The Special Values of the Great Divide

Attachment E

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The Special Values of the Great Divide

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Sage Grouse © Ben Franklin, Pronghorn by Steve Torbit

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Executive Summary

The Great Divide planning area in south-central and southeastern Wyoming, managed by the Rawlins Field Office of the Bureau of Land Management (BLM), is a huge expanse of *public* land home to numerous outstanding natural values. The public lands are owned in common by all Americans and managed for the public by the BLM, an agency within the Department of Interior. In the Great Divide, BLM administers approximately 3.5 million acres of public land and subsurface minerals; on an additional 1 million acres BLM manages only the subsurface minerals while the surface is owned by other entities. Taken together, all 4.5 million acres of BLM land/minerals is found within an outer BLM Field Office boundary totaling, including all ownerships, about 11 million acres.

The public lands managed by the BLM within the Rawlins Field Office generally occur in two large blocks, one south-southwest of Rawlins and the second about 20 miles north of Rawlins, spreading both east and west. In between these two areas is the "checkerboard," a 40-mile wide strip of alternating square-mile sections of BLM and private/state ownership that follows the original Union Pacific railroad route and today roughly parallels Interstate 80. Smaller areas of BLM land are scattered throughout the study area. The Great Divide encompasses the eastern half of the renowned Red Desert.

Outstanding Natural Values

Big Game and Hunting: Over 100,000 pronghorn (also known as antelope), 85,000 mule deer, and 18,000 elk make their home here. BLM lands hold over 800,000 acres of crucial range for these big game species. According to the Wyoming Game and Fish Department (WGFD), the economic contribution from hunting totals more than $18 million annually. Fishing and wildlife viewing generate an additional $40 million and $55 million respectively. Together, outdoor pursuits account for more than 2,400 jobs.

Sage Grouse and Raptors: Beyond big game species, the Great Divide is home to valuable populations of several other wildlife species of great conservation interest. Twenty-five percent of Wyoming's sage grouse leks (courtship and mating grounds) are here, with estimates as high as 234 individual leks. Fifteen species of raptors are present, including ferruginous hawk, golden eagle, bald eagle, and prairie falcon. The area is particularly important for ferruginous hawks. The Great Divide hosts more nesting pairs of these large hawks than anywhere else in Wyoming. In 2002, 68 nests were documented to have produced and fledged young.

Black-footed Ferrets and Prairie Dogs: Wyoming's only population of endangered black-footed ferrets is in the Great Divide, in an area known as Shirley Basin. Recent surveys revealed 88 live ferrets. These ferrets depend almost exclusively on healthy populations of white-tailed prairie dogs. Prairie dogs are considered by scientists to be keystone species, meaning they play a critical role in their ecosystems. For this reason, the large prairie dog complexes within the Great Divide—seven of the largest known complexes rangewide—must be considered to be of particularly high value in helping conserve and restore the ferret and other species.

Backcountry Recreation and Wilderness: Nearly 300,000 acres, or about eight percent, of the Great Divide consists of wilderness-quality lands where citizens can find refuge from the noise and bustle of the city. Ten remarkable wild areas meet the criteria for Wilderness set by Congress and the Interior Department. These wild places range from the Red Desert badlands and hoodoos of Adobe Town—the largest potential Wilderness on BLM lands in Wyoming—to the forest mountain ecosystem of the Ferris Mountains and the tall granite domes of the Pedro Mountains. Portions of six areas totaling 1.9% of the Great Divide have been given interim protection as Wilderness Study Areas (WSAs) until Congress decides to designate them as Wilderness.

However, BLM's inventory ignored key portions of Adobe Town, Encampment River Canyon, Prospect Mountain, Bennet Mountains, Red Lake Dunes, and Ferris Mountains and completely omitted or failed to provide WSA protection for other exceptional areas: Wild Cow Creek, Kinney Rim North and South, and Pedro Mountains. Adobe Town and Kinney Rim are being impacted by oil and gas development currently. In total, WSA status was not provided for 77 percent of the wilderness quality lands in the area.

Scenery and Historic Trails: The Great Divide possesses some of the most beautiful natural scenery in the state. Examples include clay badlands sculpted by wind and water at Prehistoric Rim, active sand dunes of Ferris Dunes, outlooks such as the Ferris Mountains where visitors can see outstanding panoramic vistas for miles, "a rugged canyon with colorful rock outcroppings and thick riparian vegetation" in the Encampment River canyon and a 35-foot tall scenic waterfall on Duck Creek. In addition, the Cherokee and Overland historic expansion era trails and the Continental Divide National Scenic Trail pass through the Great Divide. The natural settings of these important historic and recreation trails provide a window to our past in a landscape that in many places looks much like it did when the pioneers were crossing the Great Divide.

Increasing Threats

The Great Divide planning area is under extreme pressure from industrial development, primarily for natural gas, coalbed methane (CBM), oil, and coal deposits. Several thousand wells are currently proposed by industry and numerous decision documents are expected in the near future. Accompanying these wells would be numerous wastewater ponds and hundreds or thousands of miles of new roads, pipelines, powerlines, and other facilities.

BLM Planning Decisions

BLM is in the process of revising its long-term management plan for the area, known as a Resource Management Plan or RMP. The revision process, which BLM will complete by 2006, will determine which areas will be open to industrial development and which areas will be given special protection. Equally important, the new plan will also determine the environmental safeguards for those development activities that are permitted. The BLM's stated goal is to "obtain a balance of allowable activities and management strategies that meet all legal mandates." To a large extent, the BLM land management planning process will determine the future of the natural values within the Great Divide planning area.

Introduction

The Great Divide planning area in south-central and southeastern Wyoming, managed by the Rawlins Field Office of the Bureau of Land Management (BLM), is a huge expanse of *public* land home to numerous outstanding natural values. These lands are owned in common by all Americans and managed for the public by the BLM, an agency within the Department of Interior. Natural values within the Great Divide range from world-class big game populations to scenic vistas of national park caliber, from Wyoming's only wild population of the globally rare black-footed ferret to strongholds of disappearing birds like the sage grouse and mountain plover. In addition, there are hundreds of thousands of acres of wilderness-quality lands where citizens can find refuge from the noise and bustle of the city. Some of these wildlands are afforded protection as Wilderness Study Areas (WSAs) and others are completely unprotected.

The Great Divide area is under extreme pressure from industrial development, primarily for natural gas, coalbed methane (CBM), oil, and coal deposits. One example of this pressure is the Atlantic Rim CBM project, which could result in up to 3,880 production wells on the eastern edge of the Red Desert (Bureau of Land Management 2001). Accompanying these wells would be numerous wastewater ponds and hundreds or thousands of miles of new roads, pipelines and powerlines.

Pronghorn Photo courtesy BLM

BLM is in the process of revising its long-term management plan for the area, known as a Resource Management Plan (RMP). The revision process, which BLM will complete in the next few years, will determine which areas will be open to industrial development and which areas will be given special protection. Equally important, the new plan will also determine the environmental safeguards for those development activities that are permitted. The BLM's stated goal is to "obtain a balance of allowable activities and management strategies that meet all legal mandates" (BLM 2003a). To a large extent, the BLM land management planning process will determine the future of the natural values within the Great Divide planning area.

Our goal in creating this report is to demonstrate the outstanding natural and cultural values present on the BLM lands of the Great Divide, and the major threats to those values, in a concise and easy-to-read format. Where possible, maps are used to show the location and extent of these values and threats. The report distills the huge amount of reliable information available about the natural wonders found in the Great Divide so that concerned citizens and decisionmakers can give full consideration to protecting those values.

The Study Area: Vicinity and Land Ownership Maps

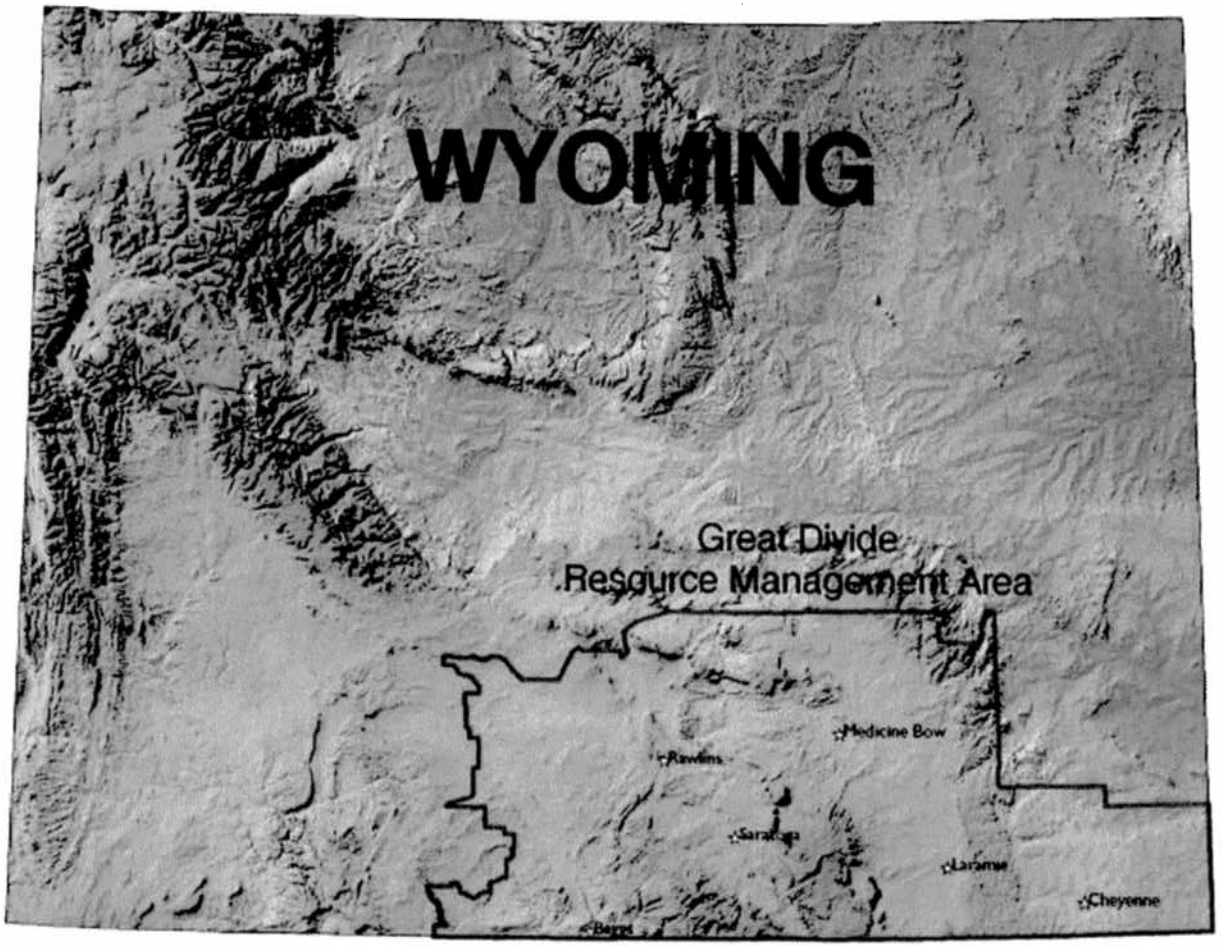
The Great Divide planning area in southeastern Wyoming covers about 3.5 million acres of BLM-administered public land and subsurface minerals. On an additional 1 million acres BLM manages only the subsurface minerals while the surface is owned by other entities. These are known as "split estate" lands. Taken together, all 4.5 million acres of BLM land/minerals is found within an outer BLM Field Office boundary totaling, including all ownerships, about 11 million acres. On the color shaded relief map shown on page 3, the outer boundary of the planning area is shown in red. All or portions of Sweetwater, Carbon, Laramie and Albany Counties are within the Great Divide boundary, including the towns of Cheyenne, Laramie, Saratoga, and Rawlins.

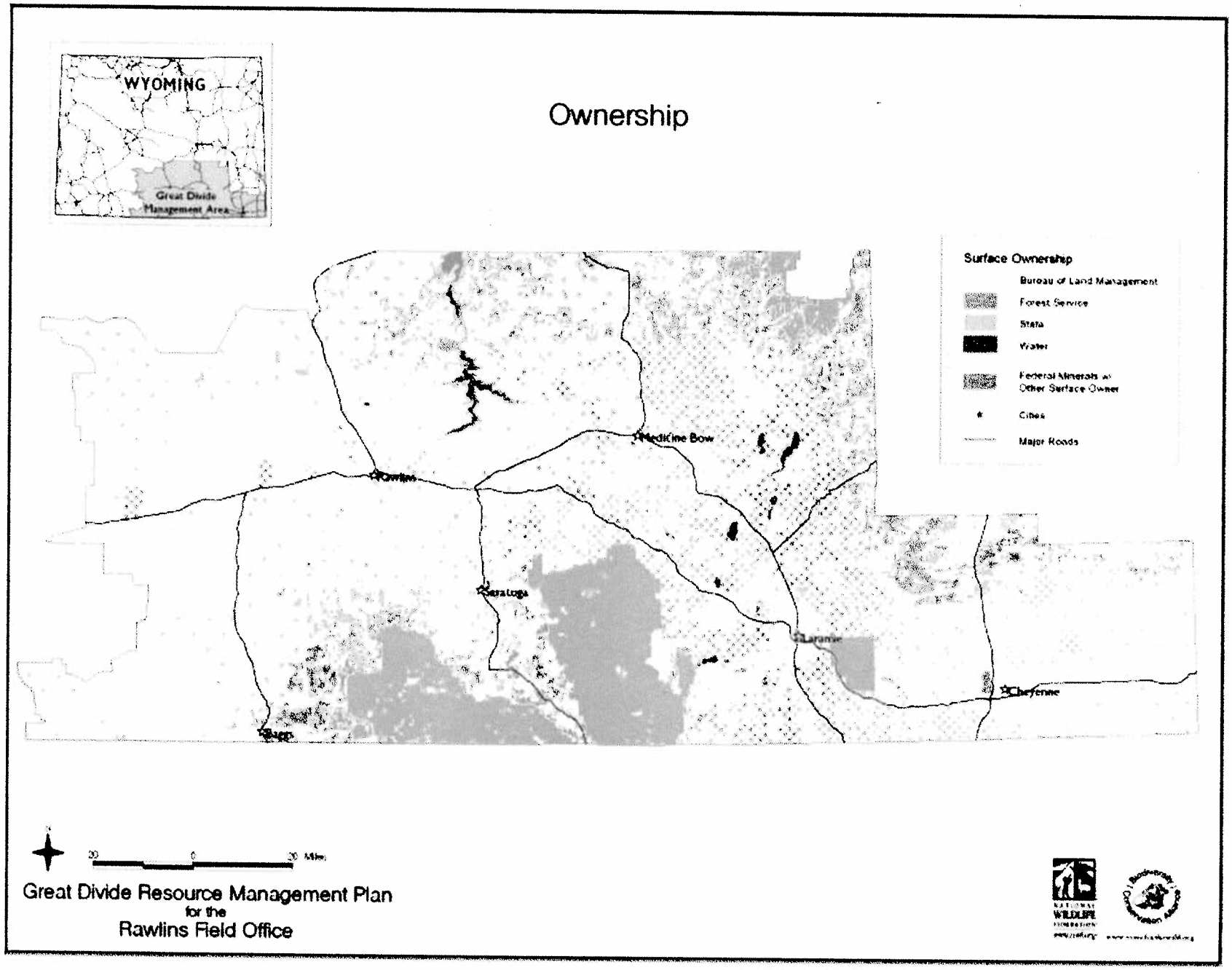
The land ownership pattern is presented in the map on page 4. As can be seen in yellow, the public lands managed by the BLM within the Rawlins Field Office generally occur in two large blocks, one south-southwest of Rawlins and the second about 20 miles north of Rawlins, spreading both east and west. In between these two areas is the "checkerboard," a 40-mile wide strip of alternating square-mile sections of BLM and private/state ownership that follows the original Union Pacific railroad route and today roughly parallels Interstate 80. Smaller areas of BLM land are scattered throughout the study area. The Medicine Bow National Forest's Sierra Madre, Snowy Range, Pole Mountain units, and a bit of the Laramie Peak unit, are also found within the Rawlins Field Office boundary. Although these lands are managed by the United States Forest Service (USFS), the minerals are managed by the BLM. Areas where BLM minerals underlie non-BLM surface ownership are shown in orange on the map (not shown for USFS lands). Significant BLM split-estate mineral ownership occurs east-northeast of Baggs, northeast of Medicine Bow, and northeast of Laramie as well as in a checkerboard pattern in several other areas near Medicine Bow and both north and south of Laramie.

The Great Divide encompasses the eastern 53% of the renowned Red Desert, which includes all of the Great Divide planning area west of a line drawn from the towns of Baggs to Rawlins and extending about 25 miles north of Rawlins. Portions of the Shirley Basin, Laramie Basin, Platte River Basin, and several isolated mountain ranges such as the Ferris Mountains, Pedro Mountains, and Seminoe Mountains fall within the Great Divide as well.

The Great Divide is a land of high mountains, high plains, and high deserts. Habitats present in the Great Divide are very diverse, ranging from native trout streams and larger, warm-water rivers, to desert playas, dune fields and sagebrush flats, to deep conifer, aspen forest and woody draws.

Great Divide Resource Management Plan
for the
Rawlins Field Office




WYOMING
Great Divide Management Area
Ownership
Surface Ownership
Bureau of Land Management
Forest Service
State
Water
Federal Minerals w/ Other Surface Owner
Cities
Major Roads
Medicine Bow
Rawlins
Saratoga
Laramie
Cheyenne
Great Divide Resource Management Plan
for the
Rawlins Field Office

Important Big Game Habitat

The BLM lands within the Great Divide contain important habitat for pronghorn (also known as antelope), elk, mule deer, as well as bighorn sheep. The planning area has one of the highest densities of pronghorn in the world (Bureau of Land Management 2003b, citing Kotter 2002 and Lanka 2002), and provides "crucial habitat" for all four species. Crucial habitat is "the determining factor in a population's ability to maintain itself at a certain level" (WGFD 2000d).

In the western two-thirds of the study area, big game herds number nearly 109,000 pronghorn, 85,000 mule deer, and 18,000 elk, not including the herds in the eastern portion of the state (which involve much less BLM land) (WGFD 2004a).

Crucial winter range and crucial winter/yearlong range are shown on the map on page 8. According to WGFD data, approximately 544,351 acres of BLM lands in the study area are crucial winter or crucial winter/yearlong habitat for pronghorn, shown in blue hatching on the map. Similarly, 206,261 acres of BLM lands in the study area are crucial winter or crucial winter/yearlong habitat for elk, shown in gold on the map. About 368,475 acres are crucial winter or crucial winter/yearlong habitat for mule deer, shown in red hatching on the map. Migration routes known to WGFD and other experts also are shown as lines on the map, with colors corresponding to the crucial habitat for each species. Elk and bighorn sheep birthing areas are shown as brown and green polygons, respectively. Acreage figures are shown in the table on page 7.

Bull Elk and Pronghorn Photos by Steve Torbit

In total, the BLM lands within the Great Divide provide over 800,000 acres of crucial big game habitat for over 212,000 animals. This is over 1,200 square miles, a public land area about the size of the state of Rhode Island that is necessary for healthy wildlife populations. More general, non-crucial habitat totaling over one million acres is also found in the Great Divide. Readers should note that the map on page 8 shows important habitats for all ownerships, but the acreage figures discussed above and in the table on page 7 are for BLM land only unless otherwise indicated.

Within the Great Divide, WGFD has established several Wildlife Habitat Management Areas on BLM lands specifically to benefit big game. These include Chain Lakes, 32 miles northwest of Rawlins for pronghorn winter habitat and migration routes; Red Rim-Daley ten miles southwest of Rawlins for pronghorn winter habitat; Red Rim-Grizzly, 30 miles south of Rawlins for elk and mule deer; Pennock Mountain, five miles northeast of Saratoga for elk, deer, and pronghorn, the Wick unit, for elk in scattered parcels along Interstate Highway 80 and between Saratoga and Rock River, and Laramie Peak, for bighorn sheep, elk, and pronghorn.

The map on page 9 shows areas where important (crucial and birthing) habitats for multiples species overlap. Areas where three such habitats overlap are shown in red, two such habitats in pink, and areas with a single important habitat are in gray. As the map shows, the Powder Rim area west of Baggs seems to be particularly important in this respect. In addition, Powder Rim and Sand Hills/Cow Butte are considered "especially important general wildlife habitat areas" by WGFD (2002a).

Because of the extensive habitat for big game, the Great Divide provides outstanding hunting opportunities. Recent data from WGFD confirms this: 5,089 elk, 5,619 deer, and 7,174 pronghorn were harvested in the Great Divide in 2002 (WGFD 2004a). A useful measure of the value of the big game herds living in the Great Divide is the success rate of hunters seeking game in the planning area as compared to statewide average success rates. The maps on pages 10, 11, and 12 respectively display elk, pronghorn, and mule deer hunter success rates for the individual hunt areas of the Great Divide. As can be seen in the maps, hunting success is very good in many areas. Compare the success rates on these maps to the statewide 2002 success averages: elk – 38.5%; mule deer – 54.6%; pronghorn – 91.3% (WGFD 2003f). Areas which stand out include north and east of the town of Baggs for mule deer, virtually all the areas with significant BLM surface ownership for elk, and many areas for pronghorn.

Threats: Big game must have access to their crucial habitat if they are to survive. Activities and structures which prevent animals from reaching crucial habitat, damage or eliminate crucial habitats, or cause animals to avoid crucial habitat can severely impact the health and size of the herds. Of course, widespread impacts to other noncrucial habitats can also negatively affect big game.

A recent seminal study of elk in the sagebrush deserts of the Jack Morrow Hills, to the northwest of the Great Divide, found that "elk avoided areas within 2 km of major roads and active gas/oil wells during the summer and 1 km during the winter," and concluded that "[t]hese results support maintaining disturbance-free areas for calving elk" (Powell 2003). It is important to note that in this study, there was no measurable well and road construction involved—the avoidance occurred in response to pre-built, already existing roads and wells. This study casts doubt on

whether the standard BLM timing stipulations (under which construction activities, but not well siting or production activities, cannot occur within crucial winter range during the winter season) are effective in reducing impacts to wintering elk. Once wells and roads have been built in crucial winter range, the damage is done: The ongoing traffic and activity may be sufficient to drive elk away from these crucial ranges from the time facilities are constructed to the time when they are reclaimed.

The WGFD has expressed concerns about the impacts on big game from energy development and other disturbances. In addition, several scientific studies in Wyoming have demonstrated the impacts of development on big game. Here is one example of each.

"In Graphite Hollow, a critical elk winter range at the south end of Deadline Ridge, winter elk use decreased substantially both during and after drilling activity. Similarly, Riley Ridge was abandoned as a winter range following drilling, in an area with limited public access due to private lands. When wellfield development was completed, a 6,000 acre winter range was abandoned after 3 wells were drilled and 6 miles of roads constructed..." (Johnson and Wollrab 1987).

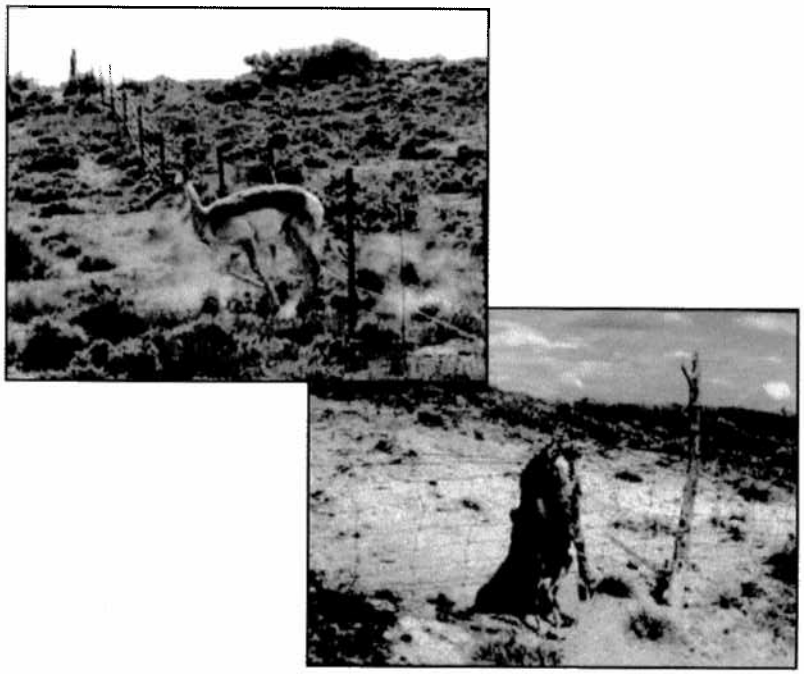
"[E]lk use of an area is dependent on the amount of human disturbance the area receives... We are unaware of any scientific literature that would support the assumption that elk will continue to use areas that have road densities of 2.0 road miles/square mile in open habitats. Thomas et al. (1979) reported that elk habitat effectiveness declined 54% when improved road densities were 2.0 square mile in a forested environment. We anticipate the decline would be much greater in the unforested habitat in the Jack Morrow Hills area, due to less cover, topographic relief, and consequent higher visibility of disturbance factors than are found in forests..." (WGFD 2000c). Because much of the Great Divide area is also unforested habitat, it is to be expected that the concerns of WGFD would apply here as well.

The BLM itself has acknowledged the importance of "maintaining connectivity between important habitats (crucial winter ranges, severe winter relief areas, calving/fawning habitats, migration corridors, topographic relief areas, mountain shrub communities, forest type habitats) within the planning area is paramount to sustaining viable big game herds and other wildlife. Fragmentation of these crucial habitats will not sustain big game population objectives..." (BLM 2000).

Beyond energy development and roads, the type and placement of fences are also of great concern to wildlife managers, particularly if they are constructed in a manner that inhibits movement of pronghorn or other big game species to crucial winter range. A poignant example of the problems caused by inappropriate fence construction took place in the 1980s in the vicinity of Red Rim, southwest of Rawlins. A private individual erected a 28-mile fence through the checkerboard, encircling almost 10,000 acres of BLM land that included substantial crucial winter range. The fence, which consisted of five foot high mesh and barbed wire, prevented pronghorn from reaching their crucial wintering grounds. During the severe winter of 1983 the pronghorn stacked up on the outer side of the fence, vainly searching for a way to reach winter range. They could not penetrate the fence and hundreds starved to death.

To allow movement through fences, the bottom strand must be smooth (without barbs) at least 16 inches above ground, and the top strand must be no more than 38 inches high. This design allows pronghorn to pass below the fence in good weather and jump over the fence when the bottom is blocked by snow. Unfortunately, even these fences can prevent or alter big game movements.

The map on page 13 shows fences in southwest Wyoming (including the Great Divide as far east as the eastern side of the Medicine Bow mountains) delineated during an inventory conducted in the early 1990s by BLM and digitized by the Wyoming Cooperative Habitat Unit (WGFD/UW). More than 5,400 miles of fence exist within the western portion of the Great Divide area, on all surface ownerships. The WGFD recommended that all or portions of 1,432 miles of this fence be modified because they restrict or could restrict pronghorn movement to or within crucial winter range or migration routes, violate WGFD permit conditions, or other reasons (Wyoming Geographic Information Sciences Center 2001; DeGroot 1992). A total of 953 miles of fence are "unauthorized" by the BLM, 44 of which are actually on BLM lands.



Pronghorn and Mule Deer Caught in Fences, Great Divide
Photos by BCA

Big Game Ranges: Acres and Percent on BLM Lands

	Crucial Winter	Crucial Winter/ Yearlong	Spring/ Summer/Fall	Severe Winter Relief	Winter	Winter/ Yearlong	Yearlong
PRONGHORN							
BLM	149	544,201	597,917	0	0	2,002,461	318,885
Total	14,566	1,383,792	1,752,630	4,486	0	4,563,461	2,168,246
% on BLM	1	39	34	0.0	0.0	44	15
ELK							
BLM	36,493	169,768	114,285	0	233,147	338,722	192,576
Total	117,645	485,154	1,239,006	0	560,997	1,385,784	316,068
% on BLM	31	35	9		42	24	61
MULE DEER							
BLM	2,720	365,755	473,885	0	21,935	1,310,072	429,855
Total	4,862	1,150,964	2,131,282	0	24,924	3,315,870	2,750,919
% on BLM	56	32	22		88	40	16

Land Ownership	Acres (approx.)	Percent
Not Noted	23,734	0.2
BLM	3,547,368	31.6
Bureau of Reclamation	32,918	0.3
Dept. of Defense	6,023	0.1
Fish & Wildlife Service	6,557	0.1
Forest Service	996,831	8.9
Private	5,820,436	51.8
State of Wyoming	736,381	6.6
Water	60,142	0.5
Total	11,230,391	100

Definitions

Crucial Winter Range: Winter range which is so important it determines the population's ability to maintain itself over the long term.

Crucial Winter/Yearlong Range: As above, but important year-round use with significant additional animals in winter.

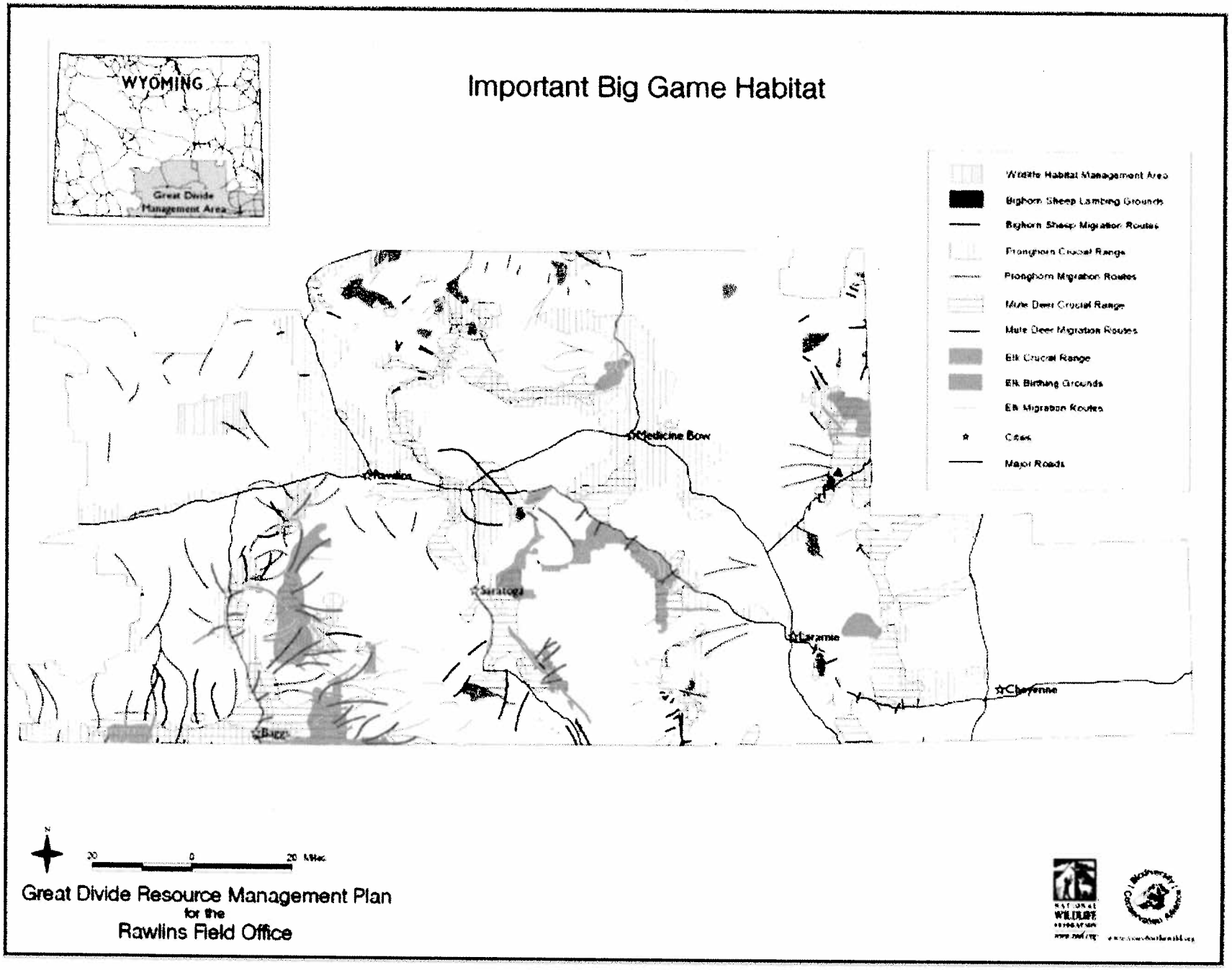
Spring/Summer/Fall: Used from end of previous winter to onset of persistent winter conditions, commonly May through November.

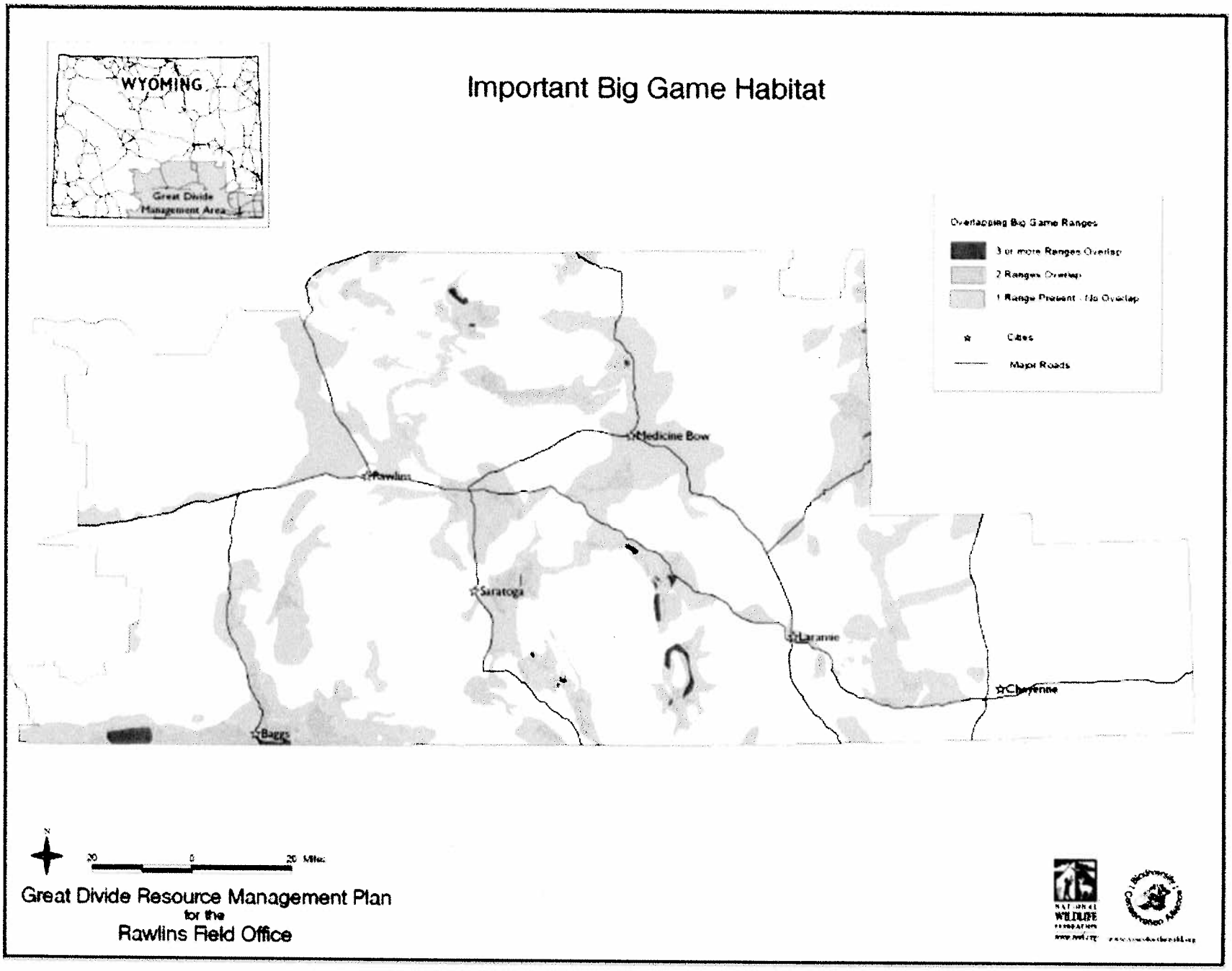
Severe Winter Relief: Survival range used primarily only in extremely severe winters.

Winter: Animals use this annually, with substantial numbers only during winter.

Winter/Yearlong: General use year round with significant additional animals in winter.

Yearlong: General use yearlong.


WYOMING
Great Divide Management Area
Important Big Game Habitat
Wildlife Habitat Management Area
Bighorn Sheep Lambing Grounds
Bighorn Sheep Migration Routes
Pronghorn Crucial Range
Pronghorn Migration Routes
Mule Deer Crucial Range
Mule Deer Migration Routes
Elk Crucial Range
Elk Birthing Grounds
Elk Migration Routes
Cities
Major Roads
Medicine Bow
Rawlins
Saratoga
Laramie
Cheyenne
Baggs
N
20
0
20 Miles
Great Divide Resource Management Plan
for the
Rawlins Field Office


Important Big Game Habitat
WYOMING
Great Divide Management Area
Overlapping Big Game Ranges
3 or more Ranges Overlap
2 Ranges Overlap
1 Range Present - No Overlap
Cities
Major Roads
Medicine Bow
Rawlins
Saratoga
Laramie
Cheyenne
Baggs
N
20
0
20 Miles
Great Divide Resource Management Plan
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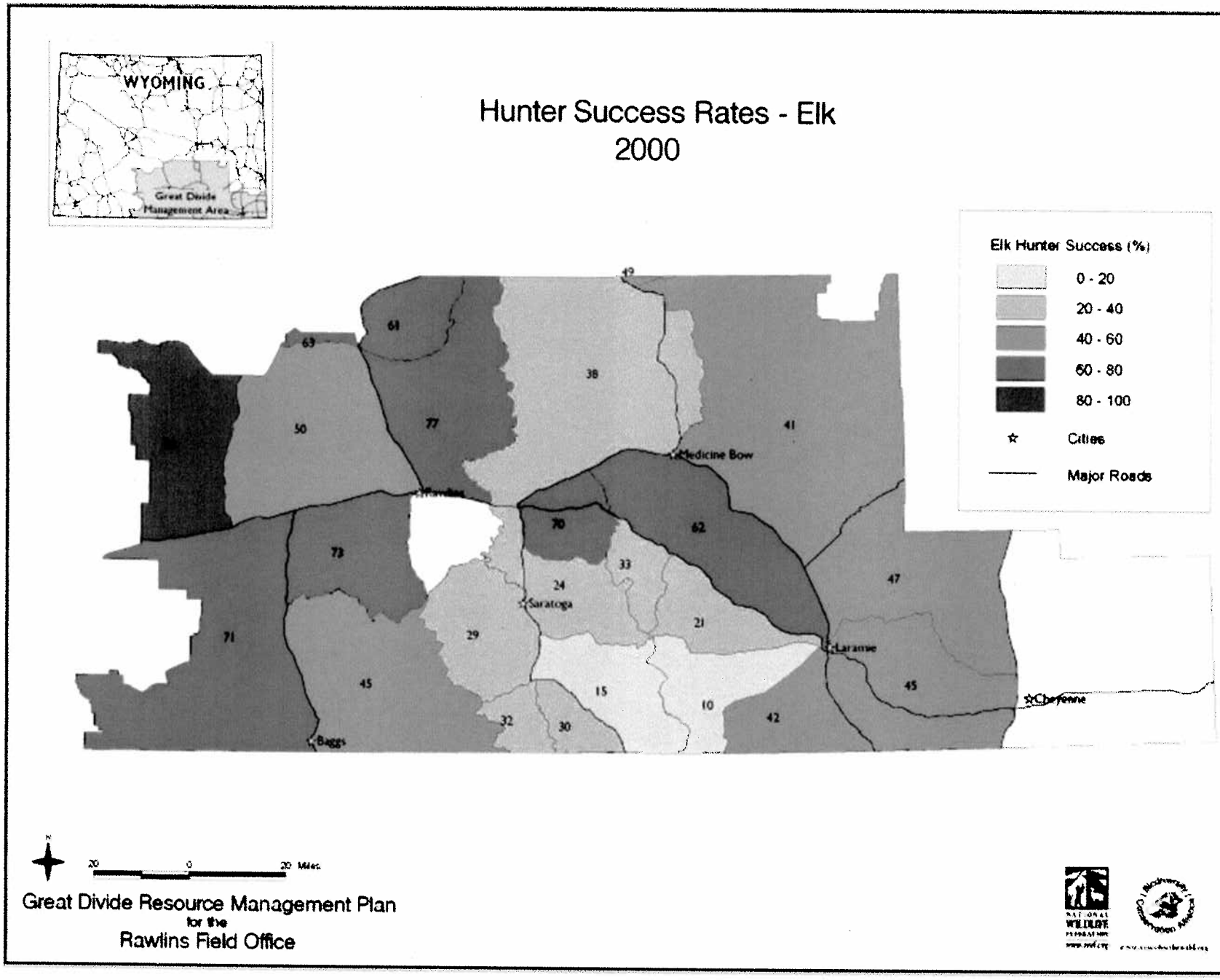
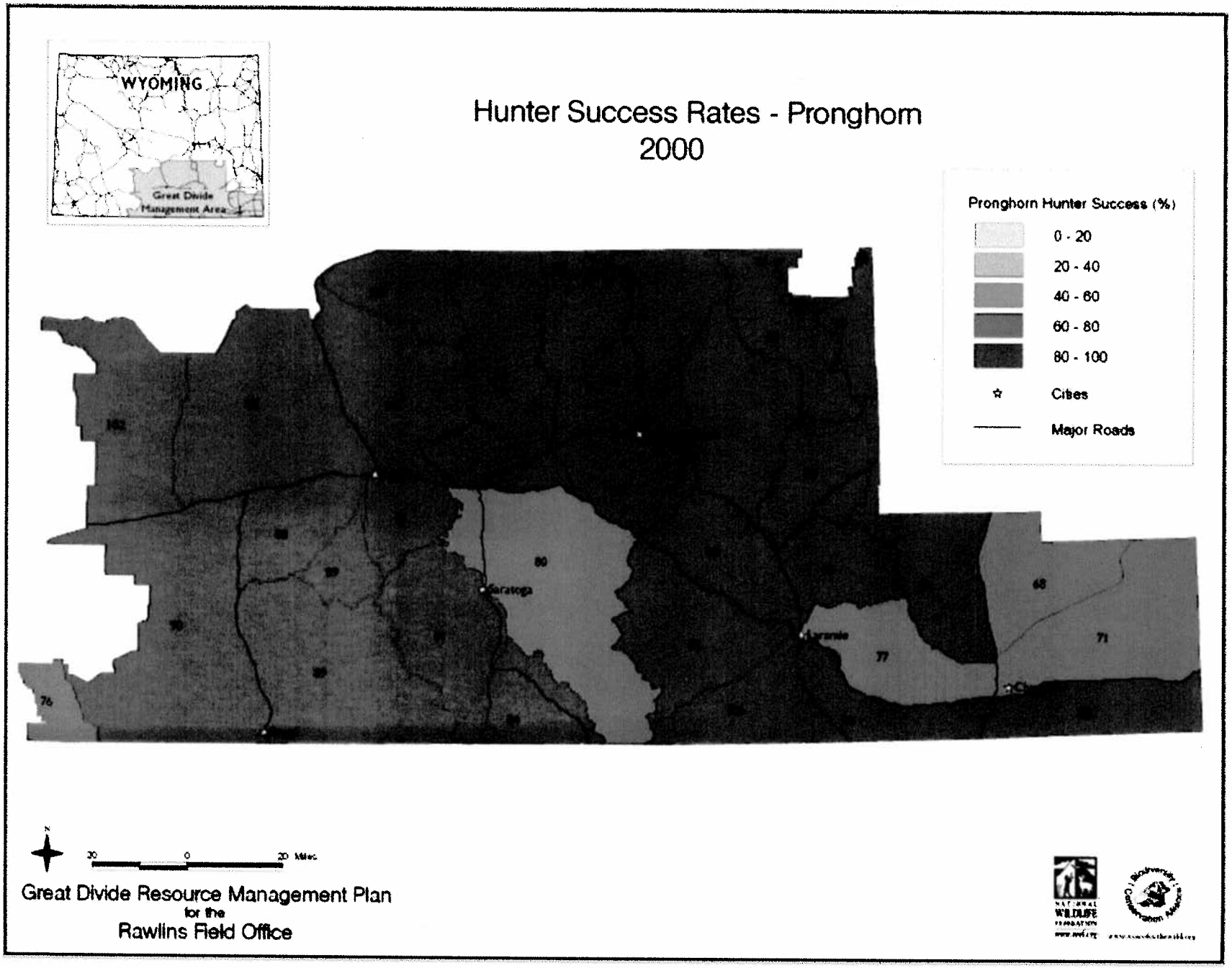
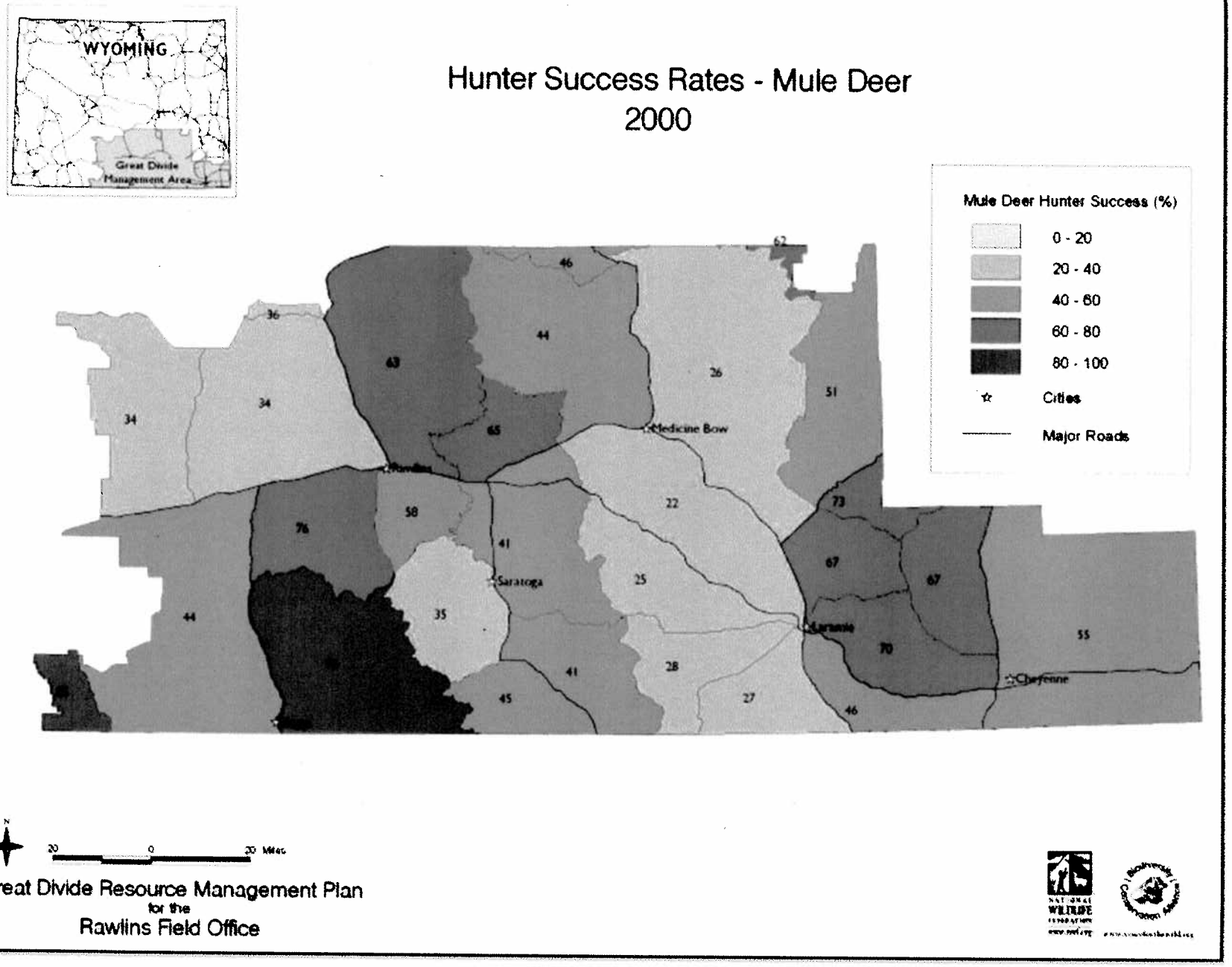
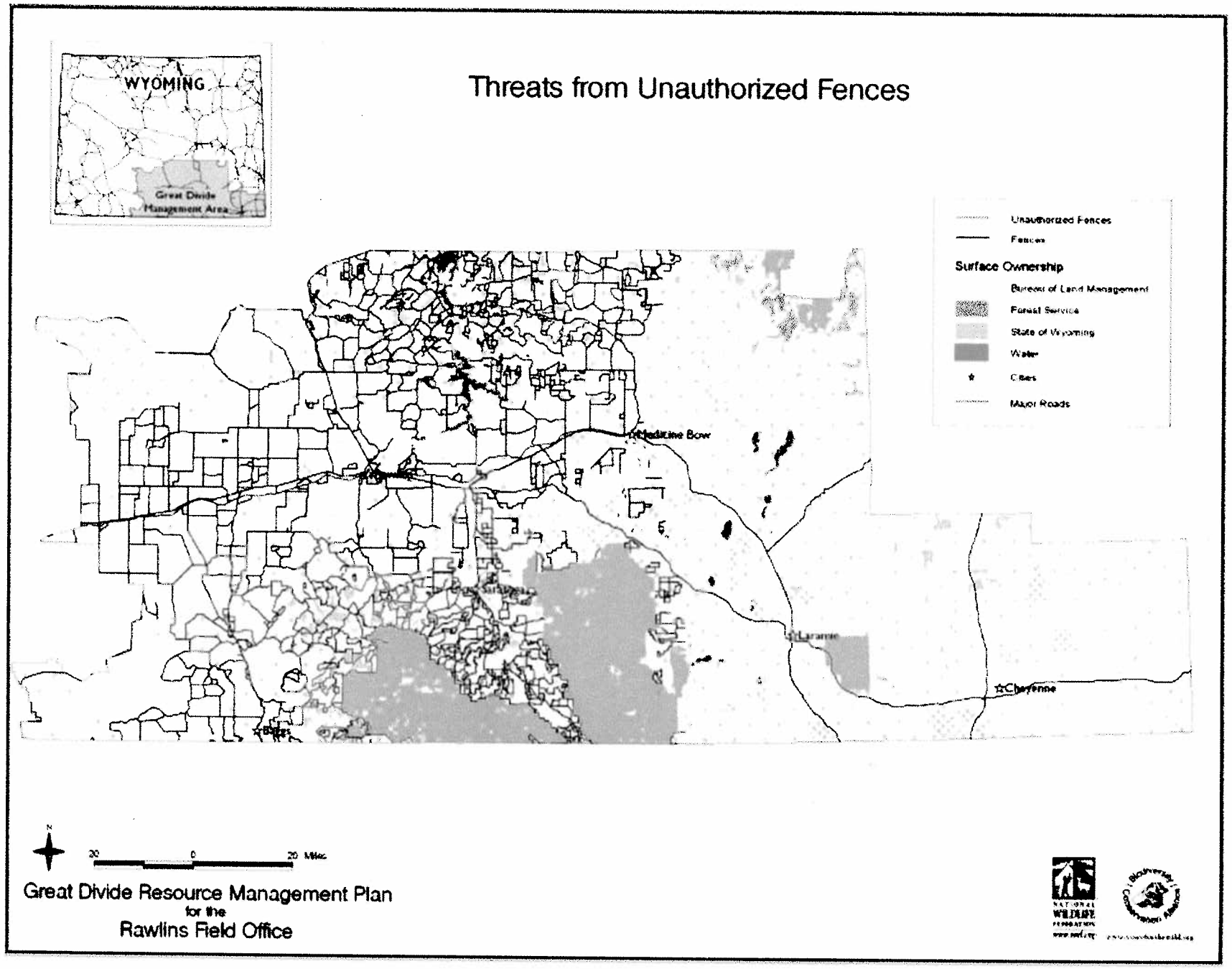

WYOMING
Great Divide Management Area
Hunter Success Rates - Elk
2000
Elk Hunter Success (%)
0 - 20
20 - 40
40 - 60
60 - 80
80 - 100
Cities
Major Roads
61
63
38
50
77
41
Medicine Bow
70
62
73
33
24
Saratoga
47
71
29
21
Laramie
45
15
45
Cheyenne
10
32
30
42
Baggs
20
0
20 Miles
Great Divide Resource Management Plan
for the
Rawlins Field Office


WYOMING
Great Divide Management Area
Hunter Success Rates - Pronghorn
2000
Pronghorn Hunter Success (%)
0 - 20
20 - 40
40 - 60
60 - 80
80 - 100
Cities
Major Roads
Saratoga
Laramie
80
77
68
71
76
N
20
0
20 Miles
Great Divide Resource Management Plan
for the
Rawlins Field Office


WYOMING
Great Divide Management Area
Hunter Success Rates - Mule Deer
2000
Mule Deer Hunter Success (%)
0 - 20
20 - 40
40 - 60
60 - 80
80 - 100
Cities
Major Roads
Medicine Bow
Saratoga
Laramie
Cheyenne
62
46
36
44
63
26
51
34
34
65
58
22
73
76
41
67
67
25
44
35
55
70
41
28
45
27
46
20
0
20 Miles
Great Divide Resource Management Plan
for the
Rawlins Field Office


Threats from Unauthorized Fences
WYOMING
Great Divide Management Area
Unauthorized Fences
Fences
Surface Ownership
Bureau of Land Management
Forest Service
State of Wyoming
Water
Cities
Major Roads
Medicine Bow
Laramie
Cheyenne
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Great Divide Resource Management Plan
for the
Rawlins Field Office

Greater Sage Grouse and Columbian Sharp-tailed Grouse

Both greater sage grouse and Wyoming's only population of Columbian sharp-tailed grouse are found in the Great Divide.

Greater Sage Grouse: Sage grouse have declined precipitously rangewide and may ultimately be listed under the Endangered Species Act (ESA). It currently is on the Wyoming BLM sensitive species list* (BLM 2002b). Declines have been estimated at over 50% in occupied range, and up to 80% decline in bird abundance, with complete extirpation in 4-5 states and one Canadian province (Braun 1998). In Wyoming, populations have declined significantly since the 1950s: 17-40% statewide—more than 80% in some populations, and complete extirpation in parts of eastern Wyoming (WGFD 2000a). Recently, West Nile virus has infected and killed sage grouse in Wyoming and Montana (WGFD 2003g). This exotic disease poses a new and unknown threat to the species; experts have stated that "the virus may be an important new stressor on sage-grouse populations" and the birds "have little or no innate immunity to the infection" (Naugle and Walker 2004). Because of this new concern, WGFD temporarily suspended sport hunting for the birds in northeast Wyoming (WGFD 2003h).

Sage Grouse Photo © Ben Franklin

Despite the declines and threats described above, Wyoming remains the global stronghold for greater sage grouse and has the largest population in the world (WGFD 2000a, Braun 2003). The Great Divide holds extremely important populations of sage grouse. Several hundred sage grouse leks (strutting grounds for courtship display and breeding) have been observed since the 1970s: Twenty-five percent of the known leks in Wyoming are within the Great Divide (WGFD 2004a). Between 187 and 234 active leks have been documented in recent years on the public BLM lands according to WGFD data. "These numbers are considered minimum estimates, and do not include leks that have not been discovered or visited in recent years..." (WGFD 2004a).

Leks known to WGFD are shown on the map on page 17 with light blue dots, surrounded by blue circles representing 3 mile buffers to protect probable nest sites, as recommended for active leks by sage grouse expert Clait Braun (Braun 2003). Darker blue dots on the map represent the observations in Wyoming Natural Diversity Database (WYNDD 2002).

Threats: The decline of sage grouse can be attributed to many factors, including habitat loss due to agriculture, mining and energy development, reservoirs, roads and buildings; habitat fragmentation due to fences, powerlines, roads and reservoirs; habitat degradation due to overgrazing, changes in fire regime and mechanical and chemical sagebrush control efforts; drought; predation (the importance of which is controlled by the amount and quality of sage grouse habitat); and hunting (Braun 1998). Within the Great Divide, WGFD has attributed the sage grouse decline to energy development under the existing RMP: "sage-grouse populations in the RMP area have demonstrated long-term declines under existing management, particularly in areas with heavy oil and gas development, and these declines would be expected to increase under continuation of existing management" (WGFD 2002c).

Braun (2003) summarizes the serious issue of fragmentation of sage grouse habitat: "Fragmentation of the habitats upon which this [Wyoming Great Divide] population depends will slowly unravel the entire presently linked sage-grouse population in Wyoming. This has already happened in most other states with disastrous results and has already started in Wyoming—most noticeably at the periphery of the historical distribution. Once this continuity becomes fragmented, the overall distribution fabric is lost and sage-grouse populations will become disjointed and subject to greatly reduced abundance as well as local extirpation" (Braun 2003).

To ensure the viability of sage grouse populations, it is important to provide protection and restoration for breeding, nesting, brood-rearing, and winter habitats (Call and Maser 1985, Braun 2003). Each of these habitats have different characteristics, as detailed in Connelly et al. (2000) and Braun (1998) and summarized in Braun (2003). Most nesting typically occurs within three miles of leks in sagebrush uplands with live sagebrush canopy cover of 15-25% (Braun 2003). Taller, bushy sagebrush is preferred for nest sites, frequently in the largest patches of sage habitat (Braun 2003). Thus, to prevent abandonment of leks or disruption of courtship, and the areas used subsequently for nesting, prohibition of surface disturbance within three miles of leks is recommended (Braun 2003).

Autenreith (1985) considered the lek site "the hub from which nesting occurs." Grouse exhibit strong fidelity to individual lek sites from year to year (Dunn and Braun 1986). Similarly, numerous studies also have shown that female sage grouse show strong fidelity to specific nesting areas from year to year (Berry and Eng 1985, Fischer et al. 1993, Lyon 2000), making protection of areas within 3 miles of leks even more important. The U.S. Fish and Wildlife Service (FWS) recommends "that no surface occupancy be allowed within two miles of active leks year-round to protect grouse" (FWS 2003a). Broods make use of areas "close

* Criteria for BLM listing of sensitive species is spelled out in BLM Manual 6840.06(E). Criteria include species which could easily become endangered or extinct in the state; that are under review for listing under the Endangered Species Act; which are undergoing significant downward trend in habitat capability, population, or density; have small and widely dispersed populations; and those which occupy specialized or unique habitats.

to the locations of successful nests and progressively move towards moist areas upon desiccation of vegetation in the uplands." These areas are crucial as well. "Winter use sites are those with large expanses of sagebrush available above the snow, frequently in drainages, large flats along ridge tops, and on west and southwest exposures... Taller and denser sagebrush cover is important during this period" (Braun 2003, citing Hupp and Braun 1989 and Connelly 2000). Winter sites can be adjacent to breeding areas or as much as 37-50 miles away (Berry and Eng 1985, Beck 1977, Connelly 1988). It is important that winter habitats be mapped and protected.

Braun (2003) categorically stated BLM's existing management of sage grouse habitats has been inadequate:

> "[T]he BLM has consistently ignored sage grouse needs and the scientific literature upon which developed guidelines (Braun et al. 1977, Connelly et al. 2000) to maintain sage-grouse populations are based. Most seriously, the BLM has chosen 0.25-mile or 0.50-mile distances from active leks for avoidance of or restrictions on development even though the scientific literature indicates there should be no manipulation of sagebrush habitats within 2 miles of active leks (Connelly et al. 2000). ***The 0.25-mile or 0.50-mile restrictions seem to have been created to justify existing practices and are not based on any reputable science.***"

Emphasis in original.

Sage Grouse Hen with Chicks Photo by BCA

Because there are many large energy development projects taking place and proposed for the future, it is worth noting what recent literature has said about the impacts of these developments on sage grouse. According to Lyon (2000), impacts of oil and gas development on sage grouse include (1) direct habitat loss from new construction, (2) increased human activity and pumping noise causing displacement, (3) increased legal and illegal harvest, (4) direct mortality associated with reserve pits, and (5) lowered water tables resulting in herbaceous vegetation loss. Pump noise from oil and gas development may reduce the effective range of grouse vocalizations (Klott 1987). Thus, lek buffers are needed to ensure that booming sage grouse can be heard by other grouse during the breeding season. Connelly et al. (2000) recommended that "[e]nergy-related facilities should be located >3.2 km from active leks." But Braun (2003) recommended even larger "no surface occupancy" buffers of three miles from lek sites, based on the uncertainty of protecting sage grouse nesting habitat with smaller buffers. WGFD found that two-mile lek buffers were inadequate "for protection of essential nesting and early brood-rearing habitats" and suggested protecting "all habitats suitable for nesting and brood-rearing by sage grouse" delineated by vegetation and topographic characteristics rather than circular buffers of a particular radius (WGFD 2002a). The Department also stated that oil and gas development on BLM lands in the Pinedale area have affected sage grouse hens "despite [existing] protective stipulations;" the agency recommends the BLM establish "maximum noise levels and ambient noise levels which would be allowed in occupied sage grouse habitats during strutting periods" along with maximum noise standards for "production equipment in gas fields, particularly compressors" (Id.).

Columbian Sharp-tailed Grouse: The only known Wyoming population of Columbian sharp-tailed grouse is found in the Great Divide on BLM, state, private, and Forest Service lands (WYNDD 2002, FWS 2000a, Bart 2000). Rangewide, Columbian sharp-tailed grouse have declined to only 10% of their previously occupied area (Bart 2000). In Wyoming, where "there has certainly been a long-term decline in distribution and abundance," the decline has been even more severe: 97% (Bart 2000). The bird is on the Wyoming BLM sensitive species list and is listed as S1, critically imperiled in Wyoming, by WYNDD.

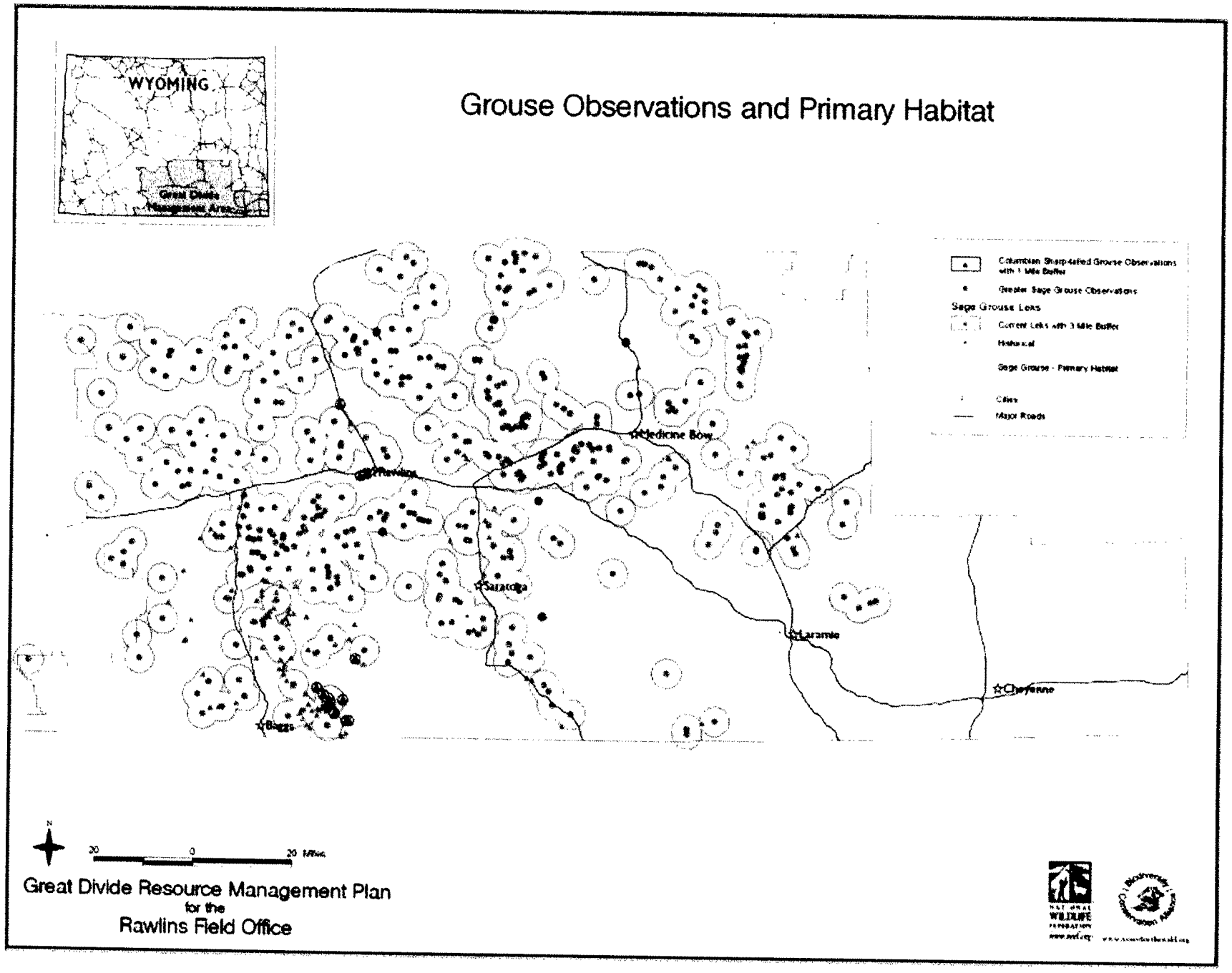
As shown on the map on page 17 with red triangles surrounded by one mile buffers, Columbian sharp-tailed grouse have been identified on at least 46 sites by WYNDD, with observations of multiple birds at most sites. Nineteen of these sites were on BLM lands. Recently 341 birds were observed on 16 leks (traditional courtship display and breeding grounds), including a new lek with 20 birds found in the Sand Hills area (Bart 2000). In total, only 100-500 birds are thought to exist in the state (FWS 2000a). The vast majority of known leks, along with wintering areas, are located in the vicinity of Savery Creek (WYNDD 2002, WGFD 1984). However, the Sand Hills lek appears to be 20-30 miles from the concentration of leks near Savery Creek. WYNDD 2002 shows that from the mid-1980s to mid-1990s, several sharp-tailed grouse adults and juveniles were observed just a few miles southwest of Rawlins, in a possible breeding area, and another possible lek was located about 15 miles north of Rawlins just off Highway 287; little seems to be known about these areas. While WYNDD shows that many leks were found on BLM lands, Bart (2000) indicates that of 24 known leks, only three are on BLM lands. This discrepancy remains unexplained. However, "grazing by domestic cattle and sheep was the major cause" of the decline of Columbian sharp-tailed grouse since 1900 (Bart 2000, p. 8), and may have contributed to lek abandonment on BLM lands.

In Wyoming, Columbian sharp-tailed grouse are primarily found in upland shrub habitats, occurring most often in mountain shrub and sagebrush-snowberry habitat types (Klott and Lindzey 1993). This is in contrast to western Idaho where they prefer big sagebrush habitats (Saab and Marks 1992). Most nesting and brood rearing take place within one mile of an active lek, although nesting up to 1.9 miles from a lek has been observed (FWS 2000a, citing Saab and Marks 1992 and Giesen and Connelly 1993). Movements from breeding grounds to winter habitats vary from three miles to 12.4 miles. Columbian sharp-tailed grouse, like sage grouse, have high lek site fidelity (FWS 2000a citing Giesen and Connelly

1993 and Meints 1991), so protection of existing leks is extremely important. The U.S. Fish and Wildlife Service (FWS 2000a) concluded that the "area within 2.5 km (1.6 mi) of a lek is thought to be critical to the management of Columbian sharp-tailed grouse and this area should contain or provide access to suitable wintering habitats."

Threats: Based on his study in the western Sierra Madre Range of Wyoming, Klott (1987) made the following observations on the potential industrial threats to Columbian sharp-tailed grouse (1) block spraying adjacent to leks led to abandonment of two lek sites therefore vegetation treatments near lek sites should be avoided, (2) areas near leks should be avoided for the purposes of strip mining, (3) pump noise from oil and gas development may reduce the effective range of grouse vocalizations and, for this reason, oil and gas development should be sited well back from lek sites.

Undisturbed habitat is very important to Columbian sharp-tailed grouse. This may prove to be particularly important given the rapidly increasing development of public lands in the Great Divide. Marks and Marks (1987) found Columbian sharp-tailed grouse showed little affinity for edge habitats and stated that, "Columbian sharptails need large expanses of relatively unmodified native grass-shrubland." Saab and Marks (1992) found that later seral stages play a key role: "Maintenance of shrubsteppe communities in advanced seral stages is especially important for conservation of summer habitat in the Intermountain region." During the Columbian sharp-tailed breeding season, March through June, Giesen and Connelly (1993) recommended the prevention of physical, mechanical, and audible disturbances, and vegetation manipulation within the breeding complex (within 1.2 miles of lek).


WYOMING
Great Divide Management Area
Grouse Observations and Primary Habitat
Columbian Sharp-tailed Grouse Observations with 1 Mile Buffer
Greater Sage Grouse Observations
Sage Grouse Leks
Current Leks with 3 Mile Buffer
Historical
Sage Grouse - Primary Habitat
Cities
Major Roads
Medicine Bow
Saratoga
Laramie
Cheyenne
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Great Divide Resource Management Plan
for the
Rawlins Field Office

Recreational Resources

The recreation opportunities found in the Great Divide are truly world-class, ranging from unparalleled big game hunting and fishing to outstanding hiking, camping, and wildlife viewing. According to the BLM (2003b), "[r]ecreation is one of the major resource uses" within the Great Divide. Many of the recreation values, such as the outstanding primitive recreation opportunities found in wilderness quality lands, are described in other sections of this report.

Recreation resources shown on the map on page 20 are fishing spots, developed campgrounds, the Continental Divide National Scenic trail, designated Back Country Byways, historic trails used by pioneers and stage lines, recreation trails, and the Shirley Mountains Special Recreation Management Area. The latter was designated by BLM to protect important cave resources but is now popular for viewing elk (BLM 2003b). Areas possessing wilderness qualities are also shown, as are places where BLM has designated specific off-road vehicle management zones. Of course, it is difficult to depict on a map many of the recreational opportunities found in the Great Divide. The joy that comes from experiencing wide open vistas and the solace found in an undisturbed backcountry camp simply cannot be captured with maps, nor can the awe of seeing strutting sage grouse cocks on a lek at dawn or the satisfaction of landing a lunker trout.

Adobe Town Hikers Photo by BCA

The BLM has designated three Special Recreation Management Areas (SRMAs) in the Great Divide: Continental Divide National Scenic Trail SRMA, North Platte River SRMA, and Shirley Mountain SRMA (BLM 2003b). SRMAs are locations that "are managed for significant or unique recreational resources" (BLM 2003b). The Platte River SRMA receives the heaviest recreational use of the three SRMAs in the Great Divide. "It is a 3,550-acre SRMA that follows the North Platte River from Seminoe Reservoir south to the Colorado-Wyoming border. Recreational activities requiring water receive heavy participation. The largest number of participants [in the three year period from October 1st, 1998 to September 30, 2001], just over 81,000, fished the river. Well over 72,000 participants viewed wildlife. Other important activities within this SRMA include row/float/raft activities and camping. Picnicking and trail-related activities were participated in frequently, as well" (BLM 2003b).

Outside of the North Platte River SRMA is the Miracle Mile, one of the principal fishery destinations in the Great Divide. It is the portion of the North Platte River between the outlet of Seminoe Reservoir and the upper reach of Pathfinder Reservoir. Because of the excellent trout waters created by the flow releases from Seminoe Reservoir, this stretch of river has become a national destination for anglers and is enormously popular among Wyoming residents.

Other recreational values associated with streams and rivers are present in the Great Divide. For example, BLM determined that nine river or stream segments fully met the eligibility criteria for designation under the Wild and Scenic Rivers Act as Wild, Scenic or Recreational rivers. This means each body of water was free flowing and possessed one or more "outstandingly remarkable" scenic, recreational, geologic, fish and wildlife, historic, cultural, or similar resource values (Jonas Consulting 2002). These were portions of Skull Creek, Big Creek, Bunker Draw, Cherry Creek, Duck Creek, Encampment River, Littlefield Creek, Muddy Creek, and the North Platte River (Jonas Consulting 2002). Among these, the BLM found only the Encampment River to also be "suitable" for designation.

However, BLM gave negative suitability findings to Big Creek, Duck Creek, Littlefield Creek, and the North Platte segments, even though these stream segments all possess outstanding recreation, fishery, scenic, or wildlife values, and all of sufficient length (at least one mile) to provide opportunities for recreation. Jonas Consulting (2002) determined that the BLM land through which Big Creek flows "attract[s] visitors from outside the area to fish. Recreationists also enjoy the available hunting and picnicking opportunities. An outfitter located on private lands adjacent to the public land parcels brings in visitors to the public lands from all over the country, while adjacent State lands provide parking and easy access for the rest of the public."

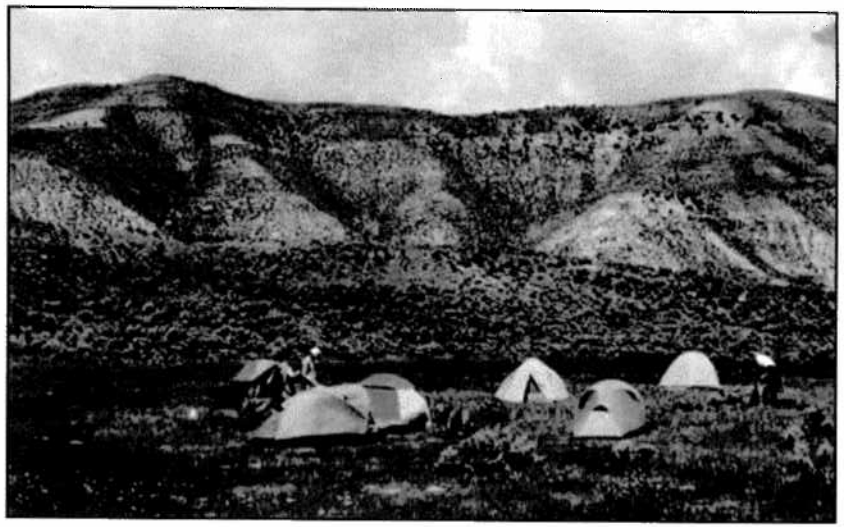
Regarding Duck Creek, Jonas Consulting (2002) found that the 35-foot waterfall "is unique to the area and has a scenic quality that has the potential to attract visitors from outside the area." The same document concludes that the Littlefield Creek segment "includes exceptionally high-quality habitat for the Colorado River cutthroat trout... This is the only population of Colorado River cutthroat trout in the entire watershed and is unique because other populations are in forested headwater streams. The public lands also include one of the few intact dogwood/birch communities in the area." Regarding the North Platte River segment, Jonas (2002) points out exceptional recreation values: "These public land parcels include a beautiful steep canyon unique to the area. The segment of waterway reviewed has been designated by the Wyoming State Game and Fish as a Blue Ribbon trout fishery and attracts anglers from across the nation. The review segment is also boated extensively. The BLM offers two campsites on public lands which provide important boat access for recreationists. A trail system on public lands also offers hiking opportunities. The public lands provide important winter and nesting habitat for bald eagles."

Economic Contribution of Recreation: The economic contribution from big game hunting, fishing, and wildlife watching by the public in the Great Divide is estimated by WGFD to be greater than $115,500,000 annually and accounts for more than 2,400 jobs (WGFD 2004a). Big game hunting brings in over $18 million, fisheries over $40 million, and wildlife watching over $55 million,

all within the Great Divide. These are conservative figures because they do not include the contributions from small game and upland hunters, photographers, or secondary expenditures from any activity. Furthermore, WGFD explains that due to estimation techniques, the wildlife watching figure is "likely a minimum rather than a maximum" (WGFD 2004b). Statewide, 498,000 residents and nonresidents enjoyed wildlife watching in 2001, including 388,000 who engaged in birding (FWS 2003b, 2003c).

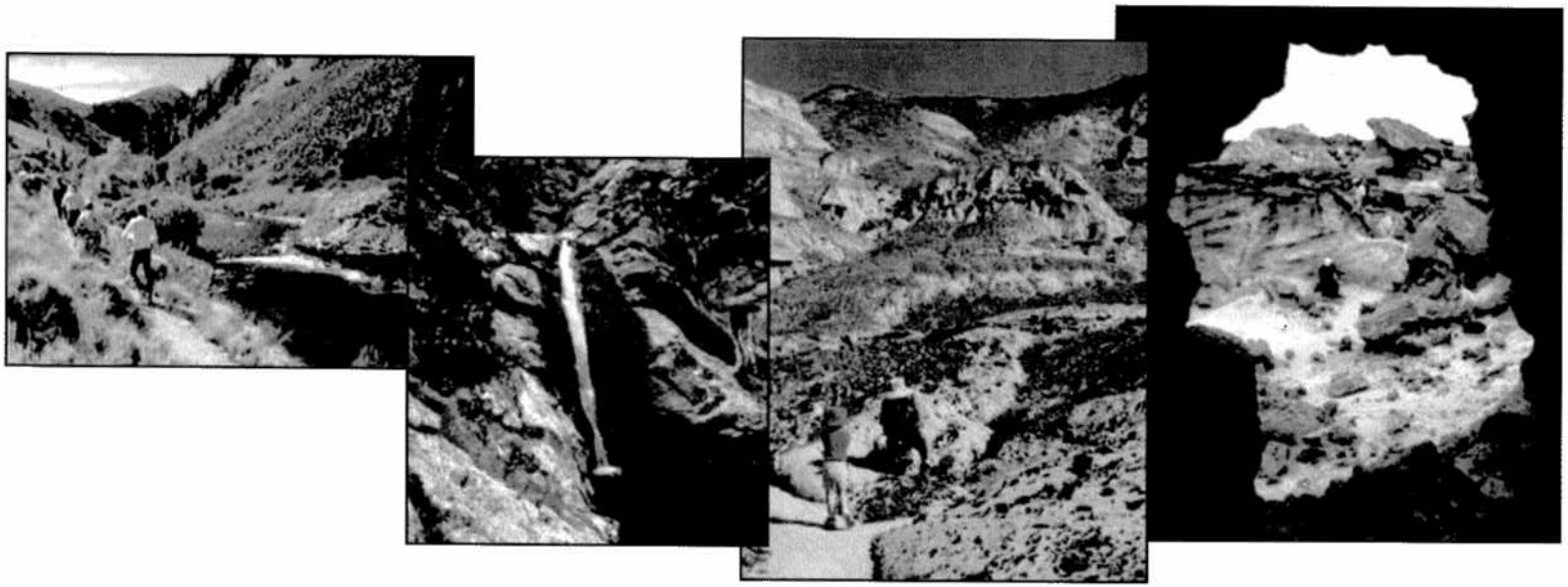
The outdoor recreation opportunities offered by the public lands in the Great Divide are likely to increase and contribute even greater amounts to a sustainable and renewable economic base, according to surveys conducted by travel associations and the Wyoming Travel and Tourism office. Statewide, there is a marked increase in adventure tourism—including hiking, backpacking, horseback riding, biking, and rock climbing. "More and more travelers... are unbuckling their seat belts and getting into the Cowboy State's great outdoors" (Billings Gazette 2003a).

Already, adventure tourism accounts for about $450,000,000 spent in the state. "Of all visitors that come to Wyoming, it's anywhere between 76 to 81 percent of visitors to Wyoming that are going into wilderness and mountain areas" (Shober 2003). As the Great Divide's outdoor opportunities become better known, for example as the public learns more about the Adobe Town proposed wilderness, the crown jewel of Wyoming's high desert wilderness, and the wild Ferris Mountains, so too will the economic contribution from adventure tourism.



Campers at Wild Cow Creek

Photo by BCA

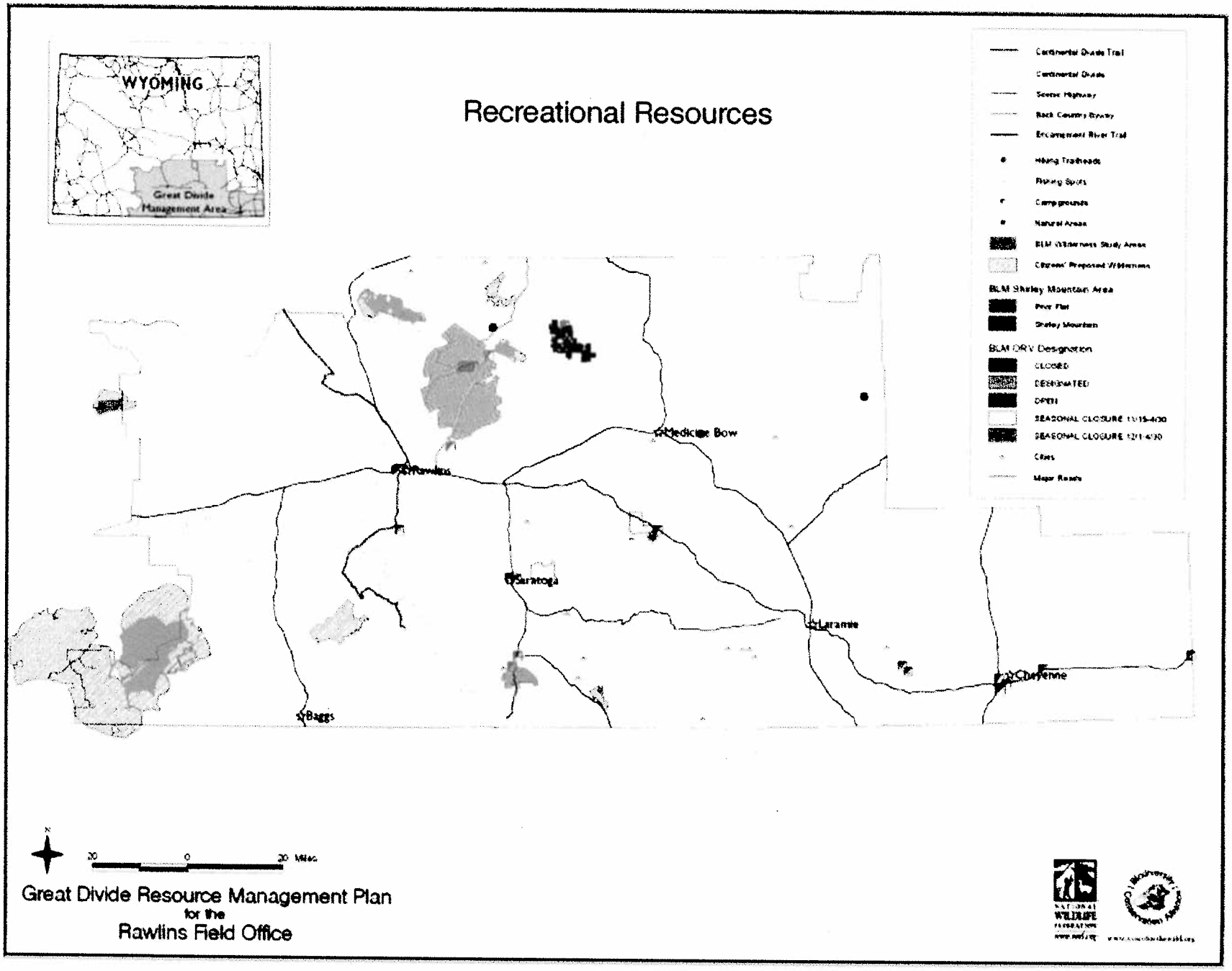


Hiking the Encampment River Trail (top) and Duck Creek Falls

Photos by BLM (top) and Dennis Horning

Young Rockhound at Prehistoric Rim (top) and Hikers Through the Arch in Adobe Town

Photos by BCA


WYOMING
Great Divide Management Area
Recreational Resources
Continental Divide Trail
Continental Divide
Scenic Highway
Back Country Byway
Encampment River Trail
Hiking Trailheads
Fishing Spots
Campgrounds
Natural Areas
BLM Wilderness Study Areas
Citizens' Proposed Wilderness
BLM Shirley Mountain Area
Pine Flat
Shirley Mountain
BLM ORV Designation
CLOSED
DESIGNATED
OPEN
SEASONAL CLOSURE 11/15-4/30
SEASONAL CLOSURE 12/1-4/30
Cities
Major Roads
Medicine Bow
Rawlins
Saratoga
Laramie
Cheyenne
Baggs
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Great Divide Resource Management Plan
for the
Rawlins Field Office

Wilderness and Undeveloped Areas

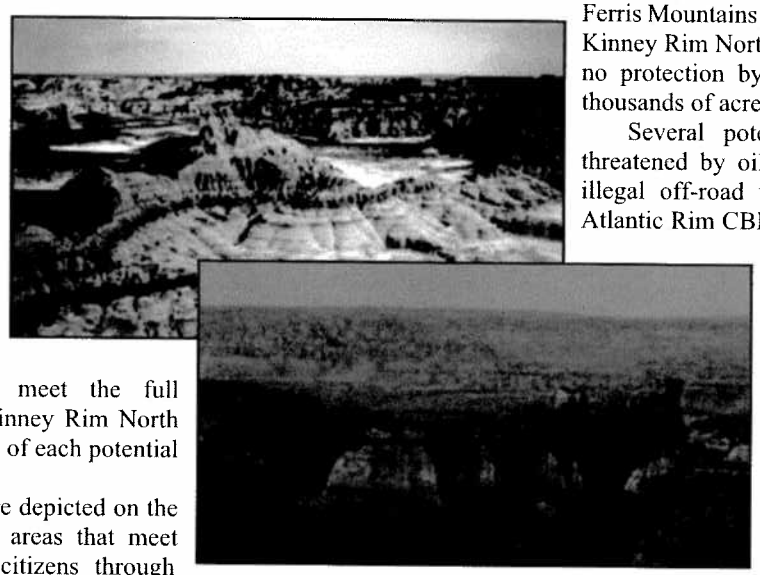
Within the Great Divide are ten outstanding wild areas meeting the criteria for Wilderness set by Congress and the Interior Department. These remarkable places range from the Red Desert badlands and hoodoos of Adobe Town—the largest potential Wilderness on BLM lands in Wyoming—to the mountain forest ecosystem of the Ferris Mountains and the tall granite domes of the Pedro Mountains. All ten of these areas possess outstanding opportunities for solitude, primitive and unconfined recreation, a high degree of naturalness (for example, a lack of constructed and maintained roads), supplemental values such as abundant wildlife, wild horse herds, unique geology, and archaeological and paleontological features, and are of sufficient size or shape that they are manageable as Wilderness by BLM.

Portions of six areas have been given interim protection as Wilderness Study Areas (WSAs) until Congress decides to designate them as Wilderness: Adobe Town, Bennett Mountains, Encampment River Canyon, Ferris Mountains, Prospect Mountain, and Red Lake Dunes (Bureau of Land Management 1991).

However, BLM's inventory ignored key portions of Adobe Town, Encampment River Canyon, Prospect Mountain, Bennett Mountains, Red Lake Dunes, and Ferris Mountains and completely omitted or failed to provide WSA protection for other exceptional areas which meet the full requirements for Wilderness: Wild Cow Creek, Kinney Rim North and South, and Pedro Mountains. Short descriptions of each potential Wilderness are provided below.

The WSAs designated by BLM in the 1990s are depicted on the map on page 25 in solid pink color. Additional areas that meet wilderness criteria which have been found by citizens through detailed, on the ground inventories, are shown in red crosshatch. Acreage figures for each are provided in the table on page 23. Acreage figures in the table are for those portions within the Great Divide (portions of the Adobe Town, Kinney Rim, and Red Lake Dunes areas extend beyond the Great Divide planning area boundary).

In total, just under 300,000 acres of the Great Divide planning area have been found by BLM or citizens to still retain wilderness qualities. Thus, despite the fact that the Rawlins Field Office boundary encompasses an enormous expanse of public land—3.5 million acres of BLM surface ownership—the truth is that only about 8 % still remains in a natural enough state to meet the criteria for Wilderness under the Wilderness Act. Boundaries for the citizens' proposed Wilderness Areas are based on the five recent intensive inventories totaling 1560 pages of documentation and many hundreds of photographs (Biodiversity Associates 2001; Biodiversity Conservation Alliance 2002a-d), and the earlier, less intensive but generally sound statewide citizens' proposal *Wilderness At Risk* (Wyoming Wilderness Coalition 1994).



Adobe Town Rim (top) and Skull Creek Rim, Adobe Town
Photos by BCA (top) and © Ken Driese

Threats: BLM's recommendation to Congress was to designate as Wilderness only 13 percent (10,920 acres) of the Adobe Town WSA, along with all of the Ferris Mountain, Encampment River Canyon, and Prospect Mountain WSAs, and none of the Bennett Mountain WSA. The total recommended acreage comes to a meager 38,857 acres, or 13.3 percent of the wilderness quality lands and only one percent of the overall public lands within the Great Divide.

Until Congress makes a decision regarding designation of WSAs as Wilderness, the WSAs have interim protection subject to oil and gas leases that existed prior to WSA designation. Wilderness quality lands outside of WSAs, including citizens' proposed expansions of Adobe Town, Red Lake Dunes and Ferris Mountains plus newly recognized Wild Cow Creek, Kinney Rim North and Kinney Rim South units are given no protection by BLM. These units total hundreds of thousands of acres of unprotected wildlands.

Several potential wilderness areas are currently threatened by oil, natural gas, and CBM development, illegal off-road vehicle use, and other activities. The Atlantic Rim CBM project, with 3,880 wells, is proposed for a large area encompassing the Wild Cow Creek citizens' proposed wilderness (Bureau of Land Management 2001); Kinney Rim North and South units are being impacted by the Vermillion Basin Natural Gas project; and the Desolation Flats gas project is likely to impact substantial portions of the Adobe Town unit (see, e.g., BLM 2003c). All of these lands are currently open to leasing with no stipulations to protect their wilderness qualities.

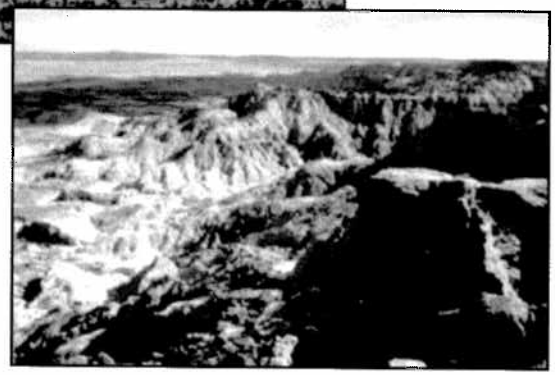
Descriptions of Wilderness Quality Lands

Adobe Town: The Adobe Town area has long attracted attention for its mesmerizing landscapes of badlands and high rims. In 1869, Clarence King led a Geological Exploration of the Fortieth Parallel. In his report, King describes the Adobe Town area as follows: "This escarpment is the most remarkable example of the so-called bad-land erosion within the limits of the Fortieth Parallel Exploration... Along the walls of these ravines the same picturesque architectural forms occur, so that a view of the whole front of the escarpment, with its salient and reentrant angles, reminds one of the ruins of a fortified city. Enormous masses project from the main wall, the stratification-lines of creamy, gray, and green sands and marls are traced across their nearly vertical fronts like courses of immense masonry, and every face is scored by innumerable narrow, sharp cuts,

which are worn into the soft material from top to bottom of the cliff, offering narrow galleries which give access for a considerable distance into this labyrinth of natural fortresses" (King 1878).

"The Adobe Town WSA is 85,710 acres—the largest in Wyoming. Within the WSA you'll find places named Skull Creek Rim and Monument Valley--conjuring up images of colorful badlands, buttes, and grotesque spires created by thousands of years of erosion. In addition, there are numerous surface fossils of extinct mammals and reptiles and a high density of prehistoric human occupation sites. Located 80 miles southwest of Rawlins, Wyoming, outstanding opportunities for solitude exist in the WSA, as long as you don't mind wild horses and wildlife as company" (www.wy.blm.gov/rfo/wsa.htm accessed March 3, 2004).

Adobe Town Proposed Expansions. The conservation community and wilderness enthusiasts have called on BLM to expand WSA designation to the areas described below, which were found through intensive field inventories to possess wilderness qualities. The BLM's Management Situation Analysis for the Rawlins Field Office stated, "Since consideration of the Adobe Town WSA in the 1988 Wilderness Environmental Impact Statement (EIS), additional information has been submitted to BLM concerning adjacent lands that also potentially contain wilderness characteristics. Pursuant to regulations, BLM ground checked this information and has determined that portions of the proposal do indeed contain wilderness characteristics" (BLM 2003b). Recently, BLM has agreed that about 40,000 acres possess wilderness qualities. The agency has committed to "evaluate those areas through the RMP revision process" (BLM 2002e).



Wild Cow Creek (top) and East Fork Point - Adobe Town
Photos by BCA

The Haystacks are a broad arc of deeply dissected badlands that extend northeast from the Adobe Town Rim. According to local tradition, it was here that Butch Cassidy and his gang hid their fresh horses, which helped them elude their pursuers following the Tipton train robbery. Today, visitors to the Haystacks can enjoy the same wild, remote, and pristine character that Cassidy found here in the 1800s. This lofty chain of ridges and badlands is home to a juniper woodland whose isolated nature within the surrounding sea of sagebrush lends it great ecological importance. This area is under "checkerboard" ownership.

Willow Creek Rim is a sloping table land between the WSA and the Willow Creek Rim, an area of 20,000 acres including the badlands of Willow Creek itself, which lie immediately to the east of the Rim. The Willow Creek Rim is a tall, vertical scarp that bisects the area from north to south, affording spectacular views of the surrounding country. At its foot lies a maze of badlands that invite exploration on foot or horseback. The spectacular scenery alone is sufficient to lend the area outstanding opportunities for primitive recreation.

Powder Rim is a broad swell of high country that rises at the south end of the Washakie Basin. It is robed in a mix of juniper woodland and sagebrush meadows, and provides nesting habitat for sage grouse. The northern side of the rim slopes down into the Skull Creek basin, where it is dissected into clay badlands. This area provides perhaps the finest opportunities for primitive recreation in a juniper woodland setting available in Wyoming.

East Fork Point includes rim tops and stabilized sand dunes near Skull Creek Rim. If protected as wilderness, East Fork Point would provide a rim top backcountry not currently available within the Adobe Town unit because existing roads already traverse all the other rim summits.

Encampment River Canyon: From their lofty perches, bighorn sheep warily eye the hikers on the Encampment River Trail below. The trail, which traverses the WSA and goes into Colorado to the south, follows the scenic Encampment River. Located just two miles south of Encampment, Wyoming, and easily accessible from the BLM's Encampment River Campground, this 4,547-acre WSA contains grasslands, riparian areas, and forested slopes. All 4,547 acres of this WSA were recommended for wilderness status in the BLM's 1992 report to Congress. However, BLM omitted about 2,800 acres of qualifying land from the WSA which citizens have nominated for wilderness (Wyoming Wilderness Coalition 1994). The unit forms the northern continuation of the existing Encampment River Wilderness managed by the Medicine Bow National Forest.

Ferris Mountains: Deep canyons, pine forests, and steep slopes predominate in the 22,245-acre Ferris Mountain WSA located 45 miles north of Rawlins. Known locally for the tooth-shaped crags or fins of white limestone on its southern face, the mountains offer unusual and spectacular scenery, and a true backcountry wilderness experience. Elk, bighorn sheep and mule deer call the WSA home, and golden eagles and prairie falcons nest on its cliffs. "At 10,037 feet, Ferris Peak is the highest point in the Great Divide Basin and rises some 3,000 feet from the valley floor" (BLM 2003b). The entire WSA was recommended for wilderness designation in the BLM's 1992 report to Congress. However, the BLM omitted 6,738 acres which also possesses wilderness qualities, primarily abutting the southwest corner of the WSA (Biodiversity Conservation Alliance 2002b). This portion encompasses Black Canyon and the hogbacks to the west, and includes several permanent streams.

Wild Cow Creek: Wild Cow Creek is dominated by two deep canyons incised into the sloping sagebrush steppes, Deep Gulch and the canyon of Wild Cow Creek. A sparse mantle of vegetation covers the canyon walls, through which reddish sedimentary strata protrude in the steeper areas. In the upper reaches of each watershed the canyons branch out onto a maze of draws, basins, and ridges. Here, islands of aspen and serviceberry dot the sagebrush steppe, particularly on north-facing slopes. Wildflower displays in May and June are so outstanding that a neighboring drainage was named "Garden Gulch." This 33,403 acre area is the best remaining example of the ecological transitional zone between the Red Desert ecosystem and the forest ecosystem of the Sierra Madre Range (Biodiversity Conservation Alliance 2002a). BLM has thus far not provided WSA protection for this area.

Wildlife abound in the proposed wilderness. Here, one can find an astonishing diversity of mammals, birds, and fishes once common throughout Wyoming's sagebrush deserts but now largely absent from most landscapes. The area offers calving/fawning grounds for elk, mule deer, and pronghorn antelope, and most of the area is considered crucial winter range by the WGFD. The high ridges and draws form important migration corridors for game animals and sage grouse are abundant on the uplands above the rims. Several active prairie dog colonies are found along the floodplains of both Deep Gulch and Wild Cow Creek. Permanent streams and springs provide habitat for native fish species that are growing increasingly scarce statewide. Raptors, including northern harriers, golden eagles, merlins, and ferruginous hawks, find ideal nesting opportunities along the canyon walls and atop the high rims. The eastern half of the unit falls within the Grizzly Habitat Management Unit, managed by WGFD for big game and sage grouse (Biodiversity Conservation Alliance 2002a).

Pedro Mountains: The Pedro Mountains are an impressive and rugged chain of tall granite peaks that rise to the east of Pathfinder Reservoir. This area is remote and difficult to access, lending to its wilderness appeal. Granite domes and slickrock rise sharply over 1000 feet above the surrounding plains. Pockets of pine and aspen grow hidden in moist draws, while cactus and sagebrush spring up in sandy crevices. From Iron Springs to The Chimneys to Pyramid Peak, the Pedro Mountains harbor astounding scenery and a mystical feel of primeval land. They are an island of biodiversity and rocky, mountainous terrain amidst the surrounding sagebrush deserts. Although the area has not been thoroughly inventoried for archaeological sites, there is evidence of human habitation as long as 10,000 years ago along the former North Platte River, on the area's western boundary. In about 1934, a group of WPA (Works Progress Administration) workers found a tiny mummified adult human near the area.

These mountains are unusual in that they provide winter roosting areas for approximately 20 bald eagles. The Pedro Mountains also provide crucial winter and year-long habitat for about 800 elk and nesting habitat for peregrine falcons. The Pedros border a BLM National Back Country Byway and Watchable Wildlife Route, and overlook the Pathfinder National Wildlife Refuge. BLM did not provide WSA protection for any of this area.

Prospect Mountain: Those wanting to get away from it all can find ample solitude in this WSA. Located about 15 miles southeast of Encampment, Wyoming, the WSA adjoins the U.S. Forest Service's Platte River Wilderness. The topography is mountainous with areas of sagebrush/grassland interspersed with timber. All of this WSA was recommended for wilderness designation by BLM in 1992, but the agency omitted from WSA status 4,531 acres which citizens have found to also have wilderness qualities (Wyoming Wilderness Coalition 1994). Prospect Mountain encompasses an important ecological addition to the Platte River Wilderness Area. This unit's steep canyon/mountain terrain, dense stands of lodgepole pine, and pockets of aspen contrast sharply with the adjacent high desert. A herd of bighorn sheep and about 200 elk are dependent on Prospect Mountain for their survival. The area offers high quality mule deer and elk hunting along with exceptional scenic vistas. Adjacent nationally-renowned portions of the North Platte River are popular with anglers and river runners. Rock walls and grottoes within the area may provide habitat for Townsend's big-eared bat, a Forest Service sensitive species that is also on the WGFD Watch List. Bald eagles and peregrine falcons nest here, and the area is known for its concentration of raptors.

Potential Wilderness Within the Great Divide

Name	Acres With Wilderness Qualities in Great Divide (see note 1)	Acres Given WSA Status by BLM in Great Divide	BLM Recommendation in Great Divide Only (see note 1)
Adobe Town	96,019	34,134	less than 10, 920 (see note 2)
Bennett Mountains	10,219	6,003	0
Encampment River	7,355	4,547	4,547
Ferris Mountains	28,983	22,245	22,245
Kinney Rim North	4,599	0	0
Kinney Rim South	89,723	0	0
Pedro Mountains	12,345	0	0
Red Lake Dunes	4,000	0	0
Prospect Mountain	5,676	1,145	1,145
Wild Cow Creek	33,403	0	0
TOTAL	**292,323**	**68,074**	**less than 38,857**

Note 1: Adobe Town, Red Lake Dunes, and Kinney Rim N. & S. areas extend outside the Field Office Boundary. Acreages shown are for Great Divide/Rawlins only.

Note 2: Portion of acreage recommended for Adobe Town in each Field Office not published by BLM.

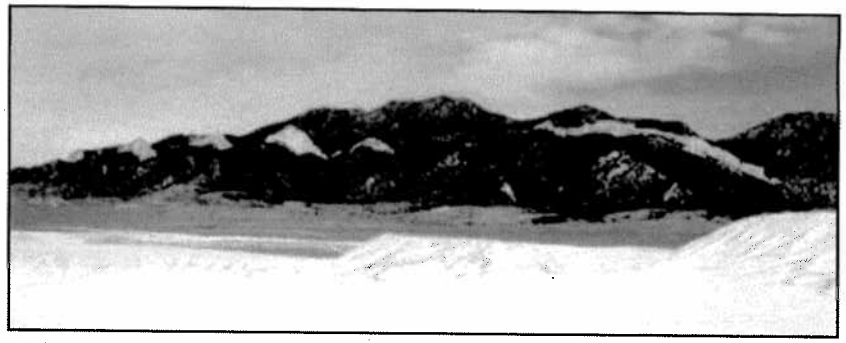
Bennett Mountains: The 6,003-acre Bennett Mountains WSA is located near Seminoe Reservoir, about 32 miles northeast of Rawlins. Consisting of steep rock ledges and walls and several drainages, the WSA provides opportunities for primitive recreation. This WSA was not recommended for Wilderness status by the BLM in 1992. Beyond the WSA, an additional 4,216 acres of wilderness quality lands were denied WSA status by the BLM. Occurring at the eastern edge of the Seminoe Mountains, east of Miracle Mile, this area is as primitive as the western side where the Bennett Mountain WSA is located.

Lifting abruptly from the prairie, Bennett Mountains exhibit sheer layered cliffs of limestone, red beds and other sedimentary layers which face south overlooking Seminoe Reservoir. Steep canyons and gulches cut the more gradually sloping north flank of this section of the Seminoe Mountains. Plant cover includes cushion plants, gnarled juniper, sagebrush, thick grassy meadows, chokecherry, willow, and aspen. Views from the top feature the Pedro Mountains, Ferris, Sand Dunes, Seminoe Reservoir, and mountain ranges of Wyoming and Colorado in the distance to the south. The Bennetts are also in clear view of BLM's National Back Country Byway. Shelter rings and flint chips show that Native Americans came to these mountains. A pit house and other sites along the old river course west of the area indicate occupation dating back 10,000 years. The proposed expansion of the WSA includes the entire ridge east of Kortes Dam.

Kinney Rim North and South Units: These two expansive roadless units take in the large escarpment known as Kinney Rim. County Road 19 divides the north and south units. Both units straddle the boundary between the Rock Springs and Rawlins BLM Field Offices, with 89,723 acres of the South and only 4,599 acres of the North Unit in the Great Divide. Because most of the North Unit is not in the study area, this description is confined to the South Unit, which totals 125,562 acres across both Field Offices.

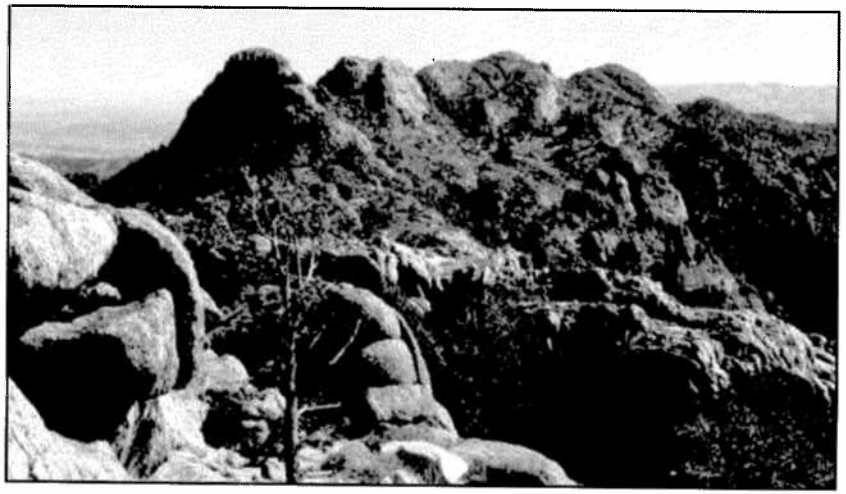
The South Kinney Rim Unit borders the western edge of Adobe Town and offers vast wide-open spaces with plentiful opportunities for solitude and primitive recreation. Small badlands, weathered outcrops, white-tailed prairie dog towns, crucial antelope range, undulating sagebrush desert, and deeply dissected topography on the southern end all add up to make Kinney Rim a wonderful potential addition to the Wilderness System. The BLM has not provided WSA protection for the area, and has denied the presence of the wilderness qualities.

Red Lake Dunes: Approximately 4,000 acres of the 20,098 acres citizen proposed Red Lake Dunes wilderness area is in the Great Divide, with the remainder of the area managed by the BLM's Rock Springs Field Office. The portion of Red Lake Dunes in the Great Divide is part of the fragile Killpecker sand dunes ecosystem, the largest active sand dune complex in North America. Present are extensive active and stable dunes, unique dune-dependent plant communities, raptors, and outstanding scenic and recreational opportunities. White-tailed prairie dogs and other sensitive wildlife are believed to occur in the area as well. BLM has provided interim protection for 9,515 acres as a WSA, but none of the WSA is in the Great Divide. In June 2004, the BLM authorized mineral exploration in the Great Divide portion of Red Lake Dunes, allowing 62,000 pound "thumper trucks" to drive cross-country through the area.

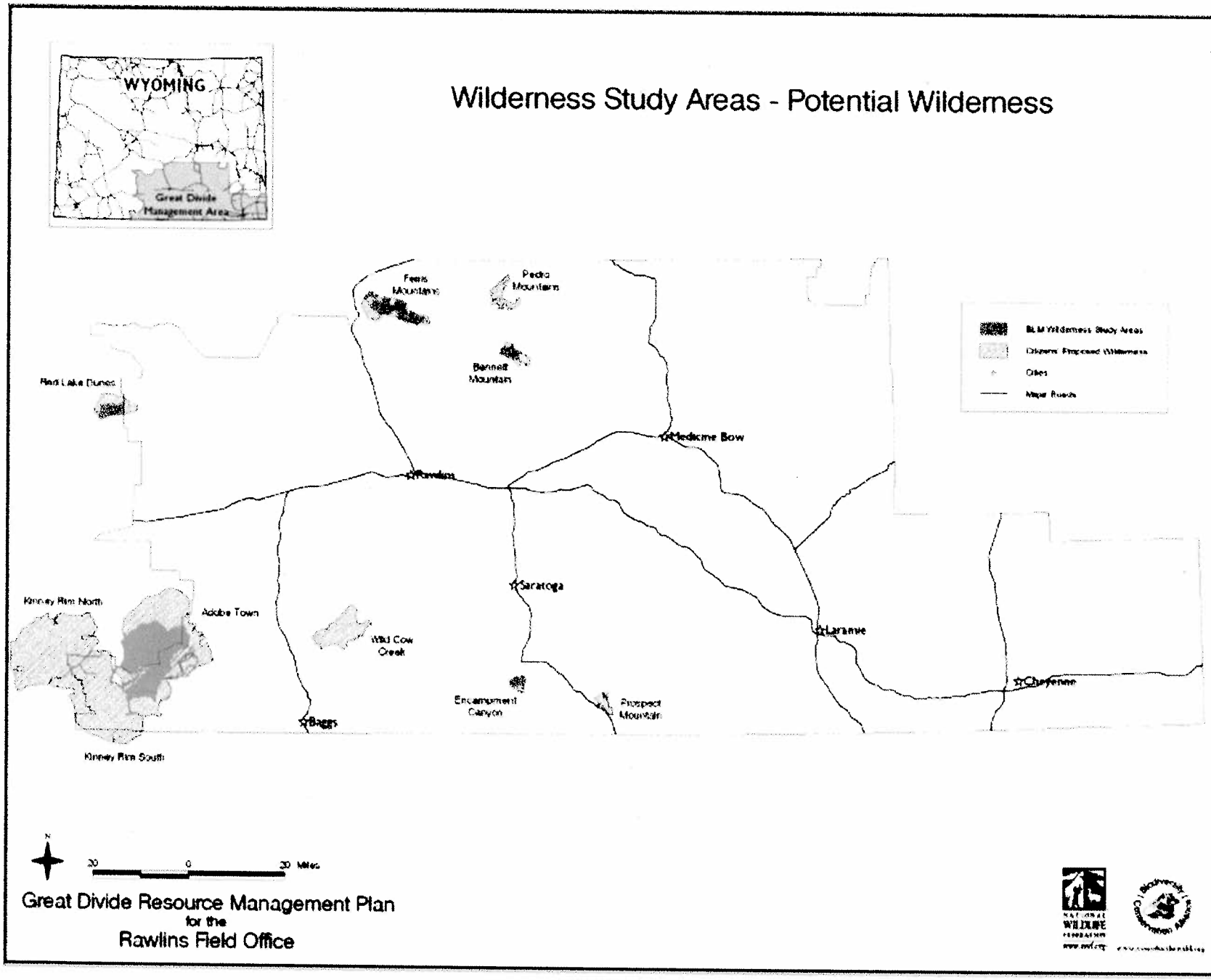


Ferris Mountains and Dunes — Photo by BCA

South Kinney Rim — Photo by BCA



Pedro Mountains — Photo by Erik Molvar


WYOMING
Great Divide Management Area
Wilderness Study Areas - Potential Wilderness
Pedro Mountains
Bennett Mountain
Red Lake Dunes
Medicine Bow
Rawlins
Saratoga
Laramie
Cheyenne
Kinney Rim North
Adobe Town
Kinney Rim South
Wild Cow Creek
Encampment Canyon
Prospect Mountain
Baggs
20 0 20 Miles
Great Divide Resource Management Plan
for the
Rawlins Field Office

Raptors

At least 15 species of raptors, or birds of prey, inhabit the Great Divide. These range from the diminutive burrowing owl to the ferruginous hawk, North America's largest hawk. Both of these species are declining across their range but still occur in significant numbers in the study area. Other raptors present in significant numbers include golden eagle, prairie falcon, merlin, Swainson's hawk, red-tailed hawk, great-horned owl, Cooper's hawk, American kestrel and bald eagle.

The ferruginous hawk and burrowing owl are on the Wyoming BLM sensitive species list, and the ferruginous hawk is considered Native Species Status 3 (hereafter NSS3, etc.) by WGFD. NSS1 species are those which are rare, for which "extirpation appears possible," and have habitat which is declining or vulnerable; NSS2 species are those which are rare, for which "extirpation appears possible," but with stable habitat. NSS3 means that populations are declining or restricted in numbers and/or distribution; habitat is restricted or vulnerable; and may be sensitive to human disturbance (Cerovski 2002, WGFD 2003c). Burrowing owls have "declining populations and/or habitat conditions... throughout all of part of their range" (BLM 2000).

The Great Divide area is home to "more nesting pairs of the ferruginous hawk than anywhere else in Wyoming," and the western portion of Carbon County within the Rawlins Field Office "boasts one of the highest nesting densities of ferruginous hawks within Wyoming, and possibly throughout its historic range" (http://www.wy.blm.gov/rfo/wildlife/hawks.htm accessed March 3, 2005). In the original RMP for this area, BLM identified 117,560 acres of "raptor concentration areas" in 14 distinct units (BLM 1988). The Final Plan and Record of Decision provided special protection for only two: Shamrock Hills and portions of Atlantic Rim along Jep Canyon.

Ferruginous Hawk Nestlings Photo by Larry Apple courtesy BLM

Current and historical records of raptor observations and raptor nests were obtained from WYNDD and from BLM Rawlins Field Office (WYNDD 2002, Apple 2003). The map on page 28 shows all raptor nests known to WYNDD (on public land) and all nests digitized by BLM for all raptor species inhabiting the study area. About 600 nest sites have yet to be digitized by BLM and therefore are not shown. Also not shown are the "raptor concentration areas" from BLM 1988 or 2003b since the actual nest sites are shown (excluding decrepit, "historical" nests which cannot be used without complete rebuilding by adult birds).

The Rawlins Field Office has been collecting data on raptor nests and ferruginous hawks for a number of years, concentrating on artificial nest structures and areas experiencing high levels of mineral development. However, there has been no systematic survey of raptors across the entire study area (Apple 2003). BLM has records for nearly 4,000 raptor nests within the Field Office boundary, but the total number of raptor nests does not accurately reflect the density of nesting birds. Consider that in 2002, BLM monitored 979 ferruginous hawk nests, of which only sixty-eight nests were documented to have successfully fledged young (Apple 2003). Thus, successful fledging occurred on about seven percent of the nests monitored. Ferruginous hawks (and perhaps other raptors) maintain alternate nest sites within the same territory (Richardson 1996), but may use the same nests from year to year (Richardson 1996 citing Newton 1979, Smith and Murphy 1978). Other nests are not used from year to year, or only sporadically.

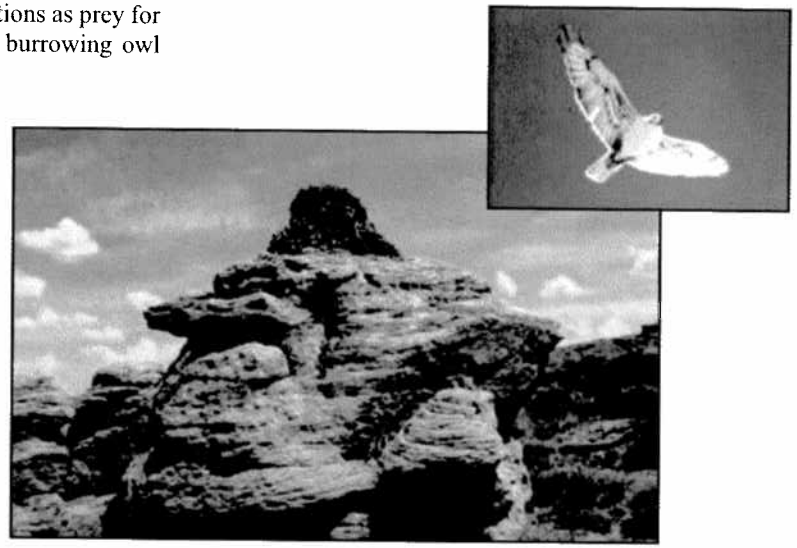
Threats: The nests are shown with a one-mile buffer needed to protect them from certain development activities and other harmful management practices. Destruction of nesting and foraging habitat, accidental poisoning, direct mortality from automobile collisions, and disturbance from drilling and associated activities are just of few of the many potential negative impacts. "Oil and gas development has an impact on raptors through direct human disturbance and the elimination and fragmentation of habitats... Taken individually, well sites occupy a relatively small area... Collectively, however, habitat loss can be substantial if many wells and connecting roads are cleared, as in the case of full-field development... [O]il and gas development results in secondary impacts such as increased traffic and human encounters with raptors" (Postovit and Postovit 1987). "New roads, on the other hand [in contrast to railroads], provide access to otherwise relatively inaccessible land where even limited access by humans can affect the ferruginous hawk" (Olendorff 1993). According to Wyoming experts, ferruginous hawks are "very susceptible to human disturbance during nesting," and should receive a one-mile buffer during nesting season of April 1 through July 31 (Cerovski et al. 2001). It is impractical to relocate roads, oil/gas facilities, and other permanent disturbances from season to season or month to month, which calls into question the effectiveness of seasonal nest buffers for ferruginous hawks and other raptors.

A disturbing trend in the Rawlins Field Office is the apparent shift to artificial nesting structures for ferruginous hawks. Ninety-two artificial nesting structures have been built, "as mitigation for proposed and actual development projects" (http://www.wy.blm.gov/rfo/wildlife/hawks.htm accessed March 3, 2005). In some areas such as the Shamrock Hills, "nesting has shifted almost exclusively from natural nesting sites to the artificial nesting structures" (Apple 2003). At first glance, the success of artificial nesting structures may be seen as a positive step to the extent that the artificial structures prevent the loss of birds or nests (which may have originally been built on top of oil/gas facilities, powerlines, etc.). However, it also is important to ask if a reliance on man-made nesting structures

is an appropriate substitute for long-term protection of natural habitat, prey base, and natural processes such as predator-prey relationships.

Prey populations also are important for maintenance of raptor populations. "The strong tie between raptor populations and their prey makes it difficult to manage raptors effectively without also managing their prey (Garton et al. 1989). Land management and reclamation activities influence prey populations. Raptor populations can be as effectively excluded by absence of prey as by absence of nesting substrates" (Parrish et al. 1994). Paige and Ritter (1999) recommend that managers, "Maintain ground squirrel and prairie dog colonies to provide nesting burrows for burrowing owls, and maintain small mammal populations as prey for many bird and mammal predators." The western subspecies of burrowing owl which inhabits Wyoming "need the protection of the natural habitat and the burrowing mammal population" (Mealey 1997, citing Green 1983).

Therefore, these small mammal species populations must also be maintained. Losses from recreational shooting, intentional poisoning, accidental poisoning from spills, insecticides and pesticides, major habitat modifications and other impacts must be taken into account. Ferruginous hawks within the study area appear to prey substantially on Wyoming ground squirrels (Apple 2002). However studies near Medicine Bow showed that jackrabbits and white-tailed prairie dogs are used more, based on biomass consumed, than ground squirrels (MacLaren et al. 1988). Secondary prey species become critical to maintaining hawk population numbers when primary prey species decline, during droughts, and other random events (Olendorff 1993). For example, Smith and Murphy (1978) found that ferruginous hawk diets shifted increasingly to rodents as jackrabbits became scarce. Thus, it is important to maintain both primary and secondary prey bases to guarantee ferruginous hawk viability over the long term.

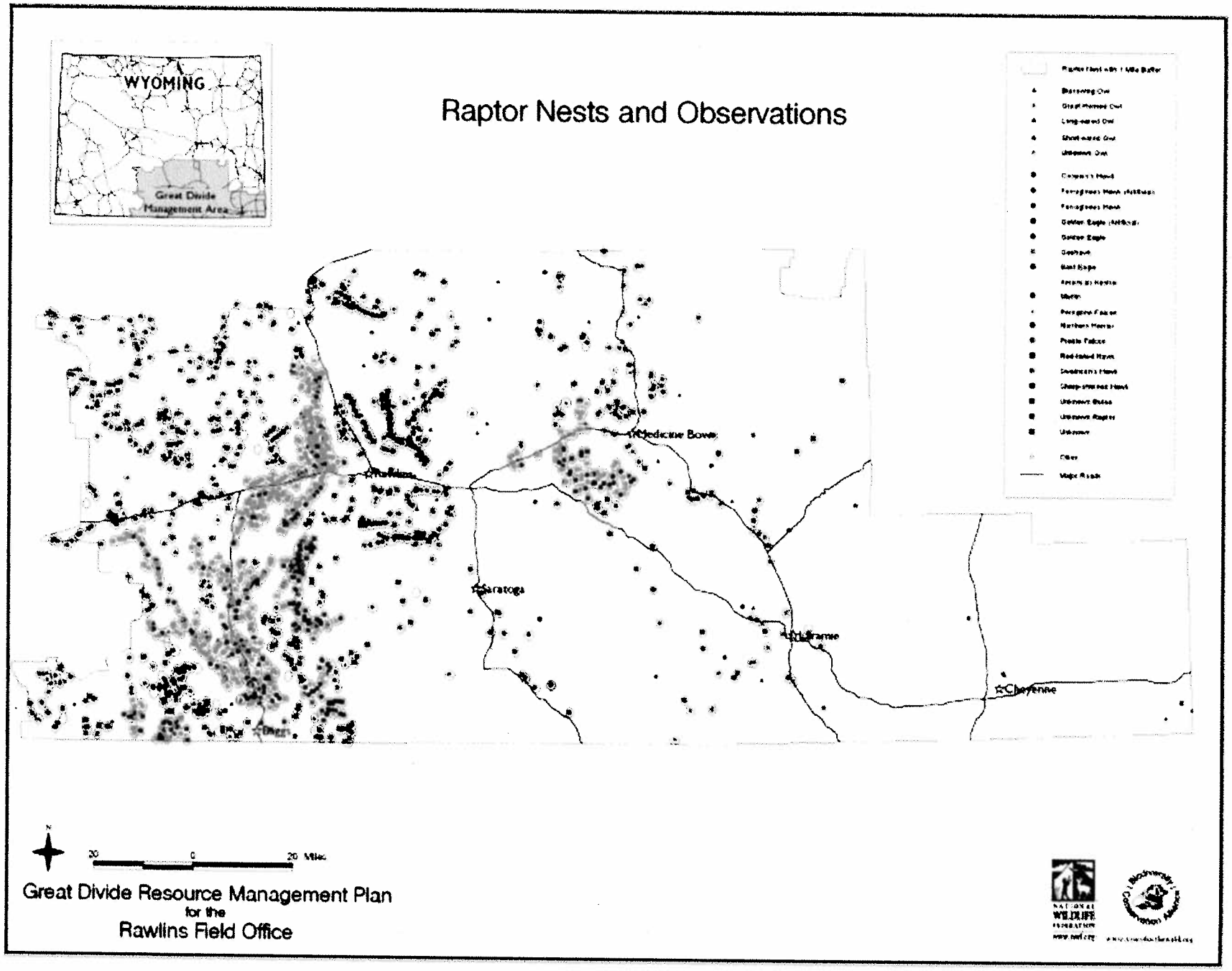


Ferruginous Hawk and Nest

Photos courtesy BLM

Protective measures for other raptors such as burrowing owls are also found in the literature. "Burrowing owls will benefit from management that maintains zones free of herbicides and pesticides within a 600-m (655-yd) radius of burrows and that provides uncultivated plots of dense grasses and forbs within owl home ranges to support rodent and insect prey (Rich, 1986; Haug and Oliphant, 1990)" (Paige et al. 1999). Burrowing owls also can be preyed upon by larger raptors such as ferruginous hawks and therefore artificial perches (powerline poles, ancillary facilities...) are a threat within one mile of burrowing owl nests.

The Great Divide currently maintains a world-class raptor resource that is one of North America's last strongholds for nesting raptors where natural population densities can still be found. These populations and their habitat deserve strong protection.


WYOMING
Great Divide Management Area
Raptor Nests and Observations
Medicine Bow
Saratoga
Laramie
Cheyenne
Rawlins
20 0 20 Miles
Great Divide Resource Management Plan
for the
Rawlins Field Office

The Prairie Dog Ecosystem

Including Black-footed Ferret, Swift Fox, and Burrowing Owl

The Great Divide is home to both white-tailed and black-tailed prairie dogs, with a relatively large number of white-tailed colonies (active and inactive) and a few black-tailed colonies. A large percentage of the non-mountainous portions of the study area west of the Laramie Mountains is habitat for white-tailed prairie dogs; to the east of the Laramie Mountains is black-tailed habitat. Due to the fact that the vast majority of BLM surface ownership within the study area is white-tailed habitat and there are very few known black-tailed colonies on BLM lands, this section will focus solely on the white-tailed species of prairie dogs and wildlife species associated with them.

Mapping white-tailed prairie dog colonies is difficult at present due to a dearth of current, publicly available data. Recent attempts by managers and scientists to use aerial photography to delineate white-tailed prairie dogs have not proven successful. The map on page 31 displays the best obtainable data. These include prairie dog observations from WYNDD, shown as red squares (WYNDD 2002); the location of the largest known colonies identified by WGFD in the mid-1980s through 1990, shown as large blue crosshatched polygons (Luce 1995); and results from 1988 aerial surveys which identified prairie dog burrows, shown as solid green polygons.

All the data must be viewed with the understanding that sylvatic plague (an exotic disease) has seriously reduced, or completely wiped out, many of the colonies shown on the map. Also, the 1988 aerial survey data only determined the presence of burrows, but did not evaluate whether the towns were actively occupied by prairie dogs. Primary habitat based on vegetation cover type from the Wyoming Gap analysis is not shown, as it would cover virtually the entire study area.

The white-tailed prairie dog has experienced drastic declines across its range. A recent assessment of the conservation status of white-tailed prairie dogs by fish and wildlife agencies in the western U.S. found that, "[c]oncern over the long-term viability of white-tailed prairie dog populations is warranted" (Seglund et al. 2004). The species is on the BLM sensitive species list in Wyoming and other states (BLM 2002b). The few remaining large colonies are ranked S3 by WYNDD (rare within Wyoming) (Keinath, et al. 2003) and NSS3 by WGFD (sensitive to disturbance with restricted or vulnerable habitat) (Cerovski, 2003). The white-tailed prairie dog was petitioned for listing under the ESA due to an estimated 92% decline in occupied acreage (Center for Native Ecosystems et al. 2002). WGFD acknowledged that "it appears to meet most of the listing criteria" for ESA protection (Cerovski 2002).

White-tailed Prairie Dog

Photo © Angie Young

Prairie dogs are considered by scientists and state wildlife agencies to be *keystone* species in the ecosystems that make up much of the study area (see, e.g., Kotliar 2000 and Kotliar et al. 1999; Luce 2003). As keystone species, prairie dogs play a key ecological role by: 1) providing essential habitat such as burrows for burrowing owls and ferrets, 2) serving as food for ferrets, ferruginous hawks, golden eagles, bobcats, coyotes, prairie falcons, red fox and swift fox, and 3) shaping the mosaics of plant communities and altering soil chemistry and texture (for example, providing short vegetation preferred by mountain plovers) (Freilich et al. 2001, Center for Native Ecosystems et al. 2002 citing numerous other sources). Long-tailed weasels and tiger salamanders are also associated with white-tailed prairie dog colonies. All of the aforementioned animals are found within the Great Divide. Wyoming's only population of black-footed ferrets is found in the Great Divide's Shirley Basin within a large complex of white-tailed prairie dog colonies. Swift fox and burrowing owl are also present, both of which have also declined significantly (FWS 2001b; BLM 2000).

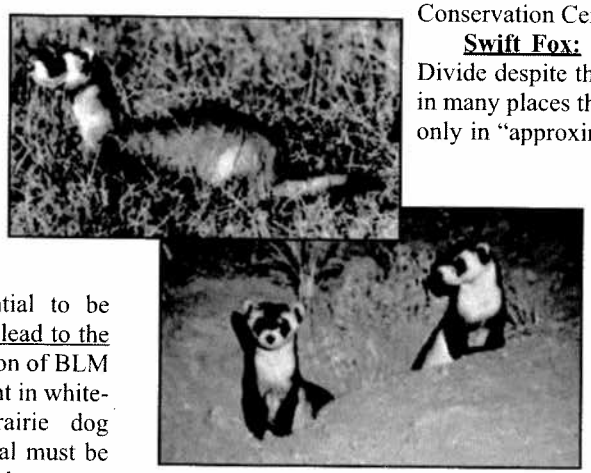
Black-footed ferret, burrowing owl and swift fox are shown on the map on page 31 because of their strong association with prairie dog colonies. Burrowing owl observations from WYNDD and BLM, repeated from the Raptor map, are presented again here as red squares, and those for swift fox as gold triangles. Historical black-footed ferret observations are shown as red circles. However, it is important to note that recent WGFD survey results indicate 88 ferrets may now occupy the ferret reintroduction site in Shirley Basin (WGFD 2004c). Management Zone 1 of the site is displayed as the large brown-orange polygon within the larger Shirley Basin ferret Management Area (in brown), but individual 2003 and 2004 ferret sightings are not shown. Black-footed ferrets are discussed in more detail below.

The large prairie dog complexes shown in blue crosshatch must be considered to be of particularly high value in helping conserve and restore the species. These areas constitute seven of the twenty-five largest known complexes rangewide consisting of active and/or inactive colonies. Thus, they represent not only important existing populations but also areas where restoration/relocation would make the most sense due to the presence of good habitat and intact burrow systems. For these reasons, the large complexes shown in blue were recently nominated to be designated as Areas of Critical Environmental Concern (ACEC) (Center for Native Ecosystems, 2003). The state wildlife agencies within the range of the white-tailed prairie dog support protecting such areas. More specifically, the Prairie Dog Conservation Team-White-tailed Prairie Dog Working Group (1) "believe[s] that the white-tailed prairie dog meets the ACEC 'Need for Special Management' criteria," (2) "recommends that BLM designate 'special emphasis areas' within sagebrush grassland areas that support white-tailed prairie dogs" and

(3) finds that "current management activities are not sufficient" to protect white-tailed colonies and complexes (Luce 2003).

Threats: The interagency Prairie Dog Conservation Team, made up of experts from state wildlife agencies, stated the following in its White-tailed Prairie Dog Conservation Assessment:

> This impact [oil and gas development] has the potential to rise to the level of a threat to the continued existence of the species over a significant portion of its range, and therefore has the potential to justify listing under the ESA in the foreseeable future. Oil and gas exploration is occurring at a phenomenal rate on public lands. Since the BLM owns and manages 55% of the land in the predicted range of the white-tailed prairie dog, significant impacts are possible, primarily during development of oil and gas fields with close well spacing and associated roads... [R]ecent data from Colorado, Wyoming and Utah indicate that white-tailed prairie dog complexes shift on a landscape scale, possibly in response to plague or other factors not currently identified. Therefore all suitable habitat within and adjacent to complexes must be protected from direct habitat loss on a landscape scale if expansion opportunities are to be retained. Current BLM policies do not adequately protect white-tailed prairie dogs during oil and gas development. With the increased amount of leasing and oil and gas development in the white-tailed prairie dog range (77% of the white-tailed prairie dog range in Wyoming has the potential to be impacted by oil and gas development) this could lead to the need for listing the species under the ESA. Revision of BLM Land Use Plans to control leasing and development in white-tailed prairie dog complexes to address prairie dog management needs and maximize habitat potential must be initiated on a state-by-state basis to prevent further, more drastic actions, including listing the white-tailed prairie dog under the ESA (Seglund et al. 2004, emphasis added).



Black-footed Ferrets Photos by LuRay Parker WGFD (top) and BLM

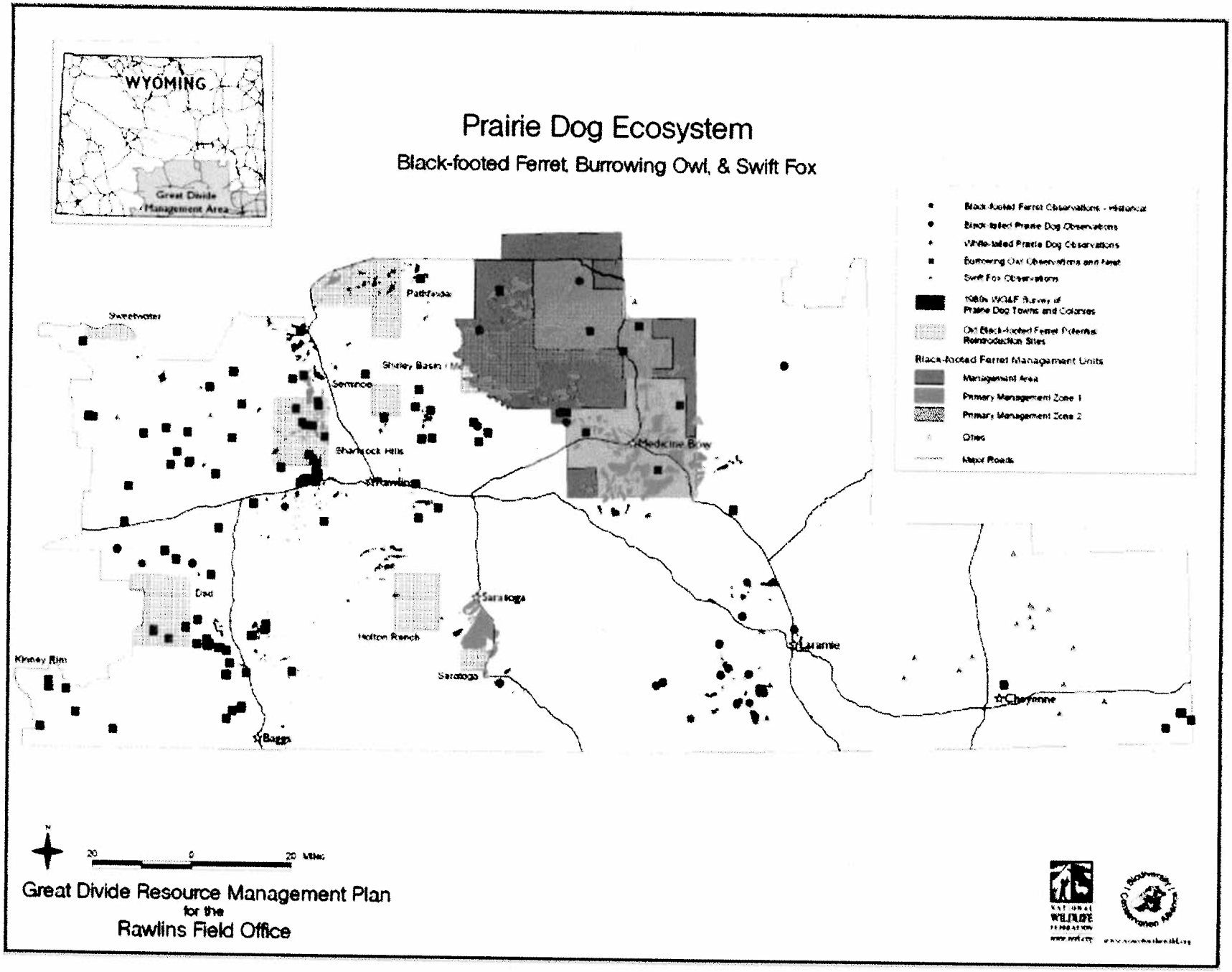
Seglund (2004) goes on to state that "the threat posed by oil and gas exploration and extraction could justify listing unless it is immediately addressed on public lands managed by the BLM. It is critical that the BLM through its Land Use Plans, manage oil and gas leasing and development in white-tailed prairie dog complexes to maximize prairie dog habitat potential" and "[s]pecial protection for large white-tailed prairie dog complexes should be employed by designating them as ACECs or 'special management areas' on public lands."

Black-Footed Ferret: Wyoming's only population of wild black-footed ferrets is found in the Great Divide in Shirley Basin. This black-footed ferret restoration area is shown on the map on page 31, with the overall management area in brown, and primary management zones 1 and 2 in orange and tan, respectively. Primary management zones are those areas within the larger management area that are considered by FWS to be the best places for release and management of the captive-raised ferrets. About 37 percent of the land surface within the management area is managed by BLM or other federal agencies, while the rest is private and state (FWS 1991). Two hundred twenty eight (228) ferrets were released in the area from 1991-1994. Recent surveys indicate the presence of 52 ferrets in 2003 and 88 ferrets in 2004, a large and encouraging increase over the 19 ferrets seen in 2001 (Grenier 2003; WGFD 2003e and 2004c). The increase is attributed to greater abundance of white-tailed prairie dogs, possibly resulting from greater moisture and grass growth in the spring.

Threats: The black-footed ferret is by no means out of danger, and its eventual recovery will require strong protection for the prairie dog ecosystem in the coming years: Future recovery depends on "more effective, long range conservation and management of habitats upon which the ferret depends. The challenges require even greater combined effort and resources from those involved in black-footed ferret recovery" (National Black-footed Ferret Conservation Center 2003, emphasis added).

Swift Fox: The diminutive swift fox lives throughout the Great Divide despite the fact that declines of swift fox have been substantial in many places throughout its Great Plains habitat. Currently it is found only in "approximately 40 percent of its historic range" (FWS 2001a). "The smallest of the canids, the swift fox is only found in the Great Plains of North America. Historically, the species was distributed from southern Canada to the panhandle of Texas, and from northwest Montana to western Minnesota. The disappearance of native prairies, accidental trapping, shooting, and poisoning campaigns aimed at wolves and coyotes, contributed to the decline in the fox's habitat and numbers" (FWS 2001b). In Wyoming, the current population occurs primarily in three geographic regions, the first two of which are completely or partially within the Great Divide: 1) Laramie Valley and Shirley Basin in Albany and Carbon counties, 2) Southeastern Plains--parts of Laramie, Platte and Goshen counties and 3) Powder River Basin (Cerovski 2002).

On the map on page 31, 49 swift fox observations are shown from WYNDD, 37 of which occurred after 1995. The most recent surveys have resulted in approximately two dozen observations in or near the Great Divide in Shirley Basin and Laramie Valley (Cerovski 2002; Schmitt 2000). "Short and mixed grass prairies mostly devoid of heavy shrub coverage characterized areas where swift fox were most commonly found" (Schmidt, 2000). WGFD notes that "swift foxes also occupy greasewood dominated flats, which may be more extensive within the RMP area than in grasslands" (WGFD 2002b).


WYOMING
Great Divide Management Area
Prairie Dog Ecosystem
Black-footed Ferret, Burrowing Owl, & Swift Fox
Black-footed Ferret Observations - Historical
Black-tailed Prairie Dog Observations
White-tailed Prairie Dog Observations
Burrowing Owl Observations and Nest
Swift Fox Observations
1980s WG&F Survey of Prairie Dog Towns and Colonies
Old Black-footed Ferret Potential Reintroduction Sites
Black-footed Ferret Management Units
Management Area
Primary Management Zone 1
Primary Management Zone 2
Other
Major Roads
Pathfinder
Sweetwater
Seminoe
Shirley Basin
Sheridan
Sharlock Hills
Rawlins
Medicine Bow
Dad
Helton Ranch
Saratoga
Laramie
Cheyenne
Kinney Rim
Bagg
20
0
20 Miles
Great Divide Resource Management Plan
for the
Rawlins Field Office