents also expressed a growing concern about the preservation and protection of public lands. As the West increases its population, new residential, commercial and industrial development will change the outdoor experience. Respondents were concerned with the extent and location of new development, especially extractive industries, wind generators and power lines. Correspondingly, as population density increases, recreational use of public lands will intensify. Respondents voiced a myriad of concerns related to public land management issues. Numerous respondents expressed concern about an apparent lack of regulations and enforcement, while others expressed apprehension about over-regulation and excessive control of public lands. Concerns over motorized recreation received the second most comments from respondents. Comments supporting motorized recreation still remained in the top ten. About a third of respondents indicated more land should be made available for motorized recreation. Over half of respondents felt more land should be made available for non-motorized recreation. Ensuring there is enough land and water available to provide recreation opportunities is always a concern. Over half of respondents would like to see current water recreation areas expanded in the state. Over 60% of respondents supported acquiring additional recreation lands through a willing seller or donation.

**Recommendations**

- Preserve existing and increase public access to public lands for outdoor recreation.
- Examine the use of alternative means to allow public access to public lands for outdoor recreation.
- Identify and resolve disagreements between conflicting public land usages.
- Promote compatibility between recreation opportunities and future land uses.
- Examine land needs to ensure they meet current demands and future trends in outdoor recreation.
Goals and Priorities

Issue 2: Facilities

Results from the 2013 surveys clearly indicate maintaining existing and providing additional recreational facilities close to where residents live and work are a primary concern. The public wants facilities that are close to home, uncrowded, are suitable for Wyoming’s environment, up to date and reflect current recreation trends. Several respondents expressed concerns about setting, location and design of recreation facilities (i.e. ADA accessibility, sun, wind, etc.) Several respondents discussed meeting the needs of Wyoming’s changing population. Current demographic trends indicate Wyoming’s recreation providers will have to address the needs of an increasingly retirement-age population, a more obese population and youth that are digitally engaged. For example, as the population ages Wyoming will need to improve ADA accessibility and have more passive recreation areas. Depending on funding and available resources recreation providers will need to think about which facilities to maintain, how to modify recreation programming, and where to locate new recreation facilities. Trails and pathways continue to be a topic of primary concern with the public. Three of the top six recreation activities identified; viewing nature, viewing wildlife and walking/hiking involve using trails, paths or rural roads. Additionally, there are numerous trail based motorized trail opportunities.

Recommendations

— Improve and expand existing outdoor recreation facilities, when appropriate, to meet the increasing demands of the public.

— Encourage communication between users and recreation providers to determine new needs and appropriate locations for outdoor recreation.

— Develop a process to periodically bring together key outdoor recreation providers (from all levels of government and the private sector) to share and discuss ongoing regional outdoor recreation issues.

— Ensure new facility design considers climatic and scenic factors. This can include making sure facilities are oriented correctly for the wind, take advantage of the sun or shade opportunities and are situated to reduce visual impacts.
— Through a cooperative management strategy, minimize conflicts between different user groups in the development of new or expanded recreation opportunities.

— Insure the current recreational needs of the population are met which include but are not limited to:
  • Outdoor recreational facilities
  • Trails and pathways
  • Community recreation facilities
  • Needs of senior citizens and individuals with disabilities

— Identify and address future trends and demands of outdoor recreation.
Results from the 2013 recreation survey illustrate funding for facility maintenance, recreation personnel and restoration of existing recreation areas are of major concern. The public expects recreation areas to be clean, safe and well maintained. It is imperative that existing facilities are properly maintained to provide a worthwhile experience for the user. The strategy is to develop a variety of long-term dependable funding sources to be specifically used to maintain and staff outdoor recreation facilities. Sixty-seven percent of respondents felt, “new or additional partnerships should be developed between the private sector and local, state, and federal agencies to develop and maintain outdoor recreation opportunities.” Over half of respondents felt, “user fees, special taxes or license fees should be used as an alternate source of funding for outdoor recreation facilities to help defer operational costs.” Over half of respondents felt, “the state should provide support and assistance to local organizations for expanding their recreation facilities.” Sixty-two percent of respondents felt, “a source of long-term consistent funding for recreation should be provided at the state level.” Clearly the public feels recreation areas should be funded through multiple sources and the state should play a role in providing and maintaining public outdoor recreation facilities.

At the same time numerous respondents expressed a concern about the rising costs of recreation facilities. 69% of respondents felt, “basic opportunities at parks and open space areas, such as walking and picnicking, should be provided by general tax dollars without additional user fees.” The public is comfortable charging user fees and special taxes for more developed recreation areas, but feels passive recreation areas such as city parks, greenways and open spaces should be available free of charge.

Recommendations

— Encourage alternative long-term funding strategies through a joint partnership between local government, business leaders, and private interests.

— Encourage the development of policies that will promote self-sufficient outdoor recreation facilities and opportunities.

— Actively solicit the establishment of endowments for outdoor recreation facilities and programs.

— Ensure that maintenance is current on all facilities.

— Increase community promotion and education about outdoor recreation programs, facilities, opportunities and needs.

— Evaluate current facilities and equipment relative to its effective use-life and update or replace if appropriate.

— In coordination with recreation providers, develop a clearinghouse of available funding sources for outdoor recreation and provide a mechanism to ensure that all eligible applicants are aware of these funding sources.
— Promote the use of volunteers, sport associations, and recreation groups as an alternative means of support for the operation and maintenance of public outdoor recreation facilities.

— Attention should be focused on renovating existing recreation sites and attractions, and funding considerations should be given to renovations that represent significant cost savings over the development of new sites or facilities.

— A network of citizens, local decision makers, recreation and outdoor groups, and regional coalitions should be formed to support continued funding for outdoor recreation.
Priority Projects

In the 2013 SCORP we have identified several priorities for Wyoming outdoor recreation. The following is a list of outdoor recreation projects that are identified as priorities for LWCF funding. This list was developed using information from the user survey, provider survey, prior Wyoming SCORP’s and new facility trends.

- Amphitheater/Band Shells
- Aquatic Facilities
- BMX Tracks
- Boating Facilities
- Campgrounds
- Disc Golf Courses
- Fishing
- Golf Courses
- Hunting
- Natural Areas/Wetlands
- Paint Ball Facilities
- Passive Parks/Open Spaces
- Picnic Areas
- Public Access to Public Lands
- Remote Control Facilities
- Skateboard Facilities
- Sheltered Ice Rinks
- Sheltered Swimming Pools
- Shooting Facilities/Target Ranges
- Sports and Playfields
- Support Facilities
- Trails (motorized)
- Trails (non-motorized)
- White Water Parks

Although these are not the entire criteria needed to receive LWCF funds, these facilities and the specific components incidental to them are found to be needed in every region of Wyoming. The 2013 SCORP recognizes the potential for rapid change in outdoor recreation. This document attempts to enhance the opportunity for local communities to easily obtain LWCF funds. All planning and long-range improvement plans adopted by state, county, city, town or local recreation boards will be considered eligible for the LWCF grant program.


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Bibliography


APPENDIX A. USER SURVEY

Wyoming Statewide Comprehensive Outdoor Recreation Plan Survey 2013
**Wyoming Statewide Comprehensive Outdoor Recreation Plan Survey 2013**

*Thank you for taking the time to complete this survey. Your participation in this survey is voluntary. Refusal to participate will have no effect on any benefits to which you are otherwise entitled. Fill in bubbles completely using either pencil or pen (blue or black ink), but please do NOT use a felt-tip marker.*

1. Please tell us how important or unimportant public parks and other public recreation areas are to your quality of life.

<table>
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<tr>
<th>Very important</th>
<th>Important</th>
<th>Unimportant</th>
<th>Very unimportant</th>
<th>Don't know</th>
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</thead>
<tbody>
<tr>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

2. Please tell us how much you agree or disagree with each of the following statements.

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<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Strongly disagree</th>
<th>No opinion</th>
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</thead>
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<tr>
<td>Having recreation areas close to my home improves my quality of life.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Outdoor recreation in my community should be a joint partnership between local government, business leaders, and private interests.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>The state's current water recreation areas need to be expanded.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Motorized vehicles should have more public recreation space than is currently available to them.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>For non-motorized recreation, there should be more public space available than there is currently.</td>
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<td>O</td>
<td>O</td>
</tr>
<tr>
<td>The demand for publicly organized activities in our community is greater than the demand for individualized non-structured activities.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>The state should provide support and assistance to local organizations for expanding their recreation facilities.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>A source of long-term, consistent funding for recreation should be provided at the state level.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>User fees should cover the direct cost of high-maintenance recreation facilities.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Basic opportunities at public parks and open space areas, such as walking and picnicking, should be provided by general tax dollars without additional user fees.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Efforts should be made to acquire additional recreation lands from individuals or other entities interested in selling or donating land.</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
3. Following is a list of outdoor activities. For each one, please tell us if you or a member of your household participated in that activity in Wyoming in the past year, and how you would rate the available facilities for that activity in Wyoming.

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<thead>
<tr>
<th>Activity</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>Don't know</th>
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</thead>
<tbody>
<tr>
<td>Camping in developed sites (RV, pop-up, tent camping)</td>
<td>☒</td>
<td>☐</td>
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</tr>
<tr>
<td>Primitive camping (motorized, but no facilities)</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>Backpacking, camping in roadless areas</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>Picnicking and family day gatherings</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>Viewing wildlife, birds, fish, etc.</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>Viewing natural features, scenery, flowers, etc.</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>Viewing historic and/or prehistoric sites/areas</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Visiting a nature center, nature trail, or visitors center</td>
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<td>☐</td>
<td>☐</td>
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<tr>
<td>General/other: relaxing, hanging out, escaping crowds, noise, etc.</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>Fishing-all types</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Hunting-all types</td>
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<tr>
<td>Off-road motorized vehicle travel (4-wheelers, dirt bikes, etc.)</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Driving for pleasure/sightseeing by auto</td>
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<tr>
<td>Snowmobile travel</td>
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<td>☐</td>
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<td>☐</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>Motorized water travel (boats, PWC, etc.)</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
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<td>☐</td>
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<tr>
<td>Nonmotorized water travel (canoe, kayak, raft, sail craft etc.)</td>
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<tr>
<td>Hiking or walking</td>
<td>☒</td>
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<tr>
<td>Horseback riding</td>
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<tr>
<td>Rodeo activities</td>
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<td>Road bicycling</td>
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<tr>
<td>Mountain bicycling</td>
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<tr>
<td>BMX bicycling</td>
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<tr>
<td>Downhill skiing, snowboarding</td>
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<tr>
<td>Cross-country skiing, snowshoeing</td>
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<td>Sledding, tubing</td>
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<tr>
<td>Ice skating (indoor)</td>
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<tr>
<td>Ice skating (outdoor)</td>
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<tr>
<td>Jogging, running, fitness course workouts</td>
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<tr>
<td>Field activities (soccer, tennis, baseball, volleyball, horseshoes, disk golf, etc.)</td>
<td>☒</td>
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<tr>
<td>Golf (18-hole, 9-hole, driving range)</td>
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<tr>
<td>Golf (miniature)</td>
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3...continued from page 2.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Participate</th>
<th>Excellent</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Poor</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skateboarding or in-line skating (rollerblading)</td>
<td>☒</td>
<td>☒</td>
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<td>☒</td>
<td>☒</td>
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<tr>
<td>Outdoor spectator activities (concerts, sporting events, etc.)</td>
<td>☒</td>
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<td>☒</td>
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<tr>
<td>Fairs or festivals</td>
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<tr>
<td>General playground activities</td>
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<tr>
<td>Dog parks</td>
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<td>☒</td>
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<td>☒</td>
<td>☒</td>
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<tr>
<td>Swimming (pools, lakes, reservoirs)</td>
<td>☒</td>
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<tr>
<td>Spray parks/water parks</td>
<td>☒</td>
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<tr>
<td>Rock climbing (climbing wall or natural rock)</td>
<td>☒</td>
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</tbody>
</table>

4. Which of the following prevented you or members of your household from visiting park or recreation facilities as often as you'd like IN WYOMING within the past year?

(Mark all that apply.)

- Not accessible
- Too crowded
- No transportation
- Did not offer facilities wanted
- Not aware of facilities/programs available
- Not enough time/too busy
- Just moved here
- Did not offer activities wanted
- Too far to travel
- Too expensive
- Physical impairment
- Not interested
- Other, please specify:

5. Please rank the following seven items in order of importance as they relate to your quality of life (with 1 being the most important and 7 the least important).

- Education
- Employment opportunities
- Healthcare
- Housing
- Recreation opportunities
- Shopping opportunities
- Safety
6. In what year were you born? 19 [ ]

7. Which of the following BEST describes your current employment status?
   - Full time employed
   - Part time employed
   - Student, and also employed
   - Student, and not employed
   - Homemaker
   - Retired or disabled
   - Not currently employed or student

8. Which of the following best describes your marital status?
   - Single
   - Married
   - Living with a life partner
   - Divorced
   - Separated
   - Widowed

9. Including you, how many adults and children live in your household?
   [ ] people in household

10. Which ONE of the following describes BEST your race?
    - American Indian or Alaska Native
    - Asian
    - Black or African American
    - Native Hawaiian or other Pacific Islander
    - White, Hispanic
    - White, not Hispanic

11. What is your zip code? [ ]

12. Are you:
    - Male
    - Female

13. What was your total household income before taxes in 2007?
    - Less than $15,000
    - $15,000 to $25,000
    - $25,000 to $50,000
    - $50,000 to $75,000
    - $75,000 to $100,000
    - $100,000 to $150,000
    - Over $150,000
    - Don't know / Not sure

14. What would you say are the top three issues or concerns for outdoor recreation in Wyoming? List these in order of importance.
   1. 
   2. 
   3. 

Thank you for participating in our survey! Please mail your completed questionnaire in the envelope provided to:
   University of Wyoming, Dept. 3325, 1000 E. University Avenue, Laramie, WY 82071
## APPENDIX B. PROVIDER SURVEY

### Wyoming Statewide Recreational Facilities Inventory

**Current Facilities and Future Facility Needs**

This is a survey of local government recreation departments and other recreation providers in the State of Wyoming. The information you provide on this survey will be used in the development of the 2014-2019 Statewide Comprehensive Outdoor Recreation Plan (SCORP). The SCORP identifies recreation issues and needs at the state and local levels and guides the allocation of federal Land and Water Conservation Funds (LWCF) through the Division of State Parks, Historic Sites, and Trails.

<table>
<thead>
<tr>
<th>1) Responding Agency:</th>
<th>2) Location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3) Contact Name:</td>
<td>4) County:</td>
</tr>
<tr>
<td>5) Zip Code:</td>
<td></td>
</tr>
</tbody>
</table>

### 6) Size and type of existing community recreation center(s) (buildings).

<table>
<thead>
<tr>
<th>Type</th>
<th>Size (sq ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 1</td>
<td></td>
</tr>
<tr>
<td>Facility 2</td>
<td></td>
</tr>
<tr>
<td>Facility 3</td>
<td></td>
</tr>
<tr>
<td>Facility 4</td>
<td></td>
</tr>
</tbody>
</table>

**Existing facility comments:**

<table>
<thead>
<tr>
<th>Facility 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 2</td>
</tr>
<tr>
<td>Facility 3</td>
</tr>
<tr>
<td>Facility 4</td>
</tr>
</tbody>
</table>

### 7) If your community expanded existing center(s)/building(s), what type of programs would you expand and by how much?

<table>
<thead>
<tr>
<th>Type</th>
<th>Size (sq ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td></td>
</tr>
<tr>
<td>b)</td>
<td></td>
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<tr>
<td>c)</td>
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<td>d)</td>
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<td>e)</td>
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<td>f)</td>
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</tr>
</tbody>
</table>

### 8) Rank the following issues as they relate to your recreation program (1 is most important, 9 is least important).

<table>
<thead>
<tr>
<th>Issue</th>
<th>Rank (1-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional Facilities</td>
<td></td>
</tr>
<tr>
<td>Additional Personnel</td>
<td></td>
</tr>
<tr>
<td>Community Awareness</td>
<td></td>
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<tr>
<td>Community Support</td>
<td></td>
</tr>
<tr>
<td>Land Acquisition</td>
<td></td>
</tr>
<tr>
<td>Maintenance Funding</td>
<td></td>
</tr>
<tr>
<td>Program Expansion</td>
<td></td>
</tr>
</tbody>
</table>
9) **Please list the number and acres/miles (if appropriate) of existing facilities in your jurisdiction and rate the condition.**

10) **Please list the number and acres/miles (if appropriate) of facilities that will be added in the next 5 years (funding in place).**

11) **Please list the number and acres/miles (if appropriate) of facilities that you would like to add in the next 5 years (if funding becomes available).**

<table>
<thead>
<tr>
<th>Number and acres/miles (if appropriate)</th>
<th>Condition</th>
<th>Number and acres/miles (if appropriate)</th>
<th>Number and acres/miles (if appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball Fields</td>
<td>Good</td>
<td>10) Facilities to be added in next 5 years-Funding is/will be available</td>
<td></td>
</tr>
<tr>
<td>Batting Cages</td>
<td>Fair</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Softball Fields</td>
<td>Poor</td>
<td></td>
<td></td>
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<tr>
<td>Football Fields</td>
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<tr>
<td>Soccer Fields</td>
<td></td>
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<td></td>
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<tr>
<td>Golf Courses 9-Hole</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Golf Courses 18-Hole</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Miniature Golf</td>
<td></td>
<td></td>
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<tr>
<td>Disk/Frisbee Golf</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Outdoor Basketball Courts</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Outdoor Volleyball Courts</td>
<td></td>
<td></td>
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<tr>
<td>Tennis Courts</td>
<td></td>
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<tr>
<td>Horseshoe Pits</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Swimming Pools - Indoor</td>
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<tr>
<td>Swimming Pools - Outdoor</td>
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<tr>
<td>Spray Parks</td>
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<tr>
<td>Swimming Beaches</td>
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<td></td>
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<tr>
<td>Parks - Developed</td>
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<tr>
<td>Parks - Not Developed</td>
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<tr>
<td>One-Piece Play Equipment Structures</td>
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<tr>
<td>Lakes/Ponds # (acres)</td>
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<tr>
<td>Camp Sites - Tent</td>
<td></td>
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<tr>
<td>Camp Sites - Motor homes, Trailers, RVs</td>
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Appendices
### Appendices

<table>
<thead>
<tr>
<th>Fishing Piers</th>
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<tbody>
<tr>
<td>Boat Ramps-Developed</td>
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<tr>
<td>Whitewater Parks</td>
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<tr>
<td>Outdoor Education Facility (nature/interpretive center, botanical gardens)</td>
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<tr>
<td>Bicycle Paths/Trails # (miles)</td>
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<tr>
<td>Horseback Trails # (miles)</td>
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<tr>
<td>Hiking/Jogging/Walking/Nature Paths/Trails # (miles)</td>
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<tr>
<td>Green Space # (acres)</td>
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<tr>
<td>Cross Country Ski Trails # (miles)</td>
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<tr>
<td>Snowmobile Trails – Groomed # (miles)</td>
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<tr>
<td>Snowmobile Trails – Not Groomed # (miles)</td>
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<tr>
<td>Picnic Sites</td>
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<td>Rodeo Arena</td>
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<tr>
<td>Shooting/Archery Ranges</td>
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<td>Paintball Facilities</td>
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<tr>
<td>Sporting Arenas/Stadiums</td>
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<tr>
<td>Ice Rink - Indoor</td>
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<tr>
<td>Ice Rink – Outdoor</td>
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<td>Auto Race Tracks</td>
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<td>Other</td>
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<td>Other</td>
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12) State your level of agreement or disagreement with the following statements (1-Strongly agree, 2- Agree, 3-Neutral, 4-Disagree, 5-Strongly disagree)

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<tr>
<th>Statement</th>
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<th>5</th>
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<td>There is greater demand for public organized activities in our community than individualized non-structured activities.</td>
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<td>User fees should cover the direct cost of high maintenance recreation facilities.</td>
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<td>Basic opportunities at public parks and open space areas, such as walking and picnicking, should be provided by general tax dollars without additional user fees.</td>
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<td>Most citizens in my community believe recreation is important to the community’s quality of life</td>
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<td>The elected officials in my community believe recreation is a high priority for the community’s quality of life</td>
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<td>Open space, parks and recreational opportunities over the last ten years have enhanced my community’s chances for economic development.</td>
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<td>Outdoor recreation in my community should be a joint partnership between local government, business leaders and private interests.</td>
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</table>
13)   a)  What are your community’s estimated outdoor recreation facilities maintenance/repair needs for the next 5 years? $______________

b)  What are your community’s new park construction funding needs for the next 5 years? $______________

c)  What are your community’s estimated path/trail/green space funding needs for the next 5 years? $______________

14)  Please identify recreation related issues that have occurred in your community in the last two years (list top three):

15)  What direction would you like to see the Land and Water Conservation Fund Take?

16)  General comments:

Thank you for your assistance in completing this inventory and survey. Results will be summarized in the 2008 SCORP which will be distributed to all of the recreation directors in the state upon completion.
APPENDIX C. WETLANDS PROJECT OPPORTUNITIES

This appendix lists potential projects, project concepts and project locations for consideration by persons interested in doing wetland and riparian conservation work in Wyoming. While the appendix is not a comprehensive listing, the projects we have identified will provide some guidance and personnel contacts within the various geographic regions of the state. The appendix is also intended to assist companies, agencies, and others searching for opportunities to mitigate development impacts to wetlands and riparian habitats. Due to the possible sensitivity of identifying individual private lands, most project descriptions are conceptual and encompass broader drainages or other geographic areas. The contacts listed at the top of each project sheet can provide more specific information about private landowners who are interested in cooperating within the project area. The project opportunities listed in this appendix will be periodically updated by the Wyoming Joint Ventures Steering Committee.

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Blank Project Form

Project Name: ____________________________
Contact(s): ____________________________

Project Type:  
☐ easement  ☐ acquisition  ☐ creation
☐ restoration  ☐ enhancement  ☐ management
☐ remediation  ☐ other (specify) ____________________________

Wetland Complex Name: ____________________________
(Complex in which project is located or stream/drainage name)

Location: ____________________________
(legal description to nearest quarter section)

Dominant Ecological Cover Type: ____________________________

Estimated Project Size: Total Acres: _______  Wetlands (No): _______
Wetlands: _______ (acres)  Riparian: _______ (acres)  Upland: _______ (acres)

Estimate Total Cost: ____________________________
(if known)

Potential Partners: ____________________________
(if known)

Possible Funding Source(s): ____________________________

Description (include wildlife species that will benefit): ____________________________

__________________________  ____________________________  ____________________________

__________________________  ____________________________  ____________________________
Appendices

Project Name: Wetlands Project Database - 412 Potential Projects

Contact(s): Larry Roberts, Waterfowl Biologist, Casper, WY (307)-473-3412
larry.roberts@wgf.state.wy.us

Project Type: ☒ easement ☒ acquisition ☒ creation
(check all that apply)

☒ restoration ☒ enhancement ☒ management

☒ remediation ☐ other (specify)

Wetland Complex Name: Projects are located in major wetlands complexes throughout Wyoming.
(Complex in which project is located or stream or drainage name)

Specific Location: Individual project descriptions include location information.
(legal description to nearest quarter section)

Dominant Ecological Cover Type: Projects are primarily in low-mid elevation habitats throughout Wyoming (all habitat types).

Estimated Project Size: Total Acres: ☐ by project ☐ Wetlands (No): ☐ by project

Wetlands: ☐ by project (acres) Riparian: ☐ N/A (acres) Upland: ☐ N/A (acres)

Estimate Total Cost: Cost estimates need to be updated or developed for each project.
(if known)

Potential Partners: Potential partners are identified in database records, as applicable.
(if known)

Partners need to be recruited for many of the suggested projects.

Possible Funding Source(s): Funding sources for each project need to be identified.

Description (include wildlife species that will benefit): The wetlands project database is an inventory of project concepts that were identified in the 1980s and early 1990s by WGFD waterfowl biologists and personnel from the USFWS, BLM, and USFS. Each record identifies the project type and provides a description including the location, acreage, and other information. The database is searchable and can be sorted according to geographic area, project size, and additional parameters. A small number of projects have been completed, however the majority of records indicate projects that remain in the preliminary planning stage. The database can be accessed to identify mitigation opportunities as well as wetland protection, enhancement, and creation projects.
Appendices

Project Name: Goshen CO Wetlands Projects and Enhancements

Contact(s): Steve Tessmann, WGFD; Mark Hogan, USFWS; Greg Kernohan, DU
(307)-777-4584 steve.tessmann@wgf.state.wy.us

Project Type: [X] easement [X] acquisition [X] creation
(check all that apply) [X] restoration [X] enhancement [X] management

Wetland Complex Name: Goshen Hole Wetland Complex

Location: Springer and Table Mountain WHMAs & Surrounding Areas
(T20-23N, R60-63W)

Dominant Ecological Cover Type: Planted and Cultivated fields; Northwestern Great Plains Mixedgrass Prairie; stringers of Western Great Plains Riparian & Floodplain

Estimated Project Size: Total Acres: indeterminate Wetlands (No): >30

Wetlands: >1,500 (acres) Riparian: indeterminate (acres) Upland: indeterminate (acres)

Estimate Total Cost: $1-2 million

Potential Partners: Local Conservation Districts, landowners, USFWS, NRCS, DU, WGFD, WWDC, DEQ, SEO

Possible Funding Source(s): NAWCA, WWNRT, EQIP, GRP, WHIP, WRP, WY Water Development Fund, PFW, private (in-kind)

Description: The Goshen Hole wetland complex is one of Wyoming’s premier staging and migration conduits for waterfowl and waterbirds. The Wyoming Comprehensive Wildlife Conservation Strategy (WGFD 2005) identifies 50 vertebrate species of greatest conservation need (SGCN) that utilize wetland, riparian, and stream habitats in the Goshen Hole area. It has been estimates that between 30 – 50% of the native wetlands in the area have been altered, degraded or lost. The Goshen Hole regional plan address these losses by incorporating strategies to increase wetland habitat base by >10% through the development of additional wetland projects. Short term strategies include projects that enhance/restore hydrology of natural and irrigation water enhanced wetlands and shallow reservoirs in southern Goshen CO. Existing wetland complexes like Springer, Bump Sullivan, and Table will be improved by restoring or establishing new shallow water wetland acres adjacent to these refuge areas while providing additional secure nesting habitat. More recently, restoration work has been expanded to include restoration of backwater sloughs and oxbow wetland habitats along the North Platte River dewatered by past river alterations or filled by leveling

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activities or wind erosion. Hydrology restoration of these sites entails excavating degraded (filled) sites, providing water table and riverine connection as well as removing invasive Russian olive trees to restore cottonwood gallery corridor habitat. Long term conservation needs will be met by incorporating conservation easements to protect wetlands, riparian and upland habitats. In addition, working with local landowners, irrigation and conservation districts on large scale water improvement projects will help provide secure water for existing and new wetland projects (refer to Horse Creek Conservation District Improvements Project Level II – WY Water Development Commission, 1998. Additional opportunities to provide wetland-dependent recreation also will be explored.
Project Name: Bush Rim Springs Protective Fencing

Contact(s): Andrea Orabona, WY Game and Fish Department (307)-332-7723 x 232

andrea.orabona@wgf.state.wy.us

Project Type: [X] easement [ ] acquisition [X] creation
(check all that apply)
[X] restoration [ ] enhancement [X] management

Wetland Complex Name: Great Divide Basin (Red Desert)
(Complex in which project is located or stream or drainage name)

Location: NAD 83 Zone 12T 679508 4664629
(legal description to nearest quarter section)

Dominant Ecological Cover Type:

Estimated Project Size: Total Acres: ≤50 Acres Wetlands (No): 4 springs

Wetlands: 50 acres Riparian: Upland:
(acres) (acres) (acres)

Estimated Total Cost: __________________ (if known)

Potential Partners: Bureau of Land Management, Wyoming Game and Fish Dept.
(if known)

Possible Funding Source(s): State Wildlife Grants

Description (include wildlife species that will benefit): A series of 6 springs occurs along Bush Rim in the Red Desert. The water and associated vegetation and insects provide important habitat components for Greater Sage-Grouse and numerous Neotropical Migratory Birds, including Species of Greatest Conservation Need, especially in the midst of an otherwise dry environment. Two of the springs are fenced to exclude livestock from loitering in the sensitive wetland environment, but the remainder are unfenced and experiencing a varying degree of deterioration, both in habitat and water quality. One spring is readily accessible by vehicle and used by recreationists during the summer and hunters in the fall. While compatible recreation is not problematic, individuals have placed pit toilets directly in the flowing spring water, further degrading this important desert wetland site. Fencing would protect water quality, soils, and plants.
Appendices

Project Name: Green River Wetlands and Conservation Easements

Contact(s): Susan Patla (307-733-2383 x 229 susan.patla@wgf.state.wy.us)

Project Type: ✗ easement    ✗ acquisition    ✗ creation
(check all that apply)

Wetland Complex Name: Green River Basin
(Complex in which project is located or stream/drainage name)

Location: Green River Basin north of Interstate 80
(legal description to nearest quarter section)

Dominant Ecological Cover Type: sagebrush-steppe, cottonwood-willow riparian
gallery, mountain foothills, irrigated hayfields

Estimated Project Size: Total Acres: indeterminate     Wetlands (No): >20
Wetlands: indeterminate     Riparian: indeterminate     Upland: indeterminate
( acres )                   ( acres )                        ( acres )

Estimate Total Cost: Costs need to be estimated on a project-by-project basis.
(if known)

Potential Partners: BLM, USFS, private individuals, Green River Valley Land Trust,
(if known) energy companies

Possible Funding Source(s): NAWCA, WRP, WWNRT, WLCI, Green River Valley
Land Trust, private individuals (in-kind match), energy companies

Description (include wildlife species that will benefit): A State Wildlife Grant was
obtained in 2003 to identify and plan potential wetlands projects that will provide
additional summer habitat for resident trumpeter swans on private lands. Plans were
developed for over 20 projects; 4 projects have been completed to date. In addition,
there is a need to protect wetlands and riparian habitats threatened by subdivisions
and development throughout the region. There are also opportunities to build,
enhance, and protect wetlands as mitigation for energy development impacts. The
Wyoming Landscape Conservation Initiative may provide additional resources to
conserve wetlands and riparian resources throughout this region.
Project Name: Wind River Wetland and Riparian Restoration Projects
Contact(s): Mark Hogan – USFWS Lander, Dave Skates – USFWS Lander

Project Type: [x] easement [x] acquisition [x] creation
(check all that apply) [x] restoration [x] enhancement [x] management

Wetland Complex Name: Ocean Lake Complex, Wind River Foothills and Montane Wetlands, and Upper Wind River Wetland and Riparian Wetlands

Location: Wind River Valley Floor, including Ocean Lake, Middle Depression and Sand Mesa WYGF Units, Midvale/Riverton Irrigation District, Ray/Co ridicule Irrigation Districts, Bull Lake Dinwoody/Ring/Torrey Lake Area.

Dominant Ecological Cover Type: Montane, Sage Steppe, Cultivated Agriculture, Valley Floor

Estimated Project Size: Total Acres: Indeterminate Wetlands (No): >30
Wetlands: >1,500 acres Riparian: Indeterminate Upland: Indeterminate

Estimate Total Cost: +$2 million

Potential Partners: Local Conservation and Irrigation Districts, landowners, WGFD, WWDC, USFWS, NRCS, DU, Shoshone and Arapaho Tribes, BIA, TU, Popo Agie Anglers, RMEF, etc.

Possible Funding Source(s): Tribal Grants Programs, NAWCA, WWNRT, CREP, GRP, EQIP, WHIP, WRP, WY Water Development PFW, Private Landowner Match, TU, Popo Agie Anglers, County Rec. funds

Description (include wildlife species that will benefit): The Wind River valley floor contains more than 43,000 acres of palustrine wetlands associated with river floodplains, flood irrigation, and/or natural depressions. Complementing these wetlands is more than 3,000 miles of steam habitat and 500 plus glaciated lakes north of the Continental Divide. Valley floor wetlands function in several capacities, primarily as migration and production habitat for a variety of waterfowl and waterbirds including species like Trumpeter swans, American avocets, and Wilson’s phalaropes, as well as a late spring staging area for ring-necked ducks and lesser scaup waiting for surrounding montane lakes and ponds thaw. Over the past ten years, more than 840 wetland acres have been restored on private lands in the valley with 2,400 acres of adjacent nesting habitat managed for the benefit of waterfowl.
Appendices

Project Name: Snake River Wetlands and Conservation Easements

Contact(s): Susan Patla  (307-733-2383x229  susan.patla@wgf.state.wy.us

Project Type: easement  acquisition  creation
(check all that apply)  restoration  enhancement  management  remediation  other (specify)

Wetland Complex Name: Snake River (Jackson)
(Complex in which project is located or stream/drainage name)

Location: Snake River drainage from Jackson north to the J.D. Rockefeller Parkway
(legal description to nearest quarter section)

Dominant Ecological Cover Type: big sagebrush shrubland, cottonwood-willow
riparian gallery, aspen

Estimated Project Size: Total Acres: indeterminate  Wetlands (No): indeterminate
Wetlands: indeterminate  Riparian: indeterminate  Upland: indeterminate
(acres)  (acres)  (acres)

Estimate Total Cost: Costs need to be estimated on a project-by-project basis.

Potential Partners: Private individuals, Jackson Hole Land Trust, U.S. Forest
Service, USFWS (National Elk Refuge), NPS, WGFD, Wyoming Wetland Society,

Possible Funding Source(s): NAWCA, WRP, WWNRT, Jackson Hole Land Trust,
private individuals (in-kind match), USFS

Description (include wildlife species that will benefit): A number of landowners
within the Snake River drainage have expressed an interest in establishing
conservation easements to protect important and scenic habitats that may ultimately
be threatened by sale and subdivision. There are also opportunities to continue
building wetlands projects and enhancing wetlands both on federal and private lands.
Project Name: Cokeville Meadows NWR Acquisition

Contact(s): Carl Millegan, USFWS (307)-875-2187x19, carl_millegan@fws.gov

Project Type:  
- easement  
- acquisition  
- creation
- restoration  
- enhancement  
- management
- remediation  
- other (specify)

Wetland Complex Name: Bear River
(Complex in which project is located or stream/drainage name)

Location: T22-24N, R119-120W
(legal description to nearest quarter section)

Dominant Ecological Cover Type: Sagebrush shrubland, irrigated hay meadows, cottonwood willow riparian gallery, wetlands.

Estimated Project Size:  
- Total Acres: 26,657  
- Wetlands (No): no data

- Wetlands: no data (acres)
- Riparian: 20-mile segment of the Bear R. (acres) + tributaries
- Upland: no data (acres)

Estimate Total Cost: Approximately $14 million, potentially less if some lands are secured through perpetual easements, leases, management agreements, or donations.

Potential Partners: USFWS, WGFD, IWJv, TNC, WLCI, NRCS, land trusts, private individuals

Possible Funding Source(s): Congressional appropriations (Land & Water Conserv. Fund, Migratory Bird Conserv. Fund.), NAWCA, WLCI, USDA-MRCS Wetlands Reserve Program (WRP), WWNRT (easements only), energy mitigation funds, land trusts, private (in-kind) match, explore other options

Description (include wildlife species that will benefit): The approved acquisition boundary for Cokeville Meadows NWR is 26,657 acres. Currently, 9,259 acres have been secured through fee title acquisition and perpetual easements. A total of 17,398 acres remain in private ownership and are at risk of being sold and subdivided or otherwise developed. The appraised value of ranchlands within the refuge boundary is approximately $800 per acre (2007 figures).
Project Name: Bear River Initiative

Contact(s): Carl Millegan, USFWS (307)-875-2187x19, carl_millegan@fws.gov
Steve Jester, TNC (307)-677-1404 sjester@tnc.org

Project Type: easement, acquisition, management
(check all that apply) restoration, enhancement, remediation, other (specify)

Wetland Complex Name: Bear River

Location: T22-25N, R119-120W and T14-18N, R120-121W

Dominant Ecological Cover Type: Sagebrush shrubland, irrigated hayfields,
Cottonwood-willow riparian gallery, wetlands.

Estimated Project Size: Total Acres: indeterminate Wetlands (No): indeterminate
Wetlands: indeterminate Riparian: 2 segments of the Bear R. (~50 mi) + tributaries in WY
Upland: indeterminate (acres)

Estimate Total Cost: Indeterminate – potentially a multi-million dollar project

Potential Partners: USFWS, WGFD, IWJV, TNC, WLCI, NRCS, land trusts, private individuals, UT, ID

Possible Funding Source(s): NAWCA, WLCI, WWNRT (easements only), energy mitigation funds, land trusts, private (in-kind) match, USDA-NRCS – Wetlands Reserve Program (WRP), explore other options

Description (include wildlife species that will benefit): The Bear River in WY, UT, and ID is an exceptionally diverse habitat and important migration corridor for migratory birds. Most lands throughout the corridor remain in traditional ranching operations, but are increasingly at risk of being sold and subdivided or otherwise developed. The Bear River Initiative is a cooperative effort to conserve key habitats along the Bear River system in Idaho, Utah, and Wyoming through a combination of restoration, enhancement, easements, and acquisitions. The project is being developed by the 3 refuge managers on the Bear River System in cooperation with The Nature Conservancy and other partners. The 3 refuges include Cokeville Meadows, Bear River, and Bear Lake NWRs. The project area covers the upper, middle, and lower Bear River watershed. All 3 reaches will come together to develop a single set of priorities for a Conservation Action Plan.

Continuation of the acquisition process for Cokeville Meadows NWR could potentially be integrated within the scope of the Bear River Initiative. Although interest in the Bear River Initiative is high, funding and match availability are currently limited.
Project Name:  Little Snake R. Projects & Conservation Easements

Contact(s):  Steve Jester, TNC  (307)-677-1404  sjester@tnc.org
            Larry Hicks, Little Snake R. Conserv. District  (307)-383-7860  lsrdc@yahoo.com

Project Type:  [X] easement  [X] acquisition  [X] creation
              (check all that apply)  [X] restoration  [X] enhancement  [X] management

Wetland Complex Name:  Little Snake River / Muddy Creek

Location:  West of the Sierra Madre Range:  T12N, R89-93W & T16N, R92W

Dominant Ecological Cover Type:  Cottonwood/willow riparian gallery, sagebrush shrubland, greasewood flats, irrigated hayfields

Estimated Project Size:  Total Acres:  indeterminate  Wetlands (No):  indeterminate

Wetlands:  >600  Riparian:  indeterminate  Upland:  indeterminate
         (acres)  (acres)  (acres)

Estimate Total Cost:  Potential for numerous projects/acquisitions totaling several million dollars.

Potential Partners:  TNC, USFWS Partners Program, WRP, LSRCD, NRCS, WGFD, IWJF, private landowners.

Possible Funding Source(s):  WWNRT (easements & enhancement projects), WRP, NAWCA, USFWS Partners Program, Wildlife Habitat Trust Fund, in-kind match

Description (include wildlife species that will benefit):  Several landowners along the Little Snake River floodplain and tributaries are interested in establishing perpetual conservation easements on their properties. The Nature Conservancy and other land trusts have significant “in-kind” match available from other acquisitions and easements on both sides of the Wyoming/Colorado state line in this location. In addition, potential exists for wetlands creation, restoration, and enhancement projects along the Little Snake R. and Muddy Creek. The Muddy Creek wetlands project has created several hundred acres of wetlands along a 6-mile reach of Muddy Creek approximately 25 miles north of Baggs. There is potential for additional wetlands creation and also a need to fund maintenance and enhancement of the existing wetlands. The Muddy Creek Wetlands project is an Audubon Important Bird Area with 111 avian species documented including several T&E species and species of greatest conservation need.

http://iba.audubon.org/iba/viewSiteProfile.do?siteId=2608&navSite=state
Wyoming Statewide Comprehensive Outdoor Recreation Plan (SCORP) 2014 - 2019

Governor
Matthew H. Mead

Wyoming Department of State Parks and Cultural Resources
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