Final REPORT

MOUNTAIN PLOVER (*Charadrius montanus*) BIOLOGICAL EVALUATION

Submitted to:

U.S.D.I. - Bureau of Land Management
Wyoming State Office
5353 Yellowstone Road
P.O. Box 1828
Cheyenne, Wyoming 82003-1828

September 2005
(With Final Edits – 9 March 2007)

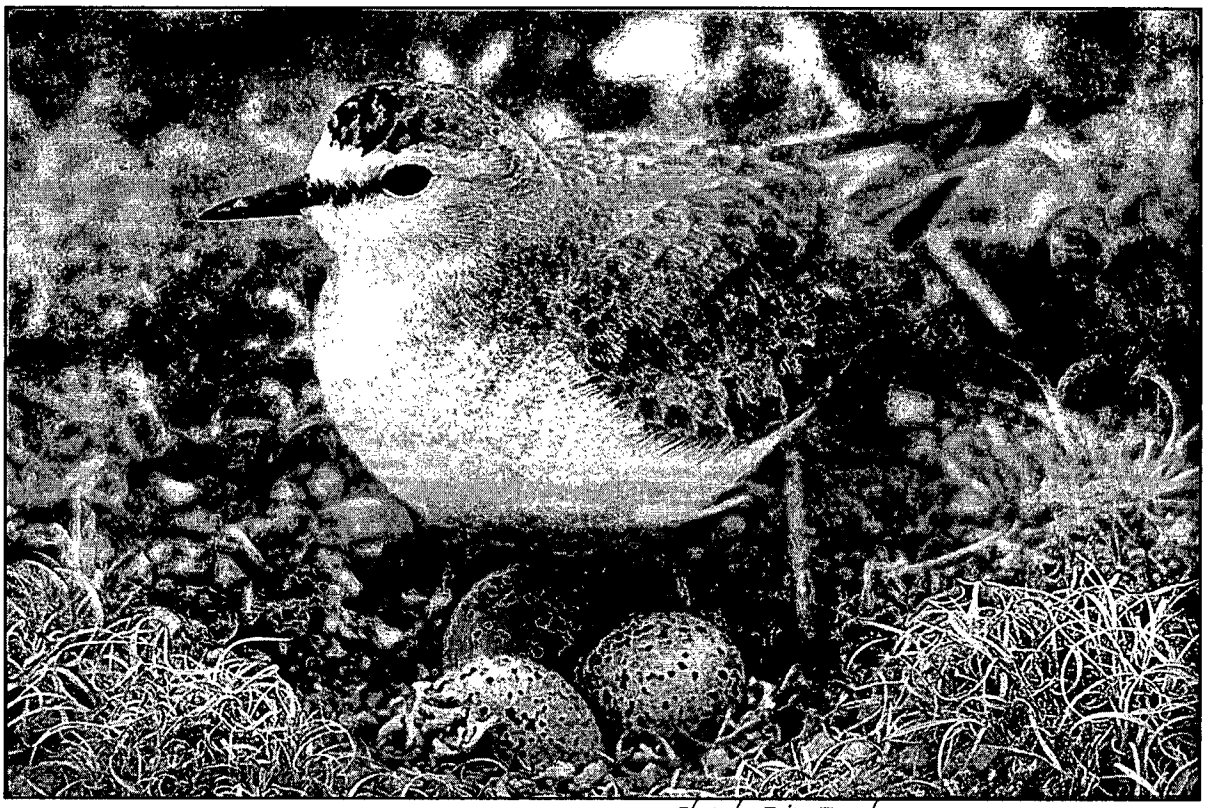


Photo by Fritz Knopf

TABLE OF CONTENTS

1.0 INTRODUCTION 1-1
Purpose 1-1
Report Organization 1-1
Methods 1-2
2.0 SPECIES INFORMATION 2-1
Listing Status 2-1
Description 2-1
Habitat Use 2-1
Habitat Model 2-3
Distribution 2-5
Threats 2-7
Environmental Baseline 2-7
3.0 ANALYSIS OF GENERAL PROGRAM DESCRIPTIONS 3-1
Analysis Of Proposed Management Actions And Effects 3-1
Access 3-1
Air Quality 3-2
Areas of Critical Environmental Concern 3-3
Cultural Resources 3-4
Fire 3-5
Forest Resources 3-7
Hazardous Materials 3-8
Lands and Realty 3-8
Livestock Grazing 3-10
Mineral, Energy and Geology and Resources 3-11
Off-Highway Vehicles 3-14
Paleontological Resources 3-15
Recreation Resources 3-16
Riparian Areas 3-17
Sensitive Plants 3-18
Soils Management 3-18
Surface Disturbance Restriction Decisions 3-19
Threatened, Endangered, and Candidate Species Protection 3-21
Vegetation Resources 3-22
Visual Resources 3-23
Watershed and Water Resources 3-24
Wild and Scenic Rivers 3-25
Wild Horse 3-25
Wilderness Resources 3-26
Wildlife Habitat 3-27
Summary of Management Action Determinations for each Resource management plan 3-30
4.0 CONSERVATION STRATEGIES 4-1
Existing Protections in the RMPs 4-1
Conservation Measures 4-2
Best Management Practices 4-2
5.0 REFERENCES 5-1

TABLES

Table 1 RMPs Analyzed for Mountain Plover Biological Evaluation 1-2
Table 2 Wyoming Statewide Distribution of Potential Mountain Plover Habitat 2-3
Table 3 Wyoming Statewide Distribution of Mountain Plover Occurrence Records 2-6
Table 4 Summary of Mountain Plover Effects Determinations 3-30
Table A - 1 Distribution of Potential Mountain Plover Habitat in the Buffalo FO/Buffalo RMP Planning Area 6-4
Table A - 2 Distribution of Mountain Plover Occurrences in the Buffalo FO/Buffalo RMP Planning Area 6-5
Table A - 3 Distribution of Potential Mountain Plover Habitat in the Casper FO/Platte River RMP Planning Area 6-6
Table A - 4 Distribution of Mountain Plover Occurrences in the Casper FO/Platte River RMP Planning Area 6-6
Table A - 5 Distribution of Potential Mountain Plover Habitat in the Cody FO/Cody RMP Planning Area 6-8
Table A - 6 Distribution of Mountain Plover Occurrences in the Cody FO/Cody RMP Planning Area 6-8
Table A - 7 Distribution of Potential Mountain Plover Habitat in the Kemmerer FO/Kemmerer RMP Planning Area 6-10
Table A - 8 Distribution of Mountain Plover Occurrences in the Kemmerer FO/Kemmerer RMP Planning Area 6-10
Table A - 9 Distribution of Potential Mountain Plover Habitat in the Lander FO/Lander RMP Planning Area 6-12
Table A - 10 Distribution of Mountain Plover Occurrences in the Lander FO/Lander RMP Planning Area 6-12
Table A - 11 Distribution of Potential Mountain Plover Habitat in the Newcastle FO/Newcastle RMP Planning Area 6-14
Table A - 12 Distribution of Mountain Plover Occurrences in the Newcastle FO/Newcastle RMP Plannning Ares 6-14
Table A - 13 Distribution of Potential Mountain Plover Habitat in the Pinedale FO/Pinedale RMP Planning Area 6-16
Table A - 14 Distribution of Mountain Plover Occurrences in the Pinedale FO/Pinedale RMP Planning Area 6-16
Table A - 15 Distribution of Potential Mountain Plover Habitat in the Rawlins FO/Great Divide RMP Planning Area 6-18
Table A - 16 Distribution of Mountain Plover Occurrences in the Rawlins FO/Great Divide RMP Planning Area 6-19
Table A - 17 Distribution of Potential Mountain Plover Habitat in the Rock Springs FO/Green River RMP Planning Area 6-21
Table A - 18 Distribution of Mountain Plover Occurrences in the Rock Springs FO/Green River RMP Planning Area 6-21
Table A - 19 Distribution of Potential Mountain Plover Habitat in the Worland FO/Grass Creek RMP Planning Area 6-23
Table A 20 Distribution of Mountain Plover Occurrences in the Worland FO/Grass Creek RMP Planning Area 6-23
Table A - 21 Distribution of Potential Mountain Plover Habitat in the Worland FO/Washakie RMP Planning Area 6-25
Table A - 22 Distribution of Mountain Plover Occurrences in the Worland FO/Washakie RMP Planning Area 6-25

MAPS

Map 1 - Probability of Mountain Plover Occurence and Occurrence Records Within the Area Covered by Twelve RMPs....2-4

Map A- 1 Buffalo Field Office....6-4
Map A- 2 Casper Field Office....6-7
Map A- 3 Cody Field Office....6-9
Map A- 4 Kemmerer Field Office....6-11
Map A- 5 Lander Field Office....6-13
Map A- 6 Newcastle Field Office....6-15
Map A- 7 Pinedale Field Office....6-17
Map A- 8 Rawlins Field Office....6-20
Map A- 9 Rock Springs Field Offfice....6-22
Map A- 10 Worland Field Office....6-24

ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
BA	Biological Assessment
BAER	Burned Area Emergency Rehabilitation
BE	Biological Evaluation
BLM	Bureau of Land Management
BMP	Best Management Practices
BUP	Biological Use Proposal
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COA	Condition of Approval
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FO	Field Office
IMP	Interim Management Policy
MLA	Mineral Leasing Act
MLAAL	Mineral Leasing Act for Acquired Lands
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_2	Nitrogen Dioxide
NRHP	National Register of Historic Places
NSO	No Surface Occupancy
OHV	Off-Highway Vehicle
PM_{10}	Particulate Matter
PSD	Prevention of Significant Deterioration
PUP	Pesticide Use Proposal
R&PP	Recreation and Public Purpose
RMP	Resource Management Plan
SO_2	Sulfur Dioxide
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management
WAAQS	Wyoming Ambient Air Quality Standards
WDEQ	Wyoming Department of Environmental Quality
WGFD	Wyoming Game and Fish Department
WSA	Wilderness Study Area
WSR	Wild and Scenic River
WYNDD	Wyoming Natural Diversity Database

1.0 INTRODUCTION

PURPOSE

This programmatic biological evaluation (BE) assesses the potential effects to the mountain plover (*Charadrius montanus*) from management actions included in Resource Management Plans (RMPs) approved by the Wyoming Bureau of Land Management (BLM). The objectives of this BE are to:

- Summarize the biology of the mountain plover, including its known and potential distribution in Wyoming;
- Review pertinent RMPs and RMP amendments and identify management actions with the potential to affect the mountain plover or its habitat;
- Assess the potential effects of actions proposed in the RMP on the mountain plover and its habitat;
- Prepare an effects determination on the mountain plover for each of the proposed actions identified in the RMPs; and
- Recommend conservation measures to reduce or eliminate adverse effects on the species.

The analysis area for each management action is based on the boundaries specified in the individual RMPs. These boundaries are described in the analysis section for each RMP. The determination is based on the nature of each management action as described in the RMP and on the available data for the mountain plover in the area that is affected by the management action.

REPORT ORGANIZATION

This BE is organized into five sections, plus three appendices, as described below:

Introduction – describes the purpose of the analysis, the scope of the biological assessment, the action area, and the methods used for this BE.

Species Information – summarizes the current listing status, species ecology, abundance and distribution in Wyoming, and threats to the mountain plover.

Analysis of General Program Descriptions – describes habitat and occurrence of the mountain plover, analyzes the effects from management actions authorized under each program for all field offices, and includes an effects determination specific to each management action for all field offices.

Conservation Strategies – provides recommendations that may further reduce potential effects to the mountain plover. These measures were prepared in coordination with the U.S. Fish and Wildlife Service (USFWS) office in Cheyenne, Wyoming.

References – provides a list of documents that were reviewed while preparing this report.

Appendix A - Distribution of Potential Mountain Plover Habitat.

Appendix B – Mountain Plover Survey Guidelines

Appendix C – Mountain Plover Project Screen

METHODS

Relevant scientific literature was reviewed to gather information about the ecology and habitat of the mountain plover. Biologists from Wyoming BLM field offices (FOs) were contacted as part of this review. In an effort to collect the most recent information about ecology, occurrence, and listing status, USFWS personnel in the Cheyenne, Wyoming office were also contacted. The Wyoming Natural Diversity Database (WYNDD) was referenced for species information, including description, distribution, and habitat preferences specific to occurrences in Wyoming

Each management action within twelve RMPs (**Table 1**) was reviewed to identify those with the potential to affect the mountain plover. Each of the BLM FOs was contacted and all available mountain plover occurrence and habitat data were requested. Mountain plover information was evaluated and potential effects from the management actions were analyzed. Management actions were evaluated in terms of their potential to directly and indirectly affect the mountain plover. State, private, local, and tribal activities were also evaluated to assess their potential to cumulatively affect the mountain plover.

TABLE 1 RMPS ANALYZED FOR MOUNTAIN PLOVER BIOLOGICAL EVALUATION

Field Office	Resource Management Plan (Year Published)
Buffalo	Buffalo Resource Management Plan (1985)
Casper	Casper Resource Management Plan (1985)
Cody	Cody Resource Area Resource Management Plan (1990)
Kemmerer	Kemmerer Resource Management Plan (1986)
Lander	Lander Resource Management Plan (1987)
Newcastle	Newcastle Resource Management Plan (2000)
Pinedale	Pinedale Resource Management Plan (1988)
Pinedale	Snake River Resource Management Plan (2004)[1]
Rawlins	Rawlins Resource Management Plan (1990)
Rock Springs	Green River Resource Management Plan (1997)
Worland	Grass Creek Resource Management Plan (1998)
Worland	Washakie Resource Management Plan (1988)

Snake River Resource Management Plan (2004)[1] – No mountain plovers occur on lands managed by the BLM the within this planning area.

The results of the effects analysis were used to establish an effects determination for each general program description. Each determination was based on the management prescription described in the RMPs and any measures intended to minimize the effects to the species. Conservation measures presented in the Conservation Strategies section of this BE were not included in the RMPs. However, given that the BLM has committed to the implementation of these measures upon receipt of the Biological Opinion from the USFWS, these measures are to be considered for each of the effects determinations:

- **No impact (NI)**; or
- **May detrimentally impact, but is not likely to contribute to the need for Federal listing (MI-NLC)**
- **May detrimentally impact and is likely to contribute to the need for Federal listing (MI-L)**
- **Beneficial impact (BI)**

2.0 SPECIES INFORMATION

LISTING STATUS

On December 30, 1982, USFWS designated the mountain plover as a category 2 candidate species (USFWS 1982). This designation indicated more information was necessary to determine whether the species status was declining, stable, or improving. In 1990, a status report was prepared indicating that Federal listing may be warranted. Based on this report, USFWS elevated the status of the mountain plover to category 1 candidate species in 1994. In 1996, the candidate listing categories were modified. The mountain plover retained its category 1 status as published by USFWS in 1997 (USFWS 1997). On February 16, 1999, the species was proposed for listing as a threatened by USFWS (USFWS 1999). The USFWS posted a notice in the Federal Register in 2002 that reopened the comment period regarding listing of this species (USFWS 2002a).

In September 2003, the USFWS withdrew the listing because new information indicated that the threats to the species included in the proposed listing were not as significant as believed earlier (USFWS 2003). The USFWS found that declines in local population numbers at specific locations do not represent population levels throughout the range, which suggests that the continental population has not changed significantly in the past decade. New information from many state and Federal agencies indicated that occupied black-tailed prairie dog habitat, which provides nesting habitat for plovers, is more abundant than previously believed (USFWS 2003). In addition, a variety of conservation efforts initiated for mountain plovers and other species of the high plains in several western states have been shown to benefit the mountain plover.

Much of the following mountain plover information is summarized from the 1999 proposed rule published in the Federal Register (USFWS 1999).

DESCRIPTION

The mountain plover is a small bird approximately nine inches tall, resembling the killdeer (*Charadrius vociferus*) in size. It is light brown above with a lighter colored breast, but lacks the contrasting dark breast belt common to many other plover species. During the breeding season, it has a white forehead and a dark line between the beak and eye, which contrasts with the dark crown (Knopf 1996).

HABITAT USE

Mountain plovers historically occupied grassland and shrub-steppe ecoregions that were inhabited by nomadic grazing ungulates such as bison (*Bison bison*), elk (*Cervus elaphus*), pronghorn (*Antilocapra americana*), and burrowing mammals such as kangaroo rats (*Dipodomys* spp.), and prairie dogs (*Cynomys* spp.). These species dominated the grassland landscape at both breeding and wintering sites, and their grazing, wallowing, and burrowing activities created and maintained a mosaic of vegetation and bare ground to which mountain plovers adapted.

Short vegetation, bare ground, and a flat topography are recognized as important mountain plover habitat characteristics at nesting and wintering locales. Mountain plover nesting sites are dominated by short vegetation and bare ground, often with manure piles or rocks nearby. In addition to nesting on prairie dog towns, mountain plovers show a strong affiliation to sites that are heavily grazed by domestic livestock.

The USFWS, with input from the BLM, other agencies, and experts, have developed a draft mountain plover habitat characterization system (USFWS 2000a). This habitat characterization system has been used to evaluate mountain plover survey locations and the likelihood of plover occurrence. Habitats are characterized as high, medium, low, and no potential for plover occurrence. Features of these habitat categories are listed here:

➢ High Suitability

To be considered high suitability habitat, all of the following criteria must be met:

- Minimum habitat patch size: 160 acres (65 ha);
- Habitat type: bare ground, grassland, low scrub (black sagebrush, Gardner's saltbush or other similar species);
- Maximum average vegetation height: 4 inches (10 cm);
- Amount of bare ground: minimum of 25 percent; and
- Topography: less than 5 percent slope.

High suitability mountain plover habitat is characterized by large areas of flat shortgrass prairie or very low shrubs with a prevalence of bare ground. Bare ground is an essential component of mountain plover nesting habitat (Knopf and Miller 1994). The presence of prairie dog towns is a common characteristic of occupied plover nesting habitats. The absence of prairie dog towns does not downgrade a habitat from high potential to low potential, but high potential habitats with prairie dog towns should receive special consideration (Knowles et al. 1982).

➢ Medium Suitability

The same criteria as listed for high suitability habitat are assessed, except that rather than the requirement that all criteria be met, no more than two of the characteristics may be missing from medium suitability habitats For example, rolling topography greater than 5 percent slope may be associated with large areas of bare ground. If prairie dog towns are present, a rating of no lower than medium suitability is typically warranted, unless the prairie dog towns are associated with slopes of 25 percent or less than 40 acres (16 ha) in size.

➢ Low Suitability

Low suitability habitats lack three or more of the criteria listed above. Low suitability habitats are characterized by areas with shrubs greater than 4 inches (10 cm) tall with few patches of shortgrass or other suitable habitat features. Areas with vegetation shorter than 4 inches that have very little bare ground may also be considered low suitability mountain plover habitat.

➢ No Suitability

This category includes areas that are not suitable habitat for mountain plovers. Habitats that are not suitable do not meet any of the criteria listed above. Such habitats include forests, riparian areas, areas with tall shrubs (mountain mahogany), canyons, montane or alpine habitats, wetlands, ranches, and urban areas.

HABITAT MODEL

As a supplement to existing habitat and occurrence data, a geographical information system (GIS) model (Beauvais and Smith 1999) was used to predict the potential for occurrence of breeding mountain plovers across the area affected by each of the twelve RMPs. This model uses data from the Wyoming Gap Analysis Project (GAP) (Merrill et al. 1996) and slope data derived from Digital Elevation Models (DEMs). Available data on prairie dog colonies were also integrated into the GAP vegetation data prior to running the model because of the known affinity of mountain plovers for prairie dog colonies (Knowles et al. 1982).

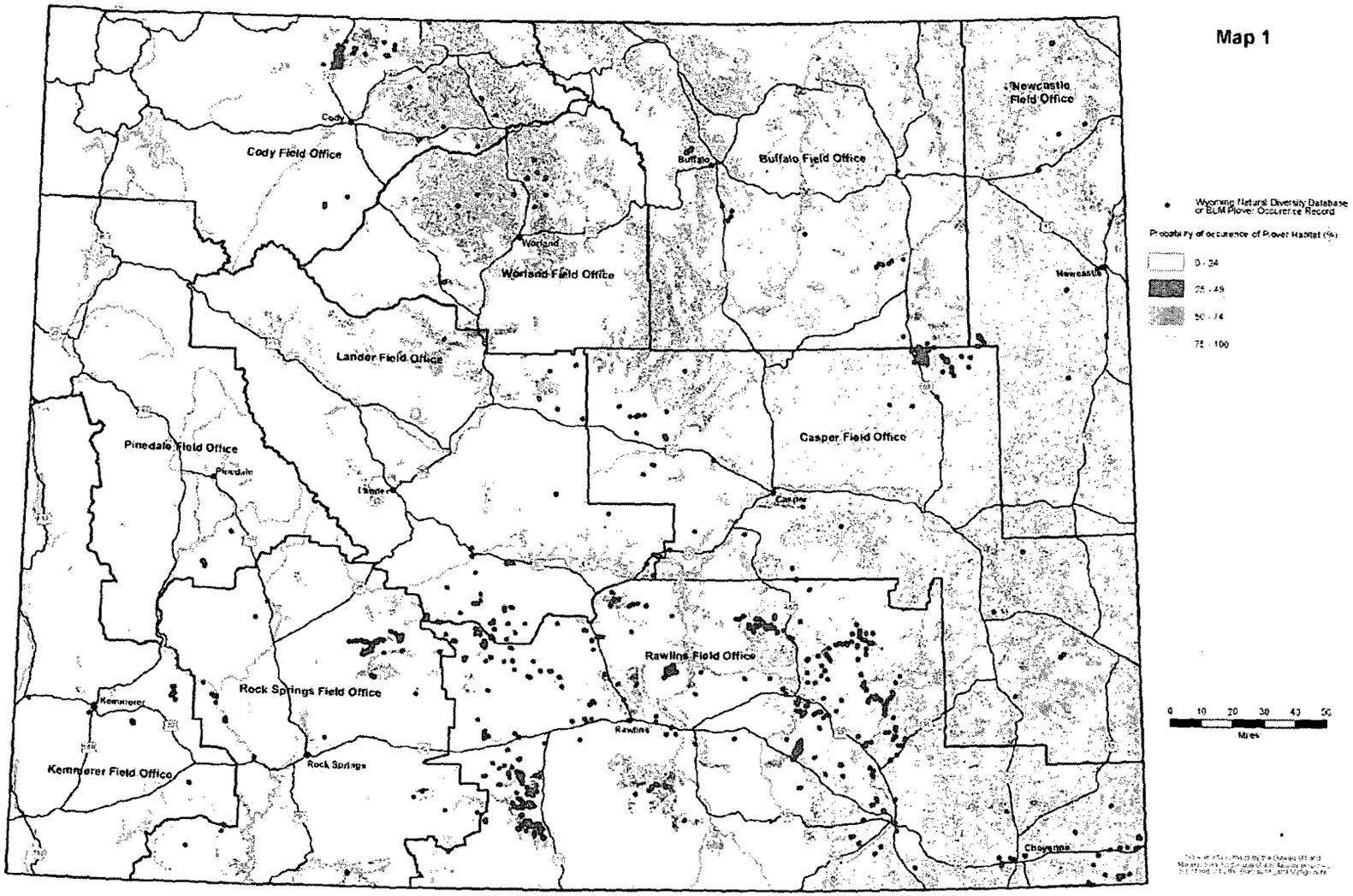
The results of the model run are shown graphically in **Map 1**, which shows the probability of mountain plover occurrence throughout the area covered by the twelve RMPs. GIS-derived numerical data from the same model run are shown in **Table 2**. The results are split into three categories: 1) BLM surface acres that are covered by the twelve RMPs; 2) Acres of surface other than BLM that are underlain by BLM minerals (typically called "split estate" lands) and are, therefore, included in the area covered by the twelve RMPs; and 3) other combinations of surface and mineral ownership that are not covered by one of the twelve RMPs.

TABLE 2 WYOMING STATEWIDE DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT

Probability of mountain plover occurrence (percent)	Covered by BLM RMPs			Not covered by BLM RMPs		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	15,500,055	11,509,160	81.6	14,610,692	68.6	41,619,907	76.5
25-50	361,285	449,152	2.4	633,938	3.0	1,444,375	2.7
50-75	490,727	352,522	2.5	673,643	3.2	1,516,891	2.8
75-100	1,260,921	3,193,890	13.5	5,370,890	25.2	9,825,702	18.1
Total	17,612,988	15,504,724	100.0	21,289,163	100.0	54,406,875	100.0

Approximately 32 million acres are subject to the twelve RMPs included in this assessment, which represents approximately 61 percent of the area within the RMP boundaries. Of this area, only 4.5 million acres (13.5 percent) were rated as having a high probability of mountain plover occurrence (75 to 100 percent). Most of the remaining area (81.6 percent) was rated as having a low probability of mountain plover occurrence (0 to 25 percent). A similar pattern was seen in the area not subject to the twelve RMPs, although a higher proportion (25.2 percent) of that area was rated as high probability of mountain plover occurrence (75 to 100 percent) and a lower proportion (68.6 percent) was rated as low probability of mountain plover occurrence. Specific patterns of habitats in the areas covered by each RMP are discussed in the sections for the individual RMPs.

Map 1 - Probability of Mountain Plover Occurrence and Occurrence Records Within the Area Covered by Twelve RMPs



Mountain plovers arrive on their breeding grounds in late March or early April. Mountain plover nests are simple scrapes in the ground lined with organic debris. Nests typically occur in areas with vegetation less than four inches in height, with at least 30 percent bare ground, and with a conspicuous object such as a manure pile, clump of vegetation, or rock nearby. Nest sites tend to occur on ground with less than five percent slope, which is usually heavily grazed by domestic livestock or prairie dogs. Vegetation characteristic of nesting sites is variable throughout the breeding range, but usually includes needle-and-thread (*Stipa comata*), blue gramma (*Bouteloua gracilis*), buffalo grass (*Buchloe dactyloides*), plains prickly pear cactus (*Opuntia polycantha*), June grass (*Koeleria cristata*), and sagebrush (*Artemisia* spp.) (Knopf 1996).

The breeding season begins soon after birds arrive on the nesting grounds. Breeding displays involve different calls and flight displays, including the "falling leaf" and pursuit flights to advertise territory occupancy and define boundaries between territories. Territories are approximately 40 acres, including some overlap with adjacent territories. Breeding plovers exhibit strong site fidelity, often returning to the same territory year after year (Knopf 1996, NRCS 2001). Territories tend to be aggregated with several breeding pairs occurring within a few miles surrounded by empty but apparently suitable habitat.

Nests may be initiated within one to two weeks after plovers arrive at the nesting sites, with laying a clutch of three eggs taking another 3-12 days to complete. Incubation typically lasts 29 days. Newly hatched chicks are precocial and leave the nest soon after hatching. Daily movements of the broods may be extensive, with broods ranging over as many as 200 acres between hatching and fledging. Plover chicks typically fledge 33 days after hatching (Graul 1975).

The plover diet is comprised primarily of ground-dwelling and winged invertebrates. Mountain plovers forage opportunistically for a wide variety of invertebrates. Grasshoppers, beetles, and ants are the most commonly taken prey items (Knopf 1996). Foraging efforts are often concentrated in areas of extensive ground disturbance, such as prairie dog towns, plowed field, roadways, and heavily grazed areas, such as around stock tanks.

DISTRIBUTION

Mountain plovers once occupied suitable breeding habitats in many of the Great Plains states from Canada to Texas, but their breeding range is now restricted to extreme southern Alberta, Canada, portions of Montana and Wyoming, eastern Colorado, northern and eastern New Mexico, northeastern Utah, and the western panhandle of Oklahoma and Texas (NRCS 2001). There are also a few records of breeding activity in extreme western Kansas and Nebraska and in northeastern Arizona (AGFD 1999). Wintering mountain plovers are typically concentrated in the Central Valley of California, Texas, and Mexico. Arizona and New Mexico also support lower densities of wintering mountain plovers (USFWS 1999).

Wyoming, along with Colorado and Montana, forms the central core of the mountain plover breeding range. Approximately 1,500 mountain plovers are estimated to occur in Wyoming (USFWS 2002a). Birds have been observed during the breeding season in suitable habitats throughout the state, with the exception of the extreme northwest portion (Luce et al. 1999). Highest breeding densities have been reported in the Laramie Plains of northern Albany County and eastern Carbon County and in Converse, Laramie, Park, and Sweetwater Counties (USFWS 1999) and in southwestern Carbon and southeastern Sweetwater counties.

The statewide distribution of known mountain plover occurrence records is shown in **Map 1**. Mountain plovers have been recorded in each of the twelve RMP areas, but are more commonly encountered in certain areas, including the Bighorn Basin, Great Divide Basin, Laramie Basin, and the Thunder Basin National Grasslands. Specific patterns of occurrence records in the areas covered by each RMP are discussed in the sections for the individual RMPs.

The distribution of known occurrence records was compared with the model predictions of potential mountain plover habitats (**Table 3**). It is important to note that the data presented in **Table 3** are the result of multiple years of survey efforts, often in the same location. These data should not be taken to represent an estimate of the population in Wyoming because of the likelihood that many plovers have been counted more than once.

TABLE 3 WYOMING STATEWIDE DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCE RECORDS

Probability of mountain plover occurrence (percent)	Covered by BLM RMPs			Not covered by BLM RMPs		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	785	167	60.7	319	65.5	1271	61.8
25-50	27	1	1.8	26	5.4	54	2.6
50-75	66	7	4.7	9	1.9	82	4.0
75-100	226	290	32.8	133	27.2	649	31.6
Total	1104	465	100.0	487	100.0	2056	100.0

The comparison between modeled probability of mountain plover occurrence and occurrence records shows that there is partial, but not complete overlap. In particular, many recorded plover occurrences in the Great Divide Basin are not located in areas of potential plover habitat (**Map 1**). Young and Good (2000) observed that in the bare ground/*Atriplex* habitats that are found in this area, mountain plovers may select breeding sites based on fine-scale site characteristics. The model used to determine probability of mountain plover occurrence uses Wyoming GAP data (Merrill et al. 1996) that are designed for broad-scale analysis and that do not show fine-scale habitat features. Patterns of mountain plover occurrence in other areas, such as the Laramie Basin and Thunder Basin National Grasslands, show strong correspondence between modeled probability of mountain plover occurrence and documented occurrences (**Map 1**).

There are also a number of areas that appear to contain an abundance of potential plover habitat, but where occurrences have not been recorded (**Map 1**). Large tracts of land east of Cheyenne and as far north as Newcastle appear to be suitable, but few occurrences have been recorded. This lack of plover occurrence is probably best explained by two factors: 1) much of this area is privately owned and has not been surveyed for plovers; and 2) the type of shortgrass prairie that is found there is more contiguous and does not have the open space/bare ground required by mountain plovers and therefore, does not meet the requirements for breeding mountain plovers.

THREATS

Reasons for the decline in mountain plover numbers can be attributed to four primary factors: 1) destruction and/or modification of breeding and wintering habitats; 2) historical hunting pressure; 3) disease and/or predation; and 4) lack of existing, protective regulatory mechanisms. The historic conversion of grassland to croplands within the breeding range of the mountain plover has been extensive, with approximately 32 percent of the grasslands in the Great Plains states converted. In Wyoming, approximately 20 percent of the native shortgrass prairie has been converted to cropland. Conversion of native rangeland to cropland, developed land, and other rural lands in Wyoming accounted for the loss of approximately 25,300 acres of rangeland during a ten-year period between 1982 and 1992. Similar conversion of wintering grounds has occurred. The historical and continued loss of habitats at the breeding and wintering sites has contributed to the current status of the mountain plover (USFWS 1999).

Direct habitat loss is not the only threat associated with grassland conversion. Grassland conversion not only destroys mountain plover breeding sites and eliminates the opportunity to manage grasslands to provide future nesting sites, it also creates habitats (cultivated fields) that attract breeding mountain plovers. Destruction of mountain plover nests, eggs, and chicks occurs when tilling in cultivated fields begins after nests are established. Changes in range management practices that favor uniform grass cover of taller grasses have caused a reduction in the amount of suitable mountain plover breeding habitats. Current range management practices also prevent the creation of heavily grazed patches, including areas of bare soil, further reducing the amount of available mountain plover habitats (USFWS 1999).

In the late 1800s, the mountain plover was hunted for food and local market value. The approachable nature of this species and its tendency to flock made it an easy target for hunters and susceptible to intense hunting pressure.

Mountain plovers are most vulnerable to terrestrial and avian predators as eggs or chicks. Potential predators include the prairie falcon (*Falco mexicanus*), loggerhead shrike (*Lanius ludovicianus*), swift fox (*Vulpes velox*), ground squirrels (*Spermophilus* spp.), and coyote (*Canis latrans*). Predation is not believed to be an important factor in the long-term decline of the mountain plover (USFWS 1999).

Protecting the mountain plover and its habitat is complicated because its breeding and wintering habitats occur over a wide geographic area, which includes private and public land, and numerous State and Federal agencies. Federal laws that provide protection for mountain plovers include the Federal Land Policy and Management Act, Federal Onshore Oil and Gas Leasing Reform Act, Endangered Species Act, Fish and Wildlife Coordination Act, Federal Agriculture Improvement and Reform Act of 1996, and Migratory Bird Treaty Act. To various degrees, these laws address candidate species, migratory birds, or declining species when evaluating potential effects of Federally authorized, funded, or permitted actions. Further, some Federal agencies have adopted policies requiring consideration of declining species during project review, to ensure that Federal actions do not cause a trend toward Federal listing. The effectiveness of these existing Federal regulations and polices are highly variable and may not be sufficient to reverse the species' decline throughout its range (USFWS 1999).

ENVIRONMENTAL BASELINE

This section presents a summary of the known occurrence and habitats of the mountain plover in each FO and an analysis of the effects of past and ongoing human activities (State, tribal, local, and private) that may have influenced mountain plovers and their habitats. Information regarding mountain plover occurrence and habitat suitability was solicited from USFWS, BLM FOs, WGFD Non-Game Department, WYNDD, and other experts. Studies conducted by Keinath et al. (2001) and Good et al. (2002), a

database of mountain plover observations provided by WYNDD, and personal communications with the FO biologists represents the most recent and available information regarding mountain plovers in the FOs. Detailed information and data are provided for each FO in Appendix A.

In addition, documents such as the Mountain Plover Survey Guidelines (USFWS 2002b) and the Mountain Plover Project Screen (The Screen) (BLM et al. 2004) provide information on survey requirements and timing limitations for projects within potential mountain plover habitat. The Screen was developed by a team of experts collectively representing many years of experience with the species or the activities or programs covered in the Screen. It was designed to allow for proactive and consistent management and conservation of the mountain plover on public lands and to provide a tool for streamlining agency review and implementation of activities (BLM et al. 2004). The Mountain Plover Survey Guidelines (USFWS 2002b) are included in Appendix B and the Mountain Plover Project Screen (BLM et al. 2004) is included in Appendix C.

3.0 ANALYSIS OF GENERAL PROGRAM DESCRIPTIONS

ANALYSIS OF PROPOSED MANAGEMENT ACTIONS AND EFFECTS

The proposed actions for eleven RMPs, covering 10 field offices, are summarized below. The Snake River RMP (2004) contains no mountain plover habitat on BLM managed lands, has a completed consultation (April 2004), and will not be analyzed further. The management actions have been combined in this section to more efficiently discuss the general types of activities and management actions that occur programmatically throughout the Wyoming BLM FOs. The following sections describe the management actions that may affect the mountain plover. For specific management program information, please refer to each RMP. These RMPs can currently be reviewed online by accessing the BLM Resource Management Plans website (http://www.blm.gov/nhp/spotlight/state_info/planning/wy/index.htm). Following the descriptions and determinations is a table (**Table 4**) summarizing the effects determinations for the eleven RMPs for impacts to mountain plovers from the programs and activities authorized by each respective RMP.

Access

Management Actions

The objective for access management is to provide suitable public access to BLM-administered public lands. This may include acquiring new access where needed, maintaining and expanding existing access facilities, or abandoning and closing access where it is not compatible with resource values and objectives.

Access across private lands will be pursued as needed through a variety of methods including, but not limited to, purchase of rights-of-way or easements, land exchange, reciprocal rights-of-way, and other statutory authorities. Specific routes and acquisition procedures for securing access are determined through route analyses and environmental analyses as part of specific project and activity planning. Access acquisition needs (typically for roads) are most commonly identified for public access for recreational use, timber harvests, grazing, etc.. This may be for hunting, sightseeing, rockhounding or general exploring. Acquisition of access to public lands has been identified in locations that would provide the public with an opportunity to utilize resources that have previously been unavailable because the public lands had no public access. An increase in access could result in an increase in human activity in an area that previously had little activity, development of roads, trails, parking areas and other facilities to enhance the public's use of the area. The construction of access roads, trails, parking areas, and other associated facilities would require the use of heavy equipment and machinery, as well as surface disturbance at the site. Where appropriate, land exchanges or cooperative agreements are considered to provide access needs.

Areas with high road densities may be evaluated to determine needs for specific road closures or rehabilitation. Specific mitigation measures and design requirements for roads are developed through environmental analyses as part of specific projects or activity planning. Access closure, abandonment, and acquisition are considered and established through activity planning and environmental analysis processes. Road or trail closure and abandonment is based on desired road or trail densities, demands for new roads, closure methods (e.g., abandonment and rehabilitation, closures by signing, temporary or seasonal closures), type of access needed, resource development or protection needs, and existing uses.

Effects Analysis

Two-track roads with low use levels may be attractive to foraging plovers. The attraction to roads may result in direct effects to mountain plovers such as displacement and vehicle mortality. Roads may also provide travel corridors for mountain plover predators. Implementation of the Mountain Plover Project Screen (BLM et al. 2004) would minimize direct effects to nesting mountain plovers and their occupied habitats. Projects implemented outside of the typical nesting period would be less likely to harm individual plovers because post breeding plovers typically flock and leave nesting grounds by mid-July (Knopf 1996). Surface disturbing activities occurring outside of the nesting period would have the potential to damage or destroy potentially suitable mountain plover nesting habitats.

Determination

Implementation of access management actions **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the potential for direct and indirect effects of road use to harm mountain plovers. However, these effects will be minimized through implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004).

Air Quality

Management Actions

The objective of air quality management is to maintain or enhance air quality, protect sensitive natural resources and public health and safety, and minimize emissions that cause acid rain or degraded visibility. Typical air quality management includes dust control, weather monitoring, and air quality data monitoring. The air quality management program may evaluate or restrict surface development. The BLM requires that operators cover conveyors at mine sites, restrict flaring of natural gas, limit emissions, and restrict spacing on projects.

BLM-initiated actions or authorizations are planned in accordance with Wyoming and national air quality standards. This is accomplished through coordination with the Wyoming Department of Environmental Quality (WDEQ) and the U.S. Environmental Protection Agency (EPA). Laws controlling air pollutants in the United States include the Clean Air Act of 1970 and its amendments, and the 1999 Regional Haze Regulations. The concentrations of air contaminants in the planning area need to be within limits of Wyoming ambient air quality standards (WAAQS) and national ambient air quality standards (NAAQS). Both WAAQS and NAAQS are legally enforceable standards for particulate matter (PM_{10}), nitrogen dioxide (NO_2), ozone, sulfur dioxide (SO_2), and carbon monoxide (CO). Air quality stations used to monitor particulates, if located in mountain plover habitat, could cause disturbances through the building/ construction of the station and associated access roads, maintenance and upkeep, and equipment reading and repair. No known monitoring stations are currently in mountain plover habitat on BLM lands in Wyoming, although additional Federal and state funded stations are being placed in Wyoming annually.

In addition to NAAQS and WAAQS, major new sources of pollutants or modifications to sources must comply with the New Source Performance Standards and Prevention of Significant Deterioration (PSD). The PSD increments measure PM_{10}, SO_2, and NO_2. The PSD program is used to measure air quality to ensure that areas with clean air do not significantly deteriorate while maintaining a margin for industrial growth.

Effects Analysis

Air quality management actions are typically associated with limitation, reduction, and monitoring of pollutants and dust during other BLM management actions. The use of equipment to control dust, such as water trucks, may directly impact nesting mountain plovers. Implementation of the conservation strategies (section 4.0) would minimize direct effects to nesting mountain plovers and their occupied habitats when dust control measures are required.

Determination

Implementation of air quality management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the lack of monitoring stations currently in mountain plover habitat on BLM lands, the limited potential for dust control measures to harm mountain plovers (actually dust control would be beneficial to mountain plovers) and minimization of direct effects to the plover through implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004).

Areas of Critical Environmental Concern

Management Actions

The objectives of special management areas, such as Areas of Critical Environmental Concern (ACECs), are to ensure continued public use and enjoyment of recreation activities while protecting and enhancing natural and cultural values. They offer opportunities for high-quality outdoor recreation. Other objectives include improving visitor services related to safety, information, and interpretation as well as developing and maintaining facilities. The designation of ACECs in an RMP is simply a designation, and does not automatically convey specific management or protections, although with designation, some resource management protections are spelled out and implemented. If access roads or other types of facilities are specifically required, then these will be described within the appropriate activity section in this document. Generally, ACEC status is a beneficial impact on wildlife and plant species.

Under the Special Areas Management program, which includes ACECs, the BLM closes areas where accelerated erosion is occurring, applies restrictions on ground-disturbing activities, and implements restrictions on and the use of heavy equipment. Recreational trails and improvements could be built as well as pursuing land exchanges. ACECs also ensure protection of petroglyphs, artifacts, and cultural deposits from weathering and vandalism. The BLM evaluates noxious weed and grasshopper control measures. Significant sites and segments along Natural Historic Trails are generally designated as ACECs.

Effects Analysis

Activities in each of the ACECs will be similar to those contemplated under the various other management actions in this RMP, except that additional restrictions on ground-disturbing activities will be applied. Special restrictions will be applied to management actions in ACECs that include cultural and paleontological resources, minerals, fire, off-road vehicles (ORV), vegetation and soils, and wildlife habitat. None of these additional restrictions is specifically directed toward protecting habitat for the mountain plover, but they may indirectly benefit potential habitat by preventing some disturbances and by minimizing impacts to known nesting locales and habitats.

Determination

Implementation of ACEC resource management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the minimization of direct effects to the plover through implementation of restrictions placed within ACECs, the conservation strategies (section 4.0), and the Mountain Plover Project Screen (BLM et al. 2004). ACEC designation would likely provide beneficial affects to mountain plovers and their habitat by limiting or restricting other ground disturbing activities.

Cultural Resources

Management Actions

The objective of cultural resource management is to protect, preserve, interpret, and manage significant cultural resources for their informational, educational, recreational, and scientific values. Site-specific inventories for cultural resources would be required before the start of surface disturbance or if BLM-administered lands were proposed for transfer out of Federal ownership.

The BLM performs inventories as well as land management. During inventory activities, the BLM inventories, categorizes, and preserves cultural resources, conducts field activities, performs excavations; maps and collects surface materials, researches records, and photographs sites and cultural resources. Inventory data collection is used for documentation and development of mitigation plans before other resource program surface disturbance. Inventory activities commonly entail the use of hand tools, power tools, or heavy machinery. These inventories are divided into Class I, Class II, and Class III. The BLM normally completes cultural resource inventories in response to surface-disturbing projects. Survey intensity varies among inventories, which may involve two to seven individuals and trucks, and may last from one day to several weeks.

Cultural resource land management involves managing sites for scientific, public, and sociocultural use by developing interpretive sites and preparing interpretive materials. Use limiting activities include restricting certain land uses, closing certain areas to exploration and prohibiting some surface-disturbing activities. This program also allows the collection of certain invertebrate fossils. Archeological collections are authorized through a permit system. The cultural resource program may authorize installation of fencing to protect trail segments, stabilize deteriorating buildings, acquire access to sites when necessary, perform certain surface-disturbing activities, pursue land withdrawals, explore and develop locatable minerals, designate avoidance areas, pursue cooperative agreements, and identify and interpret historic trails. Cultural resource interpretive sites, such as historic trails or rock art sites, may be developed to provide public benefits such as scenic overlooks, signs, and walking trails.

Adverse effects on significant cultural resources are mitigated by avoiding surface disturbance in culturally-rich areas, as well as by managing sites and structures for their cultural importance. Surface disturbance is avoided near significant cultural and paleontological resource sites and within ¼ mile or the visual horizon of significant segments of historic trails and canals. Sites listed on, or eligible for, the National Register for Historic Places (NRHP) are protected and would be managed for their local and national significance in compliance with the National Historic Preservation Act, the Archaeological Resources Protection Act, the American Indians Religious Freedom Act, and the Native American Graves Protection and Repatriation Act, as appropriate.

Effects Analysis

Field surveys for cultural resources conducted during the breeding season may result in the temporary displacement of mountain plovers from nesting and/or foraging areas. Displacement of nesting adults from nests or away from pre-fledging chicks may result in loss of eggs or chicks to chilling, overheating, or predation. Field surveys would not impact plover habitats. Excavation of cultural sites may result in the loss of suitable plover habitat; however, the extremely limited extent of most excavations suggests that this impact would have minimal effect on mountain plovers on a landscape scale. Restrictions on surface development may indirectly benefit plovers by preventing impacts to individuals and habitats that would otherwise occur.

Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize direct effects to nesting mountain plovers and their occupied habitats when soil disturbing investigations are required. Projects implemented outside of the typical nesting period would be less likely to harm individual plovers because post breeding plovers typically flock and leave nesting grounds by mid-July (Knopf 1996). Surface disturbing activities occurring outside of the nesting period would have the potential to damage or destroy potentially suitable mountain plover nesting habitats.

Determination

Implementation of cultural resources management actions **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the minimization of direct effects to the plover through implementation of the conservation strategies (section 4.0), and the Mountain Plover Project Screen (BLM et al. 2004), and the extremely limited potential to damage or destroy suitable, but unoccupied habitats.

Fire

Management Actions

The objectives of fire management are to restore the natural role of fire in the ecosystem and to protect life, property, and resource values from wildfire. The two major activities involved with the BLM's fire management are prescribed burning and wildfire suppression.

Prescribed fire objectives are to restore natural fire regimes and enhance rangeland habitats for livestock and wildlife. The prescribed fire program authorizes fire plans, firebreaks, prescribed burns, and coordination with necessary parties on a case-by-case basis. Some prescribed fires are conducted to dispose of slash and residue from timber sales, improve wildlife habitat and grazing potential, or to reduce hazardous fuel loads.

Wildfires threatening valuable resources, including commercial timber areas, developed recreation sites, and areas of wildland/urban interface, or fires with potential to spread to private, state, or other Federal lands are suppressed. Fire suppression methods vary with the intensity of the wildfire and are conducted on an emergency basis. Fire lines are constructed to contain the wildfire. Water is withdrawn from nearby sources to suppress fires. Chemical fire suppression agents containing chemical dyes may be used, if needed. The use of aerial fire retardant is restricted near water resources. After a fire is extinguished, the BLM may use rehabilitation techniques to restore a burned or suppressed area to its previous vegetative cover.

Activities authorized by this program include tree thinning, construction of roads and fire lines, manual and aerial application of fire-suppressing chemicals, and revegetation and mulching stream banks for

rehabilitation. These activities often employ the use of off-road vehicles, hand tools, and heavy equipment such as bulldozers.

Fire and suppression impacts are evaluated through the Burned Area Emergency Rehabilitation (BAER) process on all burned areas. This process evaluates the potential for impacts on the ecosystems involved and proposes stabilization and rehabilitation actions.

Effects Analysis

This effects analysis considers the effects from prescribed burning and efforts associated with wildfire suppression. Fire management activities, including fire suppression and use of prescribed fire, may negatively impact mountain plover health, behavior, and habitats. Fire suppression and prescribed fire activities, such as fire line construction or ignition of prescribed fires, during the breeding season may harass, injure, or result in mortality of mountain plovers. Displacement of breeding adults from nests or away from pre-fledging chicks may result in loss of eggs or chicks to chilling, overheating, or predation. Prescribed fire during the breeding season may improve habitats, but may cause temporary displacement, injury, or mortality if nesting areas are burned. Prescribed fire applied before or after the breeding season would avoid direct impacts, while providing benefits in terms of improved habitats. In most cases, this positive effect would be short-lived (one to two years) because vegetation would re-grow after a fire.

Wildland fires, including prescribed fires, have the potential to improve plover habitats by reducing shrub and other plant density, creating additional open areas and patches of bare ground. In areas of dense, decadent shrubs, fire may increase bare ground and grass cover for decades. Fire suppression would prevent or reduce these potential benefits to mountain plover habitats. Post-fire rehabilitation activities, such as grass seeding, may reduce the availability and/or quality of plover habitat if taller grass or shrub species are used.

Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize direct effects to nesting mountain plovers and their occupied habitats from prescribed fire activities. Projects implemented outside of the typical nesting period would be less likely to harm individual plovers because post breeding plovers typically flock and leave nesting grounds by mid-July (Knopf 1996). Prescribed burning efforts that include the use of heavy machinery, off-road vehicles, and power tools have the potential to damage or destroy potentially suitable mountain plover nesting habitats. Because of the characteristics of plover habitat, this potential is very low; in fact prescribed fire is not common in suitable plover habitat because these areas typically lack sufficient fuels to carry a fire across the landscape.

Determination

Implementation of fire management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the low likelihood of prescribed or wildland fires occurring in mountain plover habitat and the minimization of direct effects to the plover through implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004), if prescribed burning efforts do occur in suitable nesting habitats.

Forest Resources

Management Actions

The objectives of forest management are to maintain and enhance the health, productivity, and biological diversity of forest and woodland ecosystems and to provide a balance of natural resource benefits and uses, including opportunities for commercial forest production. The BLM manages forests for multiple uses, such as recreation, livestock grazing, and wildlife habitat.

The program allows the treatment of diseased trees by spraying, cutting, and removal; herbicidal spraying of grasses and shrubs; and pre-commercial thinning, chaining, and shearing. Clearcuts, slash disposal, logging, helicopter logging, and skidder-type and cable yarding are allowed during timber harvest. Non-commercial timber harvest involves collection and cutting of firewood, Christmas trees, posts, poles, and wildlings. The BLM ensures that site regeneration and stand replacement follow timber harvest. Forest management may include conducting surveys, obtaining easements, pursuing legal access, road development, and installing drain culverts and water bars.

Timber harvesting occurs on commercial forestlands with slopes less than 45 percent. Forest products are sold by permit. Individual authorized clearcuts may not exceed 20 acres. Areas within 200 feet of surface water are prohibited from harvest. Slash is to be lopped and scattered, roller chopped, or burned. Regeneration areas are often fenced to prevent wildlife and livestock from damaging seedlings. Private and state land may be accessed for forest management purposes through acquisition of easement.

Currently, cottonwood and willow trees are not harvested by the BLM in Wyoming. Non-commercial woodlands (e.g., riparian areas) are managed to optimize cover, enhance habitat for wildlife, and protect the soil and watershed values.

Effects Analysis

Activities associated with forest resource management are unlikely to directly affect the mountain plover, because of its association with non-forested shortgrasslands and shrubland habitats. In situations where forest patches occur adjacent to potentially suitable grasslands or shrublands, construction and use of access roads to these forest patches may displace mountain plovers during the breeding season or cause direct harm through vehicle mortality. Access roads will be analyzed under the Access and Lands and Realty activities. As with other activities occurring in potentially suitable mountain plover habitats, prior to any ground disturbance implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize the potential for direct harm to mountain plovers.

Determination

Implementation of forest resources management will have **no impact** on the mountain plover or its habitat. This determination is based on the lack of forest management activities within mountain plover habitat.

Hazardous Materials

Management Actions

The primary objective of hazardous materials management is to protect public and environmental health and safety on lands administered by BLM. Hazardous materials management also seeks to comply with Federal and state laws to prevent waste contamination caused by BLM-authorized actions, and to minimize Federal exposure to the liabilities associated with waste management on public lands.

Hazardous materials and waste management policies are integrated into all BLM programs. Public lands contaminated with hazardous wastes are reported, secured, and cleaned according to Federal and state laws, regulations, and contingency plans. Warnings are issued to potentially affected communities and individuals if hazardous material is released on public land.

Effects Analysis

Activities associated with hazardous material handling and management would typically occur in developed administrative settings that do not include suitable plover habitats or during an unplanned release. If an unplanned release occurred in suitable nesting plover habitat and required a major emergency response, there would be the potential to harm mountain plovers and to destroy suitable nesting habitat.

Determination

Implementation of hazardous materials management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the extremely low likelihood that response actions necessitated by an unplanned release would directly impact mountain plovers and suitable plover nesting habitats and on the minimization of direct effects to the plover through implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004).

Lands and Realty

Management Actions

The objectives of the lands and realty management program are to support multiple-use management goals of the BLM resource programs; respond to public requests for land use authorizations, sales, and exchanges; and acquire and designate rights-of-way access to serve administrative and public needs.

Public land tracts that are not critical to current management objectives will be disposed of through the realty management program. Non-Federal lands may be acquired through exchange in areas with potential for recreation development or in areas containing important wildlife, cultural, scenic, natural, open space, or other resource values. Protective withdrawals may be established to protect and preserve important resource values, but require extensive mineral investigations.

Realty management authorizes occupancy of public lands for roads, power lines, pipelines, communication sites, and irrigation ditches authorized by granting a right-of-way. Rights-of-way management actions respond to public requests for access, land authorizations, sales, and exchanges. These rights-of-way may be temporary or extend two years or longer.

The program pursues cooperative agreements, develops recreation site facilities, considers offsite mitigation, minimizes access in wildlife habitat, fences revegetation sites, blocks linear rights-of-way to vehicle use, considers temporary-use permits, considers new withdrawals, and leases acres for landfills.

Access management generally supports other resource management programs and is authorized under the Realty Management Program. The BLM rehabilitates access roads that are no longer needed, proposes easement negotiations, pursues access across private lands, acquires rights-of-way or easements, and exchanges lands.

Cases are considered individually in mineral exchanges. Public lands can be considered for sale or disposal on a case-by-case basis when a definite need for the land is identified and the proposal meets the requirements of the Recreation and Public Purpose (R&PP) Act and local land use plans. Leasing public lands for landfills is allowed under the R&PP Act, and sanitary landfilling is a common method of solid waste disposal.

All BLM-administered public lands will be open to consideration for utility and transportation systems, but these systems will be located next to existing facilities whenever possible. Areas with important resource values will be avoided where possible when planning for placement and routes of new facilities. Effects will be intensively mitigated if it becomes necessary to place facilities within avoidance areas.

Effects Analysis

Mountain plovers that occur in areas subject to development for utility and transportation projects may be harassed, injured, or killed by these activities, and suitable mountain plover habitats may be degraded or destroyed. Two-track roads with low use levels may be attractive to foraging plovers. The attraction to roads may result in direct effects to mountain plovers such as displacement and vehicle mortalities. Roads may also provide travel corridors for plover predators. Avoidance of important resource areas and implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize potential impacts to mountain plovers from utility and transportation projects.

Land exchange and other disposal methods may negatively impact mountain plovers and their habitats. If lands supporting mountain plovers are exchanged away from the BLM to private landowners, management of these areas for plovers may no longer be possible. However, the BLM rarely conveys properties with high resource value, in particular, those that support special status species. Conversely, if areas occupied by mountain plovers are received by the BLM in exchange for unoccupied lands, the increased focus on mountain plover management could benefit the species.

Increased access to BLM lands may increase the potential for harassment, injury, and mortality from activities that occur on the newly accessible lands. The potential for impacts to mountain plovers may increase where recreational activities occur in suitable plover habitats. Land withdrawal will slightly reduce the number of activities that impact plovers on any withdrawn lands that support suitable plover habitats.

Determination

Implementation of lands and realty management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the low likelihood that suitable plover habitats would be transferred from the BLM administration to an agency or entity that had less protective conservation measures. Land acquisition actions that include suitable mountain plover habitats may benefit the species through implementation of BLM conservation measures that would

otherwise not apply to non-BLM lands. Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize potential impacts to mountain plovers from utility and transportation rights-of way projects (including roads).

Livestock Grazing

Management Actions

The management objective of livestock grazing management is to maintain or improve forage production and range condition as a sustainable resource base for livestock grazing on the public lands while improving wildlife habitat and watershed condition.

Management actions on grazing allotments are prioritized by, and classified into, one of three management categories: maintain (M), improve (I), and custodial (C). Certain areas may be closed to livestock grazing because of conflicts with other resource uses including, but not limited to, harvesting timber sale areas, crucial wildlife or endangered species habitat, developed recreation sites, or education areas. Range management activities include using prescribed fire, vegetation manipulation projects, changing the composition of existing vegetation, controlling noxious weeds, using mechanical or biological vegetative treatments to improve forage production, using heavy equipment, and herbicidal spraying of sagebrush.

Fencing activities authorized by the livestock grazing management program may include fence construction and repair, designing and implementing grazing systems, and building livestock exclosures for important riparian habitat. Water management activities associated with range management may include the development of reservoirs, springs, pipelines, and wells, and providing access to these developments. Lease management activities include conducting monitoring studies, enhancing and improving riparian zones, designating stock trails, managing leases, developing management plans and agreements, and canceling or adjusting livestock driveways.

Permanent increases in available forage are considered for wildlife and watershed protection before additional livestock use is authorized. Livestock management includes converting to new types of livestock; authorizing livestock grazing; and adjusting season of use, distribution, kind, class, and number of livestock. Salt or mineral supplements may be provided to help manage livestock.

Effects Analysis

Historically, the mountain plover evolved in a landscape that was grazed by a variety of native herbivores including bison, pronghorn antelope, and prairie dogs. Concurrent with declines in these native grazers was an increase in grazing by domestic livestock, primarily cattle and sheep. The change in grazers resulted in significant changes in vegetation at fine and broad scales. Native, unregulated grazers resulted in highly variable grazing impacts both temporally and spatially. As a consequence, vegetation composition and structure also varied temporally and spatially. Domestic grazers managed under typical grazing regimes result in relatively uniform grazing intensity leading to vegetation that is temporally and spatially more uniform causing a reduction in the amount of suitable mountain plover breeding habitats. More important, common domestic grazing systems generally result in vegetation patterns with less of the mosaic of bare ground and vegetation structure favored by the plover (Dinsmore 2003).

Managed livestock grazing practices on lands administered by the BLM could benefit mountain plover by maintaining lower vegetation heights in shortgrass prairie habitats unless BLM required stubble height is greater than four inches. Grazing plans that favor habitat features utilized by plovers (e.g., short

vegetation, bare ground, etc.) can be readily implemented within their breeding range. Rotational grazing can be used to create a landscape mosaic of preferred plover habitat such that specific sites do not need to be grazed every year. This tool is already used on a limited basis on the Pawnee National Grassland (Dinsmore 2003).

Determination

Implementation of livestock grazing management **may impact, but is not likely to contribute toward the need for Federal listing** on the mountain plover. This determination is based on the fact that some grazing management practices may result in a reduction of suitable mountain plover habitats. However, livestock grazing under properly managed conditions can be beneficial to the mountain plover and its habitat. Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize potential impacts to mountain plovers from livestock grazing.

Mineral, Energy and Geology and Resources

Management Actions

The lands administered by the Wyoming BLM contain some of the most prolific oil, gas, coal and trona producing areas in the Rocky Mountain region. Mineral development is subject to leasing, location, or sale based on the Federal mineral law (such as the Mineral Leasing Act and amendments) covering that particular commodity. Conditions under which the development of these minerals can occur are determined through land use planning. The eleven RMP planning areas will be open to consideration for exploration, leasing, and development of leasable minerals including oil, gas, coal, oil shale, and geothermal.

The objective of minerals management actions is to make public lands and Federal mineral estate available for orderly and efficient development of mineral resources. BLM's mineral program is divided into salable minerals, leasable minerals and locatable minerals.

Salable Minerals

Deposits of salable minerals are scattered throughout Wyoming. Salable minerals include sand, gravel, sandstone, shale, limestone, dolomite, and granite rock. These materials were historically used for building, road surfacing, and tools. Today, salable minerals are mainly used for maintaining roads and activities associated with the oil and gas industry.

BLM provides sand, gravel, and stone from Federal mineral deposits as necessary to meet the need for Federal, state, and local road construction and maintenance projects in the planning areas. Before issuing contracts or free use permits for salable minerals, the BLM conducts the appropriate environmental analyses including special studies or inventories of cultural resource values, threatened or endangered plant and wildlife species, and other resources. Stipulations or conditions may be included in the terms of the contract to ensure protection of the natural resource and reclamation of the land following project completion. Sand and gravel, scoria, flagstone, moss rock, and other minerals are available for free use or sale, but are subject to conditions and stipulations developed on a case-by-case basis.

Site reclamation is required following any surface-disturbing activity by mining for salable minerals. Reclamation includes removing all surface debris, recontouring, reducing steep slopes, and planting vegetation. All reclamation proposals must conform to state agency requirements and must be approved by the BLM.

Salable minerals are disposed of under the Materials Act of 1947, as amended, and as such are discretionary actions.

Leasable Minerals

Leasable minerals include fluid (oil, gas, geothermal) and solid minerals such as coal, trona, and phosphate. Bentonite and Uranium is also leasable on acquired lands.

Current use of coal is primarily for electric generation. Coal in Wyoming is most generally extracted using surface mining methods although in the past some coal was mined underground. The underground mining method is proposed for some future operations. Surface mining requires a Federal coal lease from the BLM, mining permits from the State, and mine plans approved by the U.S.D.I. Office of Surface Mining (OSM). Surface mining involves the use of large equipment such as draglines, shovels, haul trucks, etc. Small drill rigs are used for exploration to determine the location, thickness, and obtain cores (for determining quality). Extracting coal using surface mining methods often results in large areas of surface disturbance from road construction, removal of topsoil and overburden, and stock piling of these materials. Once an area is mined out, reclamation begins and includes recontouring as close to the original landscape as possible. The reclamation includes reconstruction of drainages and reseeding and monitoring to assure the habitat is useable. Coal is leased under the Mineral Leasing Act of 1920 and the Federal Coal Leasing Amendments Act of 1976.

Current uses of trona include baking soda, in paints, glass, toothpaste, soaps, ceramic tiles, porcelain fixtures, paper, water softeners and pharmaceuticals. Wyoming is the largest producer of trona in this country and has the largest known reserve of trona in the world. Trona is generally mined underground with the long wall mining method. Surface facilities are generally processing plants, offices, and maintenance buildings along with associated roads.

Current uses of uranium are as a nuclear fuel for generation of electricity, nuclear explosive, in medicine, agriculture and industry as radiation for diagnostic tools, to detect welding problems, in the manufacture of steel products, or used to reduce the spoilage of certain foods. Uranium is generally categorized as a locatable but becomes leasable on acquired lands. Surface facilities include processing plants, equipment maintenance buildings and offices.

Leasable bentonite also occurs on acquired lands. Bentonite is surface-mined with shovels, haul trucks etc. Drilling is used to locate the bentonite. Large areas of surface disturbance occur through removal of the overburden, overburden stockpiles, surface facilities and roads. Surface facilities include processing plants, equipment maintenance buildings and offices.

Fluid leasable minerals include oil, gas, and geothermal steam. Leasing of oil and gas resources is under the authority of the Mineral Leasing Act of 1920 as amended. Leasing is administered by the BLM through a competitive and non-competitive system. BLM receives nominations of lands to be put up for sale at the bimonthly competitive oil and gas sales. These nominations are gathered together into a parcel list and are sent to the respective field offices for the attachment of stipulations. These stipulations are derived from the Land Use Plan. The parcel list is returned to the state office and once verified are put together into the Notice of competitive oil and gas sale booklet. This Notice must be posted for the public 45 days before the lease sale is held. Once the parcel is sold, it is then issued into a lease.

Initial exploration for oil and gas resources is often conducted using geophysical methods. Geophysical exploration involves the use of ATVs and vehicles to lay the geophones, drill the shot holes for charges, or as "thumpers" to create the sound wave instead of using charges and then the removal of the geophones

and reclamation of shot holes if used. Exploration for oil and gas (including coal bed natural gas) may also include the drilling of one or more wells to test for the reservoir and its productive viability. During the exploration phase of drilling, surface disturbing activities include the construction of roads, well pads, reserve pits, and other facilities.

Development of oil and gas fields includes construction of the same types of facilities used during exploration, but in addition it may be necessary to obtain Federal rights of ways for product pipelines and power lines. Other surface uses associated with oil and gas development include construction of storage tank batteries and facilities to separate oil, gas and water. Compressor engines (can be gas powered or electric) may be required to move gas to a pipeline, and diesel, gas, or electric pumps and other related equipment may be needed to lift the oil, gas, or water from the well to the surface. Generally, there is an average of 3 acres for each drill site, 1 mile of road and 1 mile of pipeline for each drill site. This can vary widely with each project. Directional drilling requires a bigger pad than one well. Size is dependent on the number of wells drilled from each pad.

Water is often produced concurrently with oil and gas production and disposal methods can range from subsurface re-injection to direct surface discharge to discharge into a containment pond or pit. Some fields may have large volumes of water or very little water. Water that cannot be discharged to the surface because of its chemical makeup may be treated before surface discharge or may be reinjected. Roads may be two track unimproved roads to crown and ditched roads designed by an engineer. One day to over a month may be required to drill the well depending on the type of well (vertical or directional), depth and types of rocks encountered. Reclamation involves reseeding and the recontouring of unneeded roads and unneeded portions of the well pads.

Geothermal resources are available for exploration, development, and production and are subject to the same surface disturbing and other restrictions applied to oil and gas exploration, development and production. Similar to oil and gas leasing, the BLM administers geothermal leases through a competitive and non-competitive system. The Geothermal Steam Act of 1970 authorizes leasing. There are currently no geothermal leases authorized in Wyoming.

Locatable Minerals

Locatable metallic minerals include silver, gold, platinum, cobalt, and other precious and base minerals. Minerals are locatable under the 1872 Mining Law. Most public lands are open to location with the exception of withdrawn lands. The Mining Law of 1872 sets the requirements for lode claims, placer claims, and mill sites as well as discovery, location, annual filings, assessment work, and mineral examinations to establish validity.

Effects Analysis

Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize direct effects to nesting mountain plovers and their occupied habitats. Projects implemented outside of the typical nesting period would be less likely to harm individual plovers because post breeding plovers typically flock and leave nesting grounds by mid-July (Knopf 1996). Surface disturbing activities occurring outside of the nesting period would have the potential to damage or destroy potentially suitable mountain plover nesting habitats. In most instances potential surface disturbance effects would be highly localized and result in the alteration of relatively small proportion of the available mountain plover habitat in any locale. Surface mining of coal or other minerals would totally remove mountain plover for the life of the active mine. Reclaimed surface coal mines could possibly restore mountain plover habitat.

Due to the current highly amplified natural gas development in the Buffalo RMP planning area, impacts to the mountain plover on private lands with Federal mineral estate are greatly increasing. Because the mountain plover is not a protected species under the ESA, surface disturbances from natural gas development on private land surface ownership with Federal mineral estate cannot be regulated by the BLM to protect mountain plovers. BLM approves the application for permit to drill (APD), authorizing the natural gas development action in these instances. The majority of the impacts to mountain plovers from natural gas development in the Buffalo RMP planning area occurs from these activities. The BLM generally requests protections for the mountain plover from these activities, but cannot impose them and it is therefore thought that these actions are on a broad scale, contributing to the need for Federal listing protection of the mountain plover. Protections for mountain plovers and their habitats from activities occurring on lands with both Federal surface and mineral ownership are in place and natural gas development activities occurring on those lands are not contributing to the need for Federal listing protection of the mountain plover.

Determination

Implementation of geology, energy and mineral resource management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover for all RMPs except the Bufffalo RMP (1985). This determination is based on the minimization of direct effects to the plover through implementation of the conservation strategies (section 4.0), the Mountain Plover Project Screen (BLM et al. 2004), and the limited potential to damage or destroy suitable, but unoccupied habitats.

Implementation of geology, energy and mineral resource management **may impact and is likely to contribute toward the need for Federal listing** of the mountain plover within the Buffalo RMP (1985) planning area. This determination is based on the limited ability for the BLM to provide minimization of direct effects of natural gas development to the plover through implementation of the conservation strategies (section 4.0), the Mountain Plover Project Screen (BLM et al. 2004), and the potential to damage or destroy suitable occupied and unoccupied mountain plover habitat on private land surface ownership with Federal mineral estate.

Off-Highway Vehicles

Management Actions

The objective of off-highway vehicle (OHV) management is to offer outdoor recreational opportunities on BLM-administered public land while providing for resource protection, visitor services, and the health and safety of public land visitors. Using motorized OHVs requires no fee and no permit, but use is restricted depending on whether the area has been designated as closed, limited, or open.

Off-highway vehicle management designates closed, limited, or open areas for OHV use, posts signs, maps, or brochures, permits OHV rallies, cross-country races, and outings, monitors OHV use, and performs necessary tasks requiring OHV use. Off-highway vehicle use (including over-the-snow vehicles) on BLM-administered lands is limited to existing roads and trails. Some areas are closed to OHV use.

Until signing has occurred, OHV use in "limited" areas will only be permitted on existing roads and vehicle routes. OHV travel will be prohibited on wet soils and on slopes greater than 25 percent if damage to vegetation, soils, or water quality would result. Seasonal restrictions may be applied in critical wildlife habitats as needed.

Effects Analysis

Known nesting locations and high quality nesting habitats would not be subject to OHV use. It is possible that other areas open to OHV use may support nesting mountain plovers and suitable nesting habitats. Because of this potential overlap, it is possible for authorized OHV use to harm nesting mountain plovers and alter suitable nesting habitats. Two-track roads with low use levels may be attractive to foraging plovers. The attraction to roads may result in direct effects to mountain plovers such as displacement and plover mortalities. Roads may also provide travel corridors for plover predators. Based on the acreage of suitable nesting habitat under BLM jurisdiction compared to the limited areas approved for OHV use, the likelihood of these effects resulting in population-wide reductions are low.

Determination

Implementation of OHV management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the low potential for approved OHV use to directly affect the plover and its habitats combined with the low likelihood that such effects would impact the current population status. Implementation of the conservation strategies (section 4.0), and the Mountain Plover Project Screen (BLM et al. 2004) would minimize potential impacts to mountain plovers from OHV management.

Paleontological Resources

Management Actions

The objective of paleontological resources management is to manage paleontological resources that are part of the BLM-administered public land surface estate for their informational, educational, scientific, public, and recreational uses.

Using the land for scientific purposes, such as paleontological exploration, is authorized through a permit system. Fossils are part of the surface estate, such that whoever owns the surface consequently owns the fossils. A paleontological collecting permit is required before collecting any fossil vertebrates, significant fossil invertebrates, and plants on BLM-administered public lands.

Potential effects on paleontological resources found on BLM-administered public lands will be considered in site-specific environmental analyses before authorizing surface disturbance. Site-specific inventories will be required where significant fossil resources are known or are anticipated to occur. Hobby collection of invertebrate fossils and petrified wood are allowed except in specified areas. The closing of BLM-administered public lands or restricting uses to protect paleontological resources are evaluated on a case-by-case basis.

Effects Analysis

Inventories for paleontological resources conducted during the breeding season may result in the temporary displacement of mountain plovers from nesting and/or foraging areas. Displacement of nesting adults from nests or away from pre-fledging chicks may result in loss of eggs or chicks to chilling, overheating, or predation. Excavation of paleontological sites may result in loss of suitable plover habitats; however, the limited extent of most excavations suggests that this impact would have minimal effect on mountain plovers on a landscape scale. Closure or restrictions to protect paleontological resources may indirectly benefit plovers by preventing disturbance to individuals and habitats that may otherwise occur.

Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize direct effects to nesting mountain plovers and their occupied habitats when soil disturbing investigations are required. Projects implemented outside of the typical nesting period would be less likely to harm individual plovers, because post breeding plovers typically flock and leave nesting grounds by mid-July (Knopf 1996). Surface disturbing activities occurring outside of the nesting period would have the potential to damage or destroy potentially suitable mountain plover nesting habitats. In most instances potential surface disturbance effects would be highly localized and result in the alteration of relatively small proportion of the available mountain plover habitat in any locale.

Determination

Implementation of paleontological resources management actions **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the minimization of direct effects to the plover through implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) and the highly localized and relatively minute alteration of available mountain plover habitat.

Recreation Resources

Management Actions

The objective of recreation resources management is to offer outdoor recreational opportunities on lands administered by BLM while providing for resource protection, visitor services, and the health and safety of public land visitors.

Recreation management includes allowing recreational access and use by the public, developing recreational areas, imposing restrictions, acquiring recreational access, and assessing effects of recreational use to the environment. The BLM monitors recreational use, develops management plans, and evaluates and updates recreational potential.

Some examples of recreational activities allowed by the BLM include hiking, hunting, mountain biking, boating, fishing, OHV use (including snowmobiles), horseback riding, and camping. Casual use of BLM-administered public land for hiking, bicycling, hunting, fishing, and similar uses are allowed without charge. Large recreational events may include organized group hikes, motocross competitions, or horse endurance rides. The BLM develops recreational and camping sites. This development includes maintaining or developing recreational sites and facilities, developing campgrounds, providing fishing and floating opportunities, maintaining developed and undeveloped recreation sites, adding developments as opportunities arise, adding interpretive markers, and constructing roads and interpretive sites.

The recreation program may place boundary signs, identify hazards on rivers, restrict recreational uses, limit motorized vehicles to existing trails, designate road use and recreation areas, require facilities to blend with the natural environment, and conduct field inventories. Recreation areas may impose specific restrictions to protect other important resources. Development and enforcement of stipulations and protective measures include designating OHV use, enforcing recreation-oriented regulations, patrolling high-use areas, and contacting users in the field.

Effects Analysis

Because of the occurrence of potentially suitable nesting habitats on lands under BLM jurisdiction, it is likely that existing and proposed recreational opportunities may impact these habitats. Impacts are most likely to be physical damage to nesting habitats and disruption of plover behavior caused by pedestrian and vehicle occurrence in occupied habitats. Most dispersed recreation occurs during the fall hunting seasons when plovers are absent. In addition, most recreationists prefer the mountains and forests, which are non-suitable mountain plover habitat.

Determination

Implementation of recreation resources management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the low potential for approved recreational use to directly affect the plover and its habitats combined with the low likelihood that such effects would impact the current population status. Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize potential impacts to mountain plovers from recreation resource management activities and projects.

Riparian Areas

Management Actions

The objective for riparian areas management is to maintain, improve, or restore riparian value to enhance forage, habitat, and stream quality. Priority for riparian areas management will be given to those areas identified as cutthroat trout habitat. Laws and guidelines followed during riparian management include Executive Orders 11990 (wetland) and 11988 (floodplain), and section 404 of the Clean Water Act.

Riparian areas management is an integral part of all resources and related management programs. Management actions may include reductions in livestock numbers, adjustments in grazing distribution patterns, fencing, herding, and livestock conversions. Those activities that affect or are affected by riparian values will account for the riparian areas management objectives and direction. Resource values and uses that affect or are affected by riparian values include wildlife and fisheries habitat, forest resources, livestock grazing, OHV use, visual resources, cultural and historical resources, minerals exploration and development, lands and realty activities, watershed and soils resources, recreation uses, fire management, and access.

Effects Analysis

Management efforts pertaining to riparian habitat would not impact the mountain plover or its habitats because this species nests and forages exclusively in upland grassland and shrubland habitats away from riparian areas. Mountain plovers actually avoid riparian habitats and the resulting competition from other bird species such as killdeers.

Determination

Implementation of riparian areas management would have **no impact** on the mountain plover. This determination is based on the absence of riparian management actions occurring in preferred grassland and shrubland habitats and the avoidance of riparian areas by mountain plovers.

Sensitive Plants

Management Decisions

The objective for sensitive plants management is to maintain and enhance known populations of sensitive plant species within BLM-administered public lands. As habitats or sites for any future listed species are identified within a resource area, protective measures will be developed in consultation with the USFWS.

The known populations of sensitive plant species will be protected from disturbance by maintaining or establishing fencing around the populations, and by intensively managing surface disturbance in adjacent areas that could affect the populations. Any proposed surface disturbance will be examined on a case-by-case basis to determine potential adverse effects and appropriate mitigation to minimize those effects. Developments, uses, and facilities will be managed temporally and spatially to avoid damage to the sensitive plant species.

Effects Analysis

The mountain plover and its preferred nesting and foraging habitats may benefit from sensitive plant species management efforts when these efforts protect habitats that may also be suitable to the plover. The majority of sensitive plants management actions are not likely to occur in mountain plover habitat, because of its preference for areas of short grazed grasses, where sensitive plants are not typically found. Sensitive plant species management actions are not expected to directly harm plovers or damage preferred habitats.

Determination

Implementation of sensitive plant species management **may impact, but is not likely to contribute toward the need for Federal listing** for the mountain plover. This determination is based on the low likelihood for sensitive plants management actions to occur in suitable mountain plover habitat and the potential for sensitive species management to **benefit** and protect habitats that may be suitable to the mountain plover. Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize potential impacts to mountain plovers from sensitive plants management if surface disturbing activities to protect plants were to take place.

Soils Management

Management Actions

The objective for soil resources management is to maintain soil cover and productivity and improve areas where soil productivity may be below potential on surface lands administered by BLM.

Activities associated with soil mapping/sampling may include surveying, core drilling, use of pick-up truck mounted soil augers and core samplers (1 ½" to 2" in diameter) and back-hoes (usually around 12-24" in width and pits may be up to 6' deep) for digging soil characterization pits and trenches, using hand

held shovels to dig holes or pits, and associated human and vehicle disturbances. These trenches are backfilled and revegetated/reseeded when surveys are complete. Disturbances are usually very small of short duration in nature and will reclaim to the native terrain/vegetation quickly. Surface soil erosion studies may also be conduced. These soil resource related activities in the planning area are mainly in support of other programs. Soil mapping and identification may require the digging of trenches to identify and measure soil horizons below the surface. Formal soil surveys are conducted under a contract with the Natural Resource Conservation Service (NRCS).

Other activities associated with soil resources may include reclamation of abandoned mine lands (AML) and open shafts, removal of waste rock in floodplains or streams, or cleanup of tailings. These reclamation programs are covered under the hazardous materials section of this document.

To keep soil from eroding and to protect the water quality, timber harvest activities will be limited to slopes of 45% or less. OHV travel will be prohibited on wet soils and on slopes greater than 25% if unnecessary damage to vegetation, soils, or water quality would result. Roads and trails will be closed and reclaimed if they are heavily eroded, washed out, or if access roads in better condition are available. No surface disturbance or occupancy will be allowed in areas susceptible to severe erosion between March 1 and June 15.

Effects Analysis

Soil resources management would have minimal impact on mountain plovers and their habitat and the secondary benefits from improving habitats through revegetation, reseeding, or other rehabilitation would be beneficial. This program prohibits soil-damaging activities when soils are moist. Protective measures for soils, should they occur in or near prairie dog complexes, would have a beneficial impact on mountain plovers and could be positive by preventing compaction and rutting from surface-disturbing activities.

Determination

Implementation of soil management actions **may impact, but is not likely to contribute toward the need for Federal listing** for the mountain plover. This determination is based on the fact that the actions associated with soils management are of short duration, will be subject to surface disturbance conservation measures and will provide an overall secondary benefit to the soils and vegetation on which mountain plovers occur. Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize potential impacts to mountain plovers from soil management.

Surface Disturbance Restriction Decisions

Management Actions

Surface disturbance restrictions are necessary to protect certain sensitive resources and areas from adverse effects of surface disturbance and human presence, and include the various management actions developed in and analyzed for the approved RMP. These restrictions apply to all types of activities involving surface disturbance or human presence impacts, and are applied in accordance with the guidelines described in the Wyoming BLM Standard Mitigation Guidelines for Surface-Disturbing Activities (SDA Guidelines). The SDA Guidelines include, where applicable, proposals for waiver, exception, or modification, based on analysis for individual actions. This would allow for situations

where a surface-disturbing activity may actually benefit sensitive resources, and allow for those occasions when analysis determines that an activity will not affect those resources.

The SDA Guidelines will be used, as appropriate, to guide development in all programs where surface disturbance occurs and where the objectives of the RMP include the protection of important resource values. On a case-by-case basis, activities will be conditioned by any one or more of the mitigations in the SDA Guidelines to avoid or minimize impacts to other important resource values and sensitive areas. Use restrictions (e.g., dates and distances) may be made more or less stringent, depending on the needs of specific situations. The restrictions identified under the various resource programs are complementary to the standards in the SDA Guidelines and are not all-inclusive. They represent actual requirements applicable to specific circumstances, and examples of requirements that will be considered and applied, if necessary. Surface-disturbing activities may be further restricted as necessary.

The mitigations identified in a particular RMP serve to protect affected resources, not to unnecessarily restrict activities. The RMP provides the flexibility for modifications or exceptions to restrictions in specific circumstances where a restriction is determined not to apply or is not needed to achieve a desired objective.

Surface disturbance is characterized by the removal of vegetative cover and soil materials. Where actual excavation does not occur, activities may be allowed to occur with less stringent limitations provided that the objectives and purpose for the surface disturbance restrictions are met. Examples of less stringent application of the SDA Guidelines would be timber harvesting within 500 feet of streams or riparian areas and on slopes greater than 25 percent. This would apply to those timber harvest activities, such as tree cutting, skidding, and slash disposal, which do not fully remove vegetative cover and soil materials. In the past, allowing these activities with a 100-foot streamside buffer distance and on slopes greater than 25 percent did not produce detrimental effects. However, road construction or staging/loading areas for logging equipment would not meet the less stringent definition and would be subject to the standard requirements of 500 feet and 25 percent slope.

The mitigations prescribed for Federal mineral development on split-estate lands (Federal minerals beneath a non-Federal surface) apply only to the development of the Federal minerals. These mitigations do not dictate the surface owner's management of their lands. The mitigations present restrictions on only those surface activities conducted for purposes of developing the Federal minerals and that are permitted, licensed, or otherwise approved by the BLM.

When the BLM considers issuing a mineral lease, the agency has a statutory responsibility under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts of the Federal undertaking. It also has the statutory authority under the Mineral Leasing Act (MLA) of 1920, the Mineral Leasing Act for Acquired Lands (MLAAL), and the Federal Land Policy and Management Act (FLPMA) of 1976 to take reasonable measures to avoid or minimize adverse environmental impacts that may result from Federally authorized mineral lease activities. This authority exists regardless of whether or not the surface is Federally owned.

The MLA, the MLAAL, and the FLPMA are not the only statutes that establish such authority. Other statutes that may be applicable include the Clean Water Act, the Clean Air Act, the National Historic Preservation Act, the Endangered Species Act of 1973 (ESA), the Federal Coal Leasing Amendments Act of 1976, and the Surface Mining Control and Reclamation Act of 1977. Moreover, the recently enacted Federal Onshore Oil and Gas Leasing Reform Act of 1987 specifically requires the BLM to regulate surface disturbance and reclamation on all leases.

Effects Analysis

Implementation of the surface disturbance restriction decisions would minimize direct effects to nesting mountain plovers and their occupied habitats by restricting surface disturbing activities. The Mountain Plover Project Screen (BLM et al. 2004) provides a framework to implement surface disturbance restrictions for mountain plover. Potential benefits would include conservation of potentially suitable habitats and minimization of actions that would damage suitable habitats.

Determination

Implementation of surface disturbance restriction decisions **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the minimization of direct effects to the plover through implementation of the surface disturbance restriction decisions. The Mountain Plover Project Screen (BLM et al. 2004) and Wyoming BLM SDA Guidelines provide a framework to implement surface disturbance restrictions for mountain plover and primarily benefit mountain plovers and their habitat. However, the surface disturbance restrictions may not provide protection to all suitable, but unoccupied mountain plover habitats.

Threatened, Endangered, and Candidate Species Protection

Management Actions

The management objectives of threatened, endangered and candidate species protection are to maintain biological diversity of plant and animal species by supporting Wyoming Game and Fish Department (WGFD) strategic plan population objective levels to the extent practical and consistent with BLM multiple-use management requirements. It maintains and improves forage production and quality of rangelands, fisheries, and wildlife habitat and provides habitat for threatened and endangered and special status plant and animal species on all public lands in compliance with the ESA and approved recovery plans.

Although only USFWS can list a species as endangered, threatened, or a candidate for listing, the ESA requires BLM to protect known populations of threatened or endangered species. The BLM's threatened and endangered species management activities include protecting habitat and known populations, enforcing timing stipulations, conducting surveys, and closing known locations of sensitive populations or habitat to surface-disturbing activities.

Effects Analysis

Prior to the implementation of any improvement projects that involve disturbing potentially suitably plover nesting habitats, the Mountain Plover Project Screen (BLM et al. 2004) and conservation strategies (section 4.0) would be implemented in order to minimize direct effects to nesting mountain plovers and their occupied habitats. Projects implemented outside of the typical nesting period would be less likely to harm individual plovers, because post breeding plovers typically flock and leave nesting grounds by mid-July (Knopf 1996). Surface disturbing activities occurring outside of the nesting period would have the potential to damage or destroy potentially suitable mountain plover nesting habitats.

Improvement projects may result in temporary damage or destruction of non-occupied mountain plover habitats. However, it is likely that these same projects would result in lasting improvements to conditions that would benefit the mountain plover

Determination

Implementation of threatened, endangered and candidate species management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the potential for habitat improvement projects to have a temporary impact on suitable mountain plover habitats. Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would minimize potential impacts to mountain plovers from threatened, endangered, and candidate species management actions.

Vegetation Resources

Management Actions

The objectives of vegetation resource management are to maintain or improve the diversity of plant communities to support timber production, livestock needs, wildlife habitat, watershed protection, and acceptable visual resources. It also enhances essential and important habitats for special-status plants species on BLM-administered public land surface and prevents special-status plant species from the need to be listed as threatened and endangered; and to reduce the spread of noxious weeds.

Vegetation treatments, including timber harvesting and sagebrush spraying or burning, will be designed to meet overall resource management objectives. Cooperative integrated weed control programs implement work on adjoining deeded and state lands in cooperation with county weed and pest districts. The three types of control used by the BLM on public lands are chemical, biological, and mechanical. Biological control can involve the use of weevils, beetles, or goats. This method may be used in cooperation with mechanical control (e.g., dozing, cutting, chopping). Sagebrush control measures are also implemented by the BLM. These control methods may be chemical or mechanical. Fire is used to improve range forage production, wildlife habitat, timber stands, sale debris disposal, and to reduce hazardous fuel buildup. Noxious weed control is typically implemented along rights-of-way.

Trees will be planted on timber harvest areas that fail to regenerate naturally in order to achieve minimum stocking levels within five years after completing harvest and rehabilitation. Pre-commercial tree thinning will be initiated on overstocked seedling- and sapling-size stands. Temporary use of heavy equipment may be associated with these authorized activities.

If herbicides are proposed for use, minimum-toxicity herbicides should be used with appropriate buffer zones along streams, rivers, lakes, and riparian areas, including those along ephemeral and intermittent streams. Only Federally-approved pesticides and biological controls are used. Local restrictions within each county are also followed. Projects that may affect threatened or endangered plants or animals will be postponed or modified to protect these species. Pesticide Use Proposals (PUPs) and Biological Use Proposals (BUPs) are developed cooperatively with the County Weed and Pest Districts and the BLM. All PUPs and BUPs are reviewed by the state Noxious Weed Coordinator and approved by the BLM Associate State Director.

Effects Analysis

Prior to the implementation of any vegetation improvement project that involved disturbing potentially suitably plover nesting habitats, the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would be implemented in order to minimize direct effects to nesting mountain plovers and their occupied habitats. Projects implemented outside of the typical nesting period would be less likely to harm individual plovers because post breeding plovers typically flock and leave nesting

grounds by mid-July (Knopf 1996). Surface disturbing activities occurring outside of the nesting period would have the potential to damage or destroy potentially suitable mountain plover nesting habitats.

The majority of vegetation management actions, including timber harvesting, tree planting, and sagebrush removal, are not likely to occur in mountain plover habitat because of its preference for areas of short grazed grasses, where these actions are not going to occur.

Projects involving herbicide, pesticide, and biological use applications may result in temporary damage or destruction of non-occupied mountain plover habitats or a reduction in mountain plover prey items. The impacts of agricultural pesticides were once thought to be a threat to mountain plovers (Knopf 1996). Recent work found low levels of exposure to organophosphates in plovers wintering in California, although the results did not conclusively establish this as a serious threat and other chemicals may be impacting plovers (Dinsmore 2003). Although research of this topic is lacking for plovers, it is worth acknowledging that the plover can come into contact with numerous pesticides used to control insects, and that some of these may have unknown negative consequences for the plover. One example is the use of deltamethrin to control fleas that transmit sylvatic plague in prairie dogs. Active prairie dog burrows are treated with deltamethrin with the intent of protecting prairie dogs from plague. However, deltamethrin is a long-lasting (up to eight months) insecticide and kills several important prey items of the plover (e.g., beetles). Deltamethrin probably does not kill plovers directly, but it may have negative impacts on some of their principal food items. However, the County Weed and Pest Districts and the BLM must first approve projects involving the use of herbicides, pesticides, or biological use applications. In addition, it is likely that these same projects would result in lasting improvements to conditions that would benefit the mountain plover.

Determination

Implementation of vegetation resources management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the fact that the majority of vegetation management actions, including timber harvesting, tree planting, and sagebrush removal, are not likely to occur in mountain plover habitat because of its preference for areas of short grazed grasses, where these actions are not going to occur. Some improvement projects, involving herbicide, pesticide, and biological use applications, may have an impact on potentially suitable mountain plover habitats or prey items. However, only Federally-approved pesticides and biological controls are used. Local restrictions within each county are also followed. Implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) will also minimize any impacts to the mountain plover.

Visual Resources

Management Actions

The objectives of visual resources management are to maintain or improve scenic values and visual quality, and establish visual resources management priorities in conjunction with other resource values. Visual resources are managed in accordance with objectives for visual resources management (VRM) classes that have been assigned to each FO. Visual resource classification inventories have been developed for some, but not all, of Wyoming.

No activity or occupancy is allowed within 200 feet of the edge of state and Federal highways. To improve visual resources, the BLM designs facilities to blend in with the surroundings, reclaims watershed projects and water wells, regulates discharge of produced water, and restricts activities that

might degrade visual resources. Facilities or structures such as power lines, oil wells, and storage tanks are required to be screened, painted, and designed to blend with the surrounding landscape, except where safety indicates otherwise. Any facilities or structures proposed in or near wilderness study areas will be designed so as not to impair wilderness suitability.

Effects Analysis

Visual resources management would not have any direct effects to the mountain plover or its habitats. The result of visual resources management may benefit the species by preserving and minimizing impacts to landscapes and habitats. However, much of the suitable mountain plover habitat across the state falls into VRM Class IV, which is the least restrictive class. The exclusion of some activities and structures from designated view sheds may have a secondary positive effect of limiting disturbance of habitats that may be suitable for mountain plovers.

Determination

Implementation of visual resources management actions **may impact, but is not likely to contribute toward the need for Federal listing** on the mountain plover. This determination is based on the potential for visual resources management to provide benefits to habitats that may support the mountain plover due to limiting activities in particular viewsheds that mountain plovers inhabit and that implementation of visual resources management involves no actual ground disturbing activities and therefore no anticipated disturbance to mountain plover habitat and no increased human presence.

Watershed and Water Resources

Management Actions

The objectives of watershed and water resources management are to maintain or improve surface and groundwater quality consistent with existing and anticipated uses and applicable state and Federal water quality standards and to provide for availability of water to facilitate authorized uses. This program also aims to minimize harmful consequences of erosion and surface runoff from BLM-administered public land.

Passing of the Water Resources Research Act, Water Resources Planning Act, and the Water Quality Act of 1965 allowed the BLM to expand its water resources program and increased cooperation with soil conservation districts. Activities authorized under water resources management may include implementation of watershed plans, identification of heavy sediment loads, monitoring and treating soil erosion, evaluating and restricting surface development, and monitoring water quality.

No surface disturbance will be allowed within 500 feet of any spring, reservoir, water well, or perennial stream unless waived by the authorized officer. Pollution prevention plans are developed for actions that qualify under the Wyoming Storm Water Discharge Program to reduce the amount of non-point pollution entering waterways. The rights to water-related projects on public lands will be filed with the Wyoming state engineer's office in order to obtain valid water rights.

Effects Analysis

Watershed and water resources management actions are not expected to directly affect the mountain plover or its habitats. Direct effects to mountain plovers are not expected from watershed or water resource management actions because these actions are not likely to occur in or near suitable nesting

habitats. In rare exceptions, water management projects may disturb potentially suitable habitats when activities occur in upland habitats adjacent to water management projects. Rivers with wide floodplains, particularly prairie rivers such as the Powder River, may provide suitable habitat. These impacts are not expected to be important to the species because of their localized nature and their relatively small size compared to the availability of otherwise suitable habitats.

Determination

Implementation of watershed and water resources management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the very low likelihood that actions would occur in mountain plover habitat and implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) will also minimize impacts to the mountain plover from watershed and water resources management actions.

Wild and Scenic Rivers

Management Actions

The objectives of wild and scenic rivers management for public lands administered by the BLM that meet the wild and scenic rivers suitability factors is to maintain or enhance their outstandingly remarkable values and wild and scenic rivers (WSR) classifications until Congress considers them for possible designation. BLM wild and scenic rivers management includes studying segments of the river for potential classification by Congress. The suitable determination is based on the uniqueness of the diverse land resources and their regional and national significance, making them worthy of any future consideration for addition to the WSR system.

Effects Analysis

Actions associated with wild and scenic rivers on lands administered by the BLM would not likely impact the mountain plover because these actions would be localized around rivers and not in potentially suitable mountain plover nesting habitats.

Determination

Implementation of wild and scenic river management actions will have **no impact** on the mountain plover. This determination is based on the lack of any mountain plover habitat within or near any WSR segment precluding direct or indirect effects to the plover or its habitat.

Wild Horse

Management Actions

The objectives of wild horse management are to maintain a viable herd that will preserve the free-roaming nature of wild horses in a thriving ecological balance and to provide opportunity for the public to view them. The FLPMA amended the Wild and Free Roaming Horse and Burro Act to authorize the use of helicopters in horse and burro roundups. Wild horse and burro populations have more than tripled since passage of the Wild and Free Roaming Horse and Burro Act in 1971. Wild horse and burro numbers on BLM lands in Wyoming were estimated at 37,000 in 2004; this compares with and horse numbers on BLM lands in the west that are estimated at more than 60,000 compared to 17,000 in the late 1960s.

The Wild Horse Program herds, corrals, transports, monitors, and rounds up horses for wild horse management. Herds are monitored by airplane census and counted each year. Helicopters may also be used to round up wild horses. The construction of corrals and capture facilities could cause impacts through ground disturbance and concentrated human presence. Horse round-up generally causes concentrated compaction by horse hooves in corral and load-out areas. Placement of capture corrals and capture facilities outside of special status species habitat is important as the concentrated disturbance could potentially be an adverse affect to these species and/or their habitats. Seven of the RMPs have active WHMAs that have the possibility of impacting mountain plover habitat.

Land use plans are used to plan wild horse management. The BLM decides how many horses to allow in a certain area. This is termed the approximate management level and the BLM can adjust horse numbers as needed. Issues such as carrying capacity, trends in utilization, and public input are considered. The BLM's wild horse management specialists coordinate with wildlife biologists and archaeologists to ensure that wild horse management will not cause adverse impacts to biological or cultural resources. No wild horse herd management areas occur in the Kemmerer or Pinedale FOs, although both FOs have wild horse herd areas that are not currently being managed for wild horses.

Effects Analysis

Wild horses occur in mountain plover habitat, however, because of their roaming habit, their impact on mountain plovers is minimal. Mountain plovers and wild horses are compatible on the landscape. Wild horse management actions, particularly wild horse gathers, have the potential to injure or kill mountain plovers, particularly when conducted during the nesting period. There is the possibility that, if wing fences and corrals for a gather were set up in or near mountain plover habitat, there could be some temporary impacts such as trampling of vegetation. Herding and temporary corralling may temporarily disturb potentially suitable mountain plover habitats. It is also likely that these same actions may result in trampled vegetation and create bare areas that may be suitable to nesting mountain plovers which would benefit mountain plovers. When conducted outside the nesting periods, it is likely that birds will be fledged and capable of avoiding management actions. The effects to vegetation, positive and negative, would not likely be important to the plover because of their localized nature and relative small size compared to the availability of potentially suitable plover habitat under BLM jurisdiction.

Determination

Implementation of wild horse management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the limited potential for management actions to harm mountain plovers and temporarily impact potentially suitable mountain plover habitats. However, the effects to suitable mountain plover habitats are expected to be minimal based on their localized nature and relative small size compared to the availability of suitable plover habitat under BLM jurisdiction and are very likely to be beneficial by creating mountain plover habitat.

Wilderness Resources

Management Actions

All WSAs are managed under the Interim Management Policy (IMP) until Congress issues management guidelines. There are three categories of public lands to which the IMP applies: (1) WSAs identified by the wilderness review required by Section 603 of the FLPMA, (2) legislative WSAs (i.e., WSAs established by Congress, of which there are none administered by the BLM in Wyoming), and (3) WSAs identified through the land-use planning process in Section 202 of the FLPMA. The BLM ensure that

proposed actions are consistent with land use plans in effect for WSAs. Absence of roads, total area extent, naturalness, solitude, or a primitive and unconfined type of recreation; and other ecological, geological, educational, scenic, or historical features may be considered wilderness values. Activities associated with this program may include inventories to identify wilderness areas, public involvement with the wilderness study process, authorization of mining claims under unique circumstances, or evaluations of proposed actions to determine potential impacts to known or potential wilderness values.

Operators prepare a Plan of Operation before beginning any mining exploration. The plan identifies the mining strategy and attempts to minimize environmental impacts. Discovery work for WSAs under Section 603 must be done to non-impairment standards. Only "unnecessary and undue degradation" requirements apply to Section 202 WSAs.

A mining claim may be staked at any time in an existing WSA. NEPA analysis is required, however, before any activity is authorized in a WSA. Environmental Assessments (EAs) or Environmental Impact Statements (EISs) are prepared to determine if a proposal meets non-impairment criteria. Categorical exclusions to eliminate this analytical process for uses and facilities on lands under wilderness review are not allowed.

The designation of WSA status is simply a designation, and tempers or stipulates from a WSA viewpoint, specific protections or management of other BLM authorized actions. WSA classifications, in and of themselves, do not place on-the-ground projects or ground disturbing activities. Generally, WSA status is a beneficial impact on wildlife and plant species.

Effects Analysis

There are 42 WSAs in Wyoming. Mountain plover habitat occurs within these WSAs, but a specific inventory to determine habitat use by plovers has not been conducted. Mountain plover probability of occurrence has been modeled (Map 1), but specific use by mountain plovers within individual WSAs is unknown. The designation and management of WSAs would be beneficial in that they would protect mountain plover habitat from most surface disturbing activities. Most wilderness areas likely have very limited potential for mountain plovers because wilderness surveys are typically located in more rugged terrain. Surface disturbing activities would be restricted in WSAs.

Determination

Implementation of wilderness resources management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the minimization of direct effects to the plover within WSAs through implementation of the Interim Management Policy (IMP) protections until Congress makes a determination to either drop or add a WSA to the Wilderness System. The restriction of surface disturbing activities within WSAs would likely be beneficial to mountain plovers and their habitat.

Wildlife Habitat

Management Actions

BLM has identified four primary objectives for the management of wildlife habitats. First, BLM will maintain the biological diversity of plant and animal species. Second, it will support the population objective levels of the WGFD's strategic plan, to the extent practical and consistent with BLM multiple-use management requirements. Third, BLM will maintain and, where possible, improve forage production

and quality of rangelands, fisheries, and wildlife habitats. Finally, to the extent possible, BLM will provide habitats for threatened and endangered and special-status plant and animal species on all public lands in compliance with the ESA and approved recovery plans.

Approximately 90 percent of wildlife program activities support other resource programs. These programs include fuels reduction, density of timber stands in deer and elk winter habitats, oil and gas exploration, timber harvest, and prescribed fires. Specific management goals and actions apply to several wildlife groups and habitats including big game ranges, wetland and riparian areas, elk habitat, raptor and grouse breeding areas, and animal and insect damage control. Wildlife management maintains and, where possible, improves forage production and quality of rangelands, fisheries, and wildlife habitat. It also provides habitats for threatened, endangered, and special-status animal and plant species on BLM-administered public land surface in compliance with the ESA and approved recovery plans.

Big game and fisheries management levels identified in the WGFD 1990-1995 strategic plan are supported by the BLM. The BLM cooperates with the WGFD to introduce or reintroduce native and acceptable non-native wildlife and fish where potential habitat exists. Wildlife habitat is monitored and population adjustments and habitat improvements are recommended to the WGFD, as appropriate. The BLM works with the USFWS and the WGFD to evaluate and designate critical habitat for threatened and endangered species on BLM-administered public lands.

BLM's wildlife program is actively involved in projects and management activities that benefit wildlife and habitats for wildlife. Wildlife program projects include surveying; monitoring; improving habitats such as through the development of habitat management plans; and creating cooperative management areas. Management activities include developing stipulations and protective measures, acquiring land, conducting inventories, performing livestock- or forestry-related activities, and improving wildlife and fisheries habitats.

The BLM develops stipulations and protective measures to enhance wildlife and fisheries habitats. These stipulations and measures include limiting surface development; use of timing restrictions; authorizing withdrawals of some areas from mineral entry; limiting access to specific areas by four-wheel-drive vehicles, snowmobiles, equestrians, and pedestrians; prohibiting surface development; and imposing road closures. The BLM may acquire riverfront land or easements and conduct inventories of potential habitats for occurrences of threatened, endangered, and sensitive species.

BLM conducts livestock- and forestry-related activities that benefit wildlife. Livestock-related wildlife management activities include developing water sources, constructing and maintaining fences, managing other resource activities to conserve forage and protect habitats, improving the production of forage and the quality of rangelands, and improving range with mechanical treatment. Forestry-related wildlife management activities include managing timber and promoting cutting, thinning, planting, seeding, and pitting.

BLM also conducts wildlife management activities specifically to benefit terrestrial and aquatic wildlife. Activities for terrestrial species include, but are not limited to, introducing species, monitoring habitats, modifying fences for antelope passage, implementing public use closures for wintering elk, developing water areas for waterfowl and waterbirds, recommending habitat improvement projects, conducting treatments to control exotic plants, conducting prescribed burns, restoring meadows, cabling junipers, changing types of grazing and season of grazing, developing islands, allowing farming, managing accesses, authorizing agricultural entry and disposal, and using surface protection mitigations. Activities for aquatic species include establishing a baseline fisheries inventory, improving fish habitat, stabilizing banks, developing watering sources, modifying barrier fences, removing exotic fish, constructing instream barriers to protect species from non-native invaders, installing revetments and fish passage

structures, installing log overpours, sampling and analyzing macroinvertebrate, installing gabion baskets, and placing large boulders for instream fish habitat.

Effects Analysis

Prior to the implementation of any improvement project that involved disturbing potentially suitably plover nesting habitats, the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) would be implemented in order to minimize direct effects to nesting mountain plovers and their occupied habitats. Projects implemented outside of the typical nesting period would be less likely to harm individual plovers because post breeding plovers typically flock and leave nesting grounds by mid-July (Knopf 1996). Surface disturbing activities occurring outside of the nesting period would have the potential to damage or destroy potentially suitable mountain plover nesting habitats.

Wildlife habitat improvement projects in riparian areas and timber stands are not likely to affect the mountain plover or its habitat because of the plover's use of short grass habitats. Improvement projects that seek to increase forage production and the quality of rangelands may result in damage or destruction of non-occupied mountain plover habitats. Projects conducted to improve wildlife, fisheries or plant habitat would likely be beneficial for mountain plover habitat or designed to specifically improve mountain plover habitat.

Determination

Implementation of wildlife habitat management **may impact, but is not likely to contribute toward the need for Federal listing** of the mountain plover. This determination is based on the potential for some habitat improvement projects to have an impact on mountain plover habitats. However, the effects to suitable mountain plovers and their habitats are expected to be minimal based on the localized nature of the projects and implementation of the conservation strategies (section 4.0) and the Mountain Plover Project Screen (BLM et al. 2004) when projects occur in occupied mountain plover habitat. Projects may have secondary beneficial affects or designed to specifically improve mountain plover habitat.

SUMMARY OF MANAGEMENT ACTION DETERMINATIONS FOR EACH RESOURCE MANAGEMENT PLAN

TABLE 4 SUMMARY OF MOUNTAIN PLOVER EFFECTS DETERMINATIONS

Management Action \ Field Office & RMP	Buffalo RMP	Casper – Platte River RMP	Cody RMP	Kemmerer RMP	Lander RMP	Newcastle RMP	Pinedale RMP	Rawlins – Great Divide RMP	Rock Springs – Green River RMP	Worland-Grass Creek RMP	Worland-Washakie RMP
Access					NLC		NLC				
Air Quality	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	
Special Areas/ACECs		NLC			NLC	NLC	NLC	NLC	NLC	NLC	NLC
Cultural/historical	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC
Fire Management	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC
Forest Resources	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Hazardous Material	NLC		NLC			NLC			NLC	NLC	NLC
Lands and Realty	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC
Livestock Grazing	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC
Minerals, Energy and Geology	LC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC
OHV	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC
Paleontology	NLC						NLC	NLC			
Recreation	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC
Riparian							NI				
Sensitive Plants								NLC	NLC		
Soils Management	NLC	NLC		NLC	NLC	NLC		NLC			
Surface Disturbance Restrictions							NLC				
T&E Species	NLC								NLC		NLC
Vegetation	NLC			NLC		NLC		NLC	NLC	NLC	
Visual	NLC		NLC			NLC	NLC	NLC	NLC	NLC	NLC
Water/soils							NLC		NLC	NLC	NLC
Watershed/Water Resources	NLC	NLC	NLC	NLC	NLC	NLC		NLC			
Wild and Scenic Rivers	NI		NI	NI	NI		NI	NI	NI		NI
Wild Horses			NLC		NLC		NLC	NLC	NLC	NLC	NLC
Wilderness	NLC		NLC	NLC	NLC		NLC	NLC	NLC	NLC	NLC
Wildlife and Fish	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC	NLC

Key – NI = No Impact
NLC = May Impact, but is not likely to contribute toward the need for Federal listing
LC = May Impact and is likely to contribute toward the need for Federal listing

4.0 CONSERVATION STRATEGIES

Implementation of the following conservation measures is intended to minimize adverse impacts resulting from the previously described management actions in each of the 11 affected RMPs. In addition to the existing mountain plover conservation measures in the RMPs (items 1 through 4), the BLM has committed to implement conservation measures 5 and 6. The BLM will also consider the implementation of best management practices (BMPs) which include, but may not be limited to, items 7 through 25, to further protect the mountain plover and its habitat.

EXISTING PROTECTIONS IN THE RMPS

1. The *Wyoming BLM Standard Mitigation Guidelines for Surface Disturbing Activities* requires any lessee or permittee to conduct inventories or studies in accordance with BLM and USFWS guidelines to verify the presence or absence of threatened or endangered species before any activities can begin on site. In the event the presence of one or more of these species is verified, the operation plans of a proposed action will be modified to include the protection of the species and its habitat, as necessary. Possible protective measures may include seasonal or activity limitations, or other surface management and occupancy constraints (BLM 1990). All BLM FOs.

2. Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the Bureau of Land Management in the State of Wyoming (all BLM FOs),
   - Specifically:
   - → Standard 1 - Within the potential of the ecological site (soil type, landform, climate, and geology), soils are stable and allow for water infiltration to provide for optimal plant growth and minimal surface runoff.
   - → Standard 3 - Upland vegetation on each ecological site consists of plant communities appropriate to the site which are resilient, diverse, and able to recover from natural and human disturbance.
   - → Standard 4 - Rangelands are capable of sustaining viable populations and a diversity of native plant and animal species appropriate to the habitat. Habitats that support or could support threatened species, endangered species, species of special concern, or sensitive species will be maintained or enhanced.

3. Grazing management practices will incorporate the kinds and amounts of use that will restore, maintain, or enhance habitats to assist in the recovery of Federal threatened and endangered species or the conservation of Federally-listed species of concern and other state-designated special status species. Grazing management practices will maintain existing habitat or facilitate vegetation change toward desired habitats. Grazing management will consider threatened and endangered species and their habitats (BLM Wyoming Guidelines for Livestock Grazing Management). All BLM FOs.

4. The BLM will maintain biological diversity of plant and animal species; support WGFD strategic plan population objective levels to the extent practical and to the extent consistent with BLM multiple use management requirements; maintain, and where possible, improve forage production and quality of rangelands, fisheries, and wildlife habitat; and to the extent possible, provide habitat for threatened and endangered and special status plant and animal species on all public lands in compliance with the ESA and approved recovery plans (Buffalo RMP, p.33).

CONSERVATION MEASURES

5. BLM will use the plover project screen in the preliminary analysis of the impacts associated with proposed projects in areas with occupied or potential mountain plover habitat. This multi-agency document is designed to quickly determine if the effects of a proposed action need alterations in order to avoid impacts to the species.

6. Implement the Mountain Plover Survey Guidelines (USFWS 2002b) when surface-disturbing activities are proposed in suitable mountain plover nesting habitats (**Map 1**). No ground-disturbing activities shall occur in suitable nesting habitat prior to surveys conducted. Specifically, the BLM will establish a 0.25-mile buffer around occupied mountain plover nests and include timing restrictions to protect the species. In cases where an exception will be provided to the proponent during the April 10 to July 10 breeding and nesting time period, BLM personnel will adhere to approved protocols describing survey protocol for exceptions.

7. Building on previous research and census efforts (Plumb et al. 2005), continue to census and monitor the mountain plover population on Bureau-administered lands in Wyoming.

BEST MANAGEMENT PRACTICES

The following BMPs are to be considered on a case-by-case basis at the project level, and implemented where appropriate, to further protect the mountain plover.

8. The BLM should apply a Condition of Approval (COA) on all Applications for Permit to Drill (APDs) within areas containing known populations of mountain plovers that protects breeding and nesting activities from April 10 through July 10.

9. There should be No Surface Occupancy (NSO) of ancillary facilities (e.g. compressor stations, processing plants, etc.) within 0.5 mile of known mountain plover nesting areas. Variance may be granted only after consultation with and agreement of the BLM, USFWS, and WGFD.

10. The amount and nature of ground disturbing activities should be limited within identified nesting aggregation areas to avoid the abandonment of these areas. Directional drilling, the piping and storage of condensate off of the nesting concentration area, or to a centralized facility, or other techniques for the minimization of ground disturbance and habitat degradation should be implemented where practicable and feasible. Construction of ancillary facilities (e.g.; compressor stations, processing plants, etc.) should be avoided within ½ mile of known aggregation areas where possible.

11. Because adult mountain plovers and broods may forage along roads, particularly at night, traffic speed and volume should be limited during night-time hours within the breeding season in identified plover breeding areas. Whenever possible, avoid constructing roads through plover breeding and nesting habitat. Within ½ mile of identified aggregation areas, speed limits should be posted at 25 mph on dirt surface resource roads, and 35 mph on local county dirt surface roads during the brood rearing period (June 1 to July 31). Traffic should be minimized by car-pooling and organizing work activities to minimize trips on dirt surfaced roads within ½ mile of known plover breeding aggregation areas from June 1 to July 31. If possible, work schedules and shift changes should be set to avoid the periods from one-half hour before sunrise to 9:00am and from 5:00pm to one-half hour after sunset from June 1 to July 31, when mountain plovers and other wildlife are most active.

12. Project related features that increase the population levels or hunting efficiency of predators of the mountain plover should be strictly limited. Creation of artificial hunting perches or nest structures for avian predators within ½ mile of identified aggregation areas should be avoided by burying power lines or including perch inhibitors in their design and using the lowest possible structures for fences, condensate storage, and other elevated structures and incorporating perch inhibitors into their design. Capped and abandoned wells within ½ mile of nesting aggregation areas should be identified with markers no more than 4 feet tall with perch inhibitors on top to avoid creation of raptor hunting perches, or better yet, placed at or below ground level (according to Onshore Oil and Gas Order No. 2 – issued under 43 CFR 3164).

13. Road-killed animals should be promptly removed from areas within ½ mile of identified aggregation areas to avoid attracting avian and mammalian predators and supplementing their natural food supplies.

14. Seed mixes and application rates for reclamation should produce stands of vegetation suitable for plover nesting in plover aggregation areas, while meeting the BLM's requirements for stabilizing soil and controlling weeds. Seed mixes and application rates for reclamation should be designed to produce stands of sparse, low-growing vegetation suitable for plover nesting in previously suitable mountain plover habitat. Reclamation should attempt to return the plant community to the pre-existing condition as soon as possible.

15. To minimize destruction of nests and disturbance to breeding plovers from reclamation activities, no grading, seeding, or other ground disturbing activities should occur from April 10 to July 10 each year unless surveys consistent with the current Mountain Plover Survey Guidelines or other FWS approved method find that no plovers are nesting in the area.

16. In mountain plover habitat, native seed mixes will be used to re-establish short grass prairie vegetation during reclamation.

17. In the event that a dead or injured mountain plover is located during construction and operation, the USFWS, Wyoming Field Office (307-772- 2374) and the BLM, Wyoming State Office (307-775-6256) should be notified within 24 hours to ensure proper protection measures are implemented in an attempt to avoid further injury or death.

18. Develop and implement a statewide monitoring plan for the mountain plover to establish baseline data for protection of the species.

19. Where feasible, prohibit the sale and disposal of salable minerals in areas containing known mountain plover populations. Also, pursue acquisition of property with known mountain plover populations, where possible.

20. Livestock grazing and some prescribed burning are specific management tools that the BLM may use to maintain favorable habitat conditions for mountain plover where feasible. Grazing, with proper timing and intensity, may reduce the native and exotic plant competition for light and possibly for water, space and nutrients.

21. Herbicide and pesticide use should be analyzed for its effects on mountain plover prey-base prior to use in the vicinity of known populations or suitable habitats.

22. Coordinate with the USFWS, WGFD, and private landowners to ensure adequate protection for the mountain plover and its habitat.

23. Form a steering committee to develop and prioritize management practices and assist WGFD and USFWS with research efforts.

24. Train and educate resource specialists, rangers, fire crews, and enforcement personnel on protection of the mountain plover and its habitat, its status, and current threats to its existence.

25. Establish monitoring, biological, ecological, and life history studies as funding and staffing allow.

26. The following actions or projects will likely cause no significant long-term changes to mountain plover habitat if constructed outside of the nesting season (April 10 – July 10):

- conducting prescribed burns - water wells not requiring windmills - waterbars for erosion control - livestock fences (if constructed greater than ½ mile from aggregation areas) - buried power lines	- small pits - spring developments - water troughs - in-stream structures - chaining vegetation - wildlife exclosures	- construction of pipelines - pesticide application - herbicide application - weed control - seismic exploration - wildlife guzzlers

5.0 REFERENCES

Beauvais, G.P. and R.S. Smith. 1999. Occurrence of breeding mountain plovers (Charadrius montanus) in the Wyoming Basins ecoregion. Prepared for the USDI Bureau of Land Management, Rock Springs Field Office.

Bureau of Land Management (BLM). 1985. Record of Decision for the Resource Management Plan / Final Environmental Impact Statement. Platte River Resource Area, Casper District. Casper, Wyoming. July 1985.

Bureau of Land Management (BLM). October 1985. Record of Decision for the Resource Management Plan / Final Environmental Impact Statement for Buffalo Resource Area. Casper, Wyoming.

Bureau of Land Management (BLM). April 1986. Record of Decision for the Kemmerer Resource Management Plan and Rangeland Program Summary Document. Kemmerer Resource Area. Rock Springs, Wyoming.

Bureau of Land Management (BLM). June 1987. Record of Decision for the Lander Resource Management Plan. Lander Resource Area. Rawlins, Wyoming.

Bureau of Land Management (BLM). November 1990. Record of Decision and Approved Resource Management Plan for the Cody Resource Area. Worland, Wyoming.

Bureau of Land Management (BLM). August 2000. Record of Decision and Approved Resource Management Plan for the Newcastle Field Office Administrative Area. Newcastle Resource Area. Newcastle, Wyoming.

Bureau of Land Management (BLM) Colorado, Nebraska, and Wyoming, U.S. Forest Service (USFS) Region 2, U.S. Fish and Wildlife Service (USFWS) Region 6, and Nation Park Service (NPS) Intermountain Region. 2004. Mountain Plover Project Screen.

Dinsmore, S.J. 2003. Mountain Plover (Charadrius montanus): a technical conservation assessment [Web Page]. Located at: http://www.fs.fed.us/r2/projects/scp/assessments/mountainplover.pdf. Accessed: January 28, 2005.

Fitzgerald, W. 2002. Personal Communication [May 13, 2002 telephone conversation with S. Faulk, Biologist, Greystone Consultants RE: mountain plover occurrence information within Platte River Resource Area]. Mr. Fitzgerald is a wildlife biologist with the BLM, Casper, Wyoming.

Good, R.E., D.P. Young Jr., and J. Eddy. 2002. Distribution of Mountain Plovers in the Powder River Basin, Wyoming. Draft. Prepared for: Bureau of Land Management, Cheyenne, Wyoming.

Graul, W.D. 1975. Breeding biology of the mountain plover. The Wilson Bulletin 87(1): 6-31.

Keinath, D. A. and D. S. Ehle. 2001. Survey for Mountain Plover (Charadrius montanus) on Federal Lands in the Powder River Basin. Prepared for Jeff Carroll, USDI Bureau of Land Management by the Wyoming Natural Diversity Database - University of Wyoming, Laramie, Wyoming.

Knopf, F.L. and B.J. Miller. 1994. Charadrius montanus – Montane, Grassland, or Bare-ground Plover? Auk 111(2): 504-506.

Knopf, F.L. 1996 (Charadrius montanus). No. 211 in A. Poole and F. Gill, editors, The Birds of North America. The Academy of Natural Sciences, Philadelphia, Pennsylvania and The American Ornithologists Union, Washington, D.C.

Knowles, C.J., C.J. Stoner, and S.P. Gieb. 1982. Selective use of black-tailed prairie dog towns by mountain plovers. Condor 84: 71-74.

Luce, B. A. Cerovski, B. Oakleaf, J. Priday, and L. Van Fleet. 1999. Atlas of Birds, Mammals, Reptiles, and Amphibians in Wyoming. Wyoming Game and Fish Department, Nongame Program. Lander, Wyoming.

Merrill, E.H., T.W. Kohley, M.E. Herdendorf, W.A. Reiners, K.L. Driese, R.W. Marrs, and S.H. Anderson 1996. The Wyoming Gap Analysis Project final report. Wyoming Cooperative Fish and Wildlife Research Unit. University of Wyoming, Laramie, Wyoming.

National Resource Conservation Service (NRCS). April 2001. Mountain Plover (Charadrius montanus), Fish and Wildlife Habitat Management Leaflet. No. 22.

Read, M. 2005. Personal communication [*Jan 28* facsimile to J. MacDonald, Greystone, Greenwood Village, Colorado. *RE*: Revised Wild Horse Management Units within the Rawlins FO]. Biologist, Bureau of Land Management, Rawlins Field Office, Rawlins, Wyoming. 2 pages.

U.S. Fish and Wildlife Service (USFWS). 2003. Endangered and Threatened Wildlife and Plants; Withdrawal of the Proposed Rule to List Mountain Plover as Threatened. Federal Register 68(174):53083-53101.

U.S. Fish and Wildlife Service (USFWS). 2002a. Endangered and Threatened Wildlife and Plants; Threatened Status and Special Regulation for the Mountain Plover. Federal Register 67(234):72396-72407.

U.S. Fish and Wildlife Service (USFWS). 2002b. Mountain Plover Survey Guidelines, U.S. Fish and Wildlife Service, March 2002. 7 pages.

U.S. Fish and Wildlife Service (USFWS). 2000a. Draft Mountain Plover Section 7 Guidelines. As cited in Good et al. 2002. Draft Copy. Distribution of Mountain Plovers in the Powder River Basin, Wyoming. Western Ecosystems Technology, Inc. Cheyenne, Wyoming.

U.S. Fish and Wildlife Service (USFWS). 2000b. Final Biological and Conference Opinions for the Wyodak Coal Bed Methane Project, Converse and Campbell Counties, Wyoming. USFWS Ecological Services Office, Cheyenne, Wyoming.

U.S. Fish and Wildlife Service (USFWS). 1999. Proposed Threatened Status for the Mountain Plover. Federal Register 64(30): 7587-7601.

U.S. Fish and Wildlife Service (USFWS). 1997. Review of Plant and Animal Taxa, Proposed Rule. Federal Register 62(182): 49398-49411.

U.S. Fish and Wildlife Service (USFWS). 1982. Review of Vertebrate Wildlife for Listing as Endangered or Threatened Species. Federal Register pp 58454 58460.

6.0 APPENDIX A – DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT

Buffalo Field Office

Reviewed data confirmed mountain plover occurrence in the Buffalo FO. Records of mountain plover observations from recent surveys and the WYNDD database include sightings near the towns of Buffalo and Gillette and Thunder Basin National Grassland (**Map A-1**). The survey areas for the Keinath et al (2001) and Good et al. (2002) studies coincided with the environmental impact statement (EIS) boundary for a coalbed natural gas development project, which includes a large portion of the Buffalo FO. Keinath et al. reported 11 mountain plover observations, with one sighting in the Buffalo FO south of Gillette, Wyoming. Good et al. reported six mountain plover observations, of which five were located in the Buffalo FO between Buffalo and Kaycee, Wyoming.

Discussions with the BLM Buffalo FO biologist and a review of reports by Keinath et al. and Good et al. were relied upon for mountain plover habitat information within the FO. Keinath et al. (2001) identified several potential mountain plover survey sites according to information from local biologists, historical records of plover occurrence maintained by WYNDD, vegetative features from Gap Analysis Project (GAP) vegetation data, and known prairie dog towns from WGFD. From this information, potential survey locations were identified throughout the FO. These are presented in **Map A-1** and illustrate the widespread nature of these potential mountain plover habitats throughout the FO with no pattern associated with land ownership.

The Keinath et al. and Good et al. studies evaluated mountain plover habitat conditions at a combined total of 1,896 survey points. The average suitability of mountain plover habitat at the survey points for both studies was:

High – 10 percent
Medium – 30 percent
Low – 42 percent
No – 29 percent

Despite the effort of both studies to designate survey points in habitats of high and medium suitability using GAP vegetation models, known prairie dog towns, and topography, the majority of habitat surveyed was of low suitability or unsuitable for mountain plovers. The observations of mountain plovers during these studies provide validation for the habitat characterization system. The majority of the mountain plover observations were in high suitability habitats and no mountain plovers were observed in low suitability or unsuitable habitats. Unfortunately, the survey point locations for these studies were restricted to publicly maintained roads. High quality habitats, including large prairie dog complexes, are known to occur on privately owned lands within the EIS study boundary and the Buffalo FO but these habitats were not included in these studies. As a result, trends in plover occurrence and habitat use reported in these studies may not be applicable to the entire Buffalo FO.

Map A-1 Buffalo Field Office

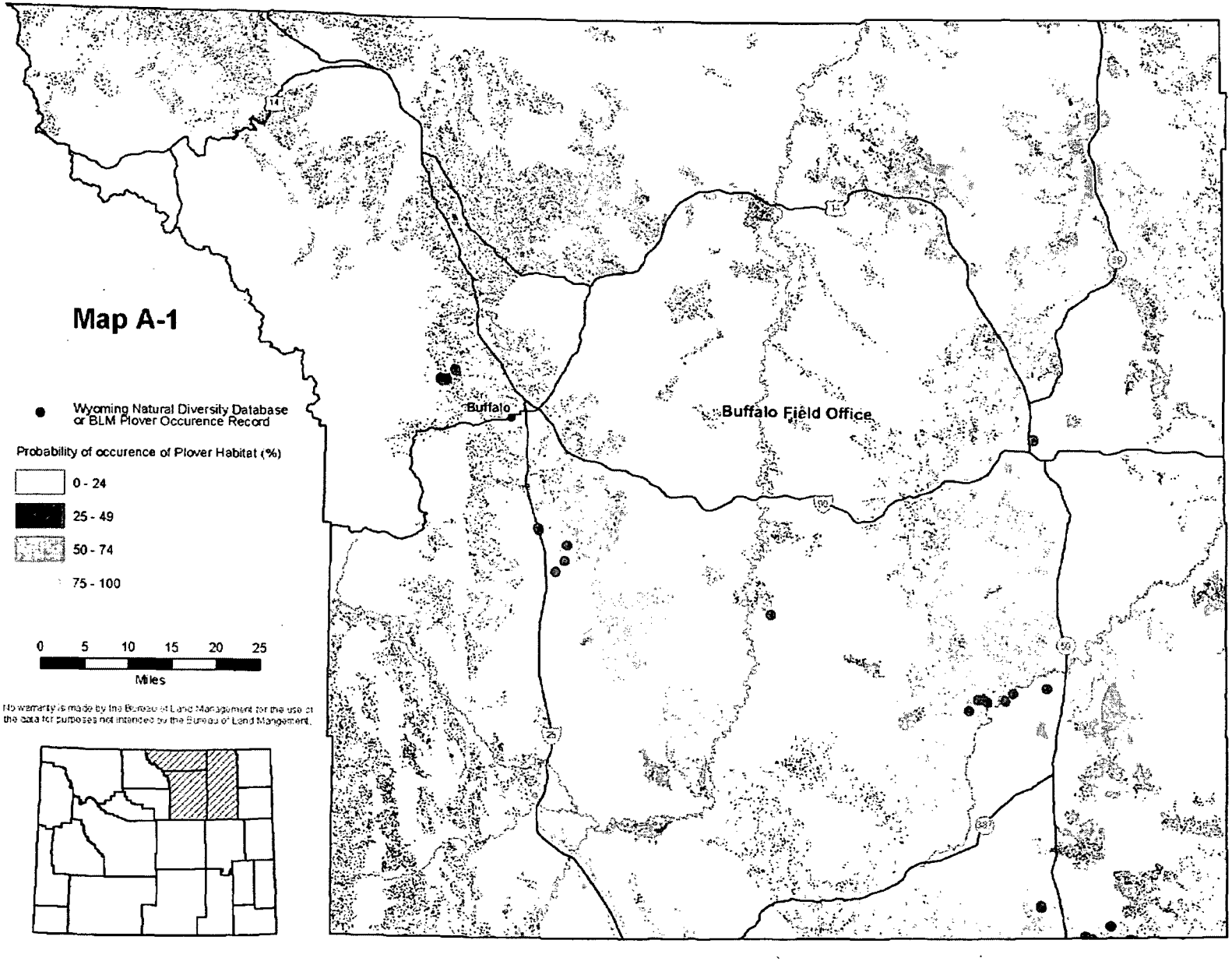


TABLE A-1 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE BUFFALO FO / BUFFALO RMP PLANNING AREA

Probability of mountain plover occurrence (percent)	Covered by Buffalo RMP			Not covered by Buffalo RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	702,334	3,719,114	78.7	1,242,508	70.4	5,663,955	76.7
25-50	21,600	149,410	3.0	81,881	4.6	252,892	3.4
50-75	10,143	126,710	2.4	56,279	3.2	193,133	2.6
75-100	61,139	827,805	15.8	384,994	21.8	1,273,938	17.3
Total	795,217	4,823,039	100.0	1,765,662	100.0	7,383,918	100.0

TABLE A-2 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE BUFFALO FO / BUFFALO RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Buffalo RMP			Not covered by Buffalo RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	0	5	83.3	5	33.4	5	71.4
25-50	0	0	0.0	1	6.6	0	0.0
50-75	0	1	16.7	1	6.6	2	28.6
75-100	0	0	0.0	8	53.4	0	0.0
Total	0	6	100.0	15	100.0	7	100.0

Casper Field Office

Reviewed data confirmed mountain plover occurrence in the Casper FO. Records of mountain plover observations from recent surveys and the WYNDD database for the Casper FO include sightings widely distributed throughout most of Natrona County, with concentrations of sightings in the northeastern portion of Converse County in the Thunder Basin National Grassland, and in isolated locations of Platte and Goshen Counties (**Map A-2**). Keinath et al. (2001) surveyed many areas throughout the Powder River Basin including portions of the Casper FO in Natrona and Converse Counties. Keinath et al. reported a total of 11 mountain plovers, with 8 observations within the Casper FO near Waltman, Wyoming. The land in the vicinity of these sightings was a mixture of Federal, state, and private ownership. Three mountain plover observations were also recorded in the northeastern corner of Converse County in the Thunder Basin National Grassland, also within the FO.

Inventories of potential mountain plover habitats in the Casper FO have not been conducted (Fitzgerald 2002). Potential mountain plover habitats are evaluated when individual projects are proposed and include surface disturbing activities. For this assessment a GIS-based model was used to characterize and identify potential mountain plover nesting habitats in the Casper FO. These areas are identified in **Map A-2**.

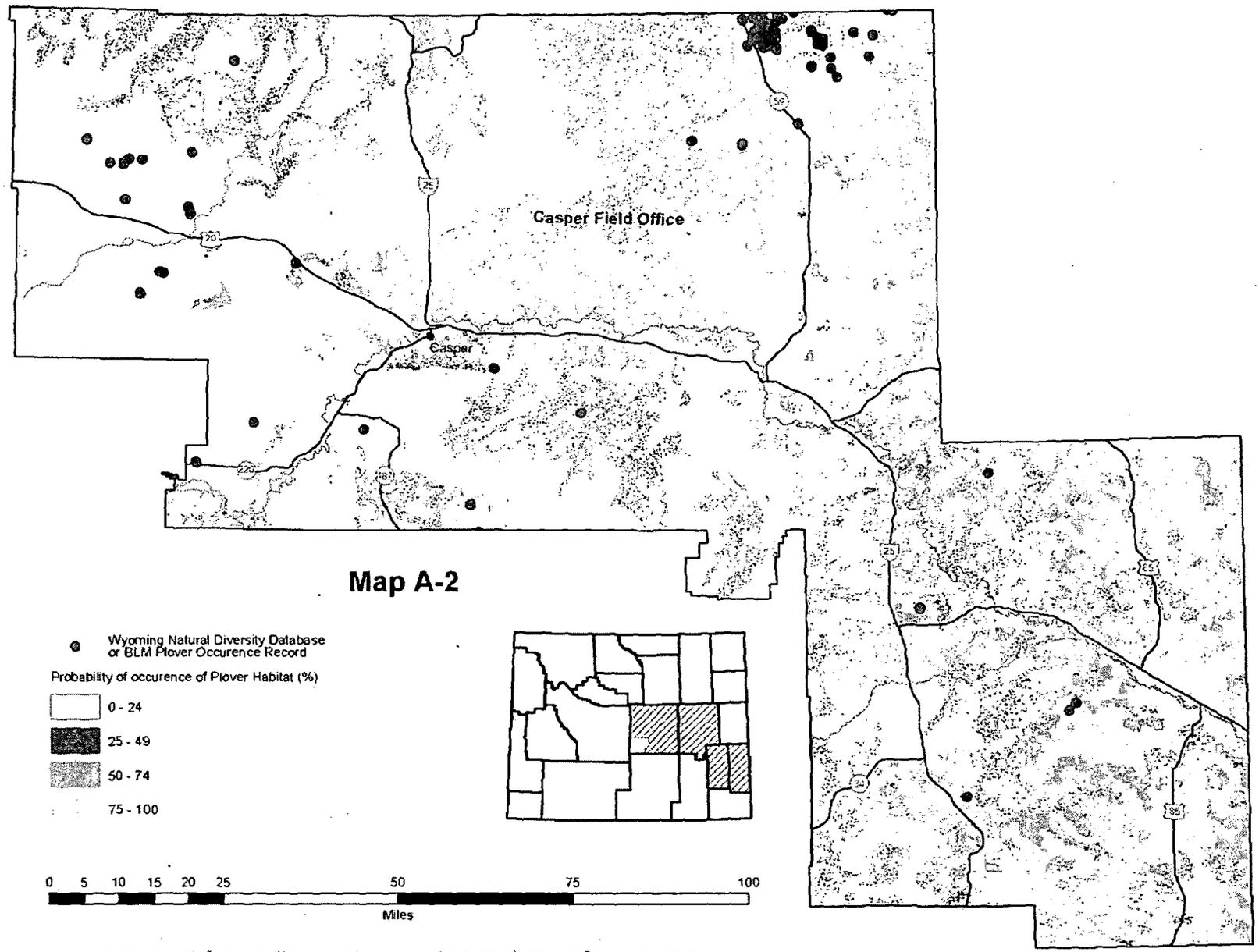
TABLE A-3 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE CASPER FO / PLATTE RIVER RMP PLANNING AREA

Probability of mountain plover occurrence (percent)	Covered by Platte River RMP			Not covered by Platte River RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	1,146,491	2,056,141	68.5	2,020,351	52.0	5,222,983	61.0
25-50	47,943	128,399	3.8	166,183	4.3	342,525	4.0
50-75	24,655	87,874	2.4	206,233	5.3	318,761	3.7
75-100	230,155	952,750	25.3	1,495,882	38.5	2,678,787	31.3
Total	1,449,244	3,225,163	100.0	3,888,648	100.0	8,563,056	100.0

TABLE A-4 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE CASPER FO / PLATTE RIVER RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Platte River RMP			Not covered by Platte River RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	15	43	18.6	15	50.0	73	22.0
25-50	2	0	0.7	0	0.0	2	0.6
50-75	0	5	1.7	0	0.0	5	1.5
75-100	1	237	79.1	15	50.0	253	75.9
Total	18	285	100.0	30	100.0	333	100.0

Map A-2 Casper Field Office



No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the Bureau of Land Management

Cody Field Office

Potential habitat for the mountain plover in the Cody FO is shown on **Map A-3**. Potential habitat and mountain plover occurrences are shown on **Tables A-5** and **A-6** below.

TABLE A-5 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE CODY FO / CODY RMP PLANNING AREA

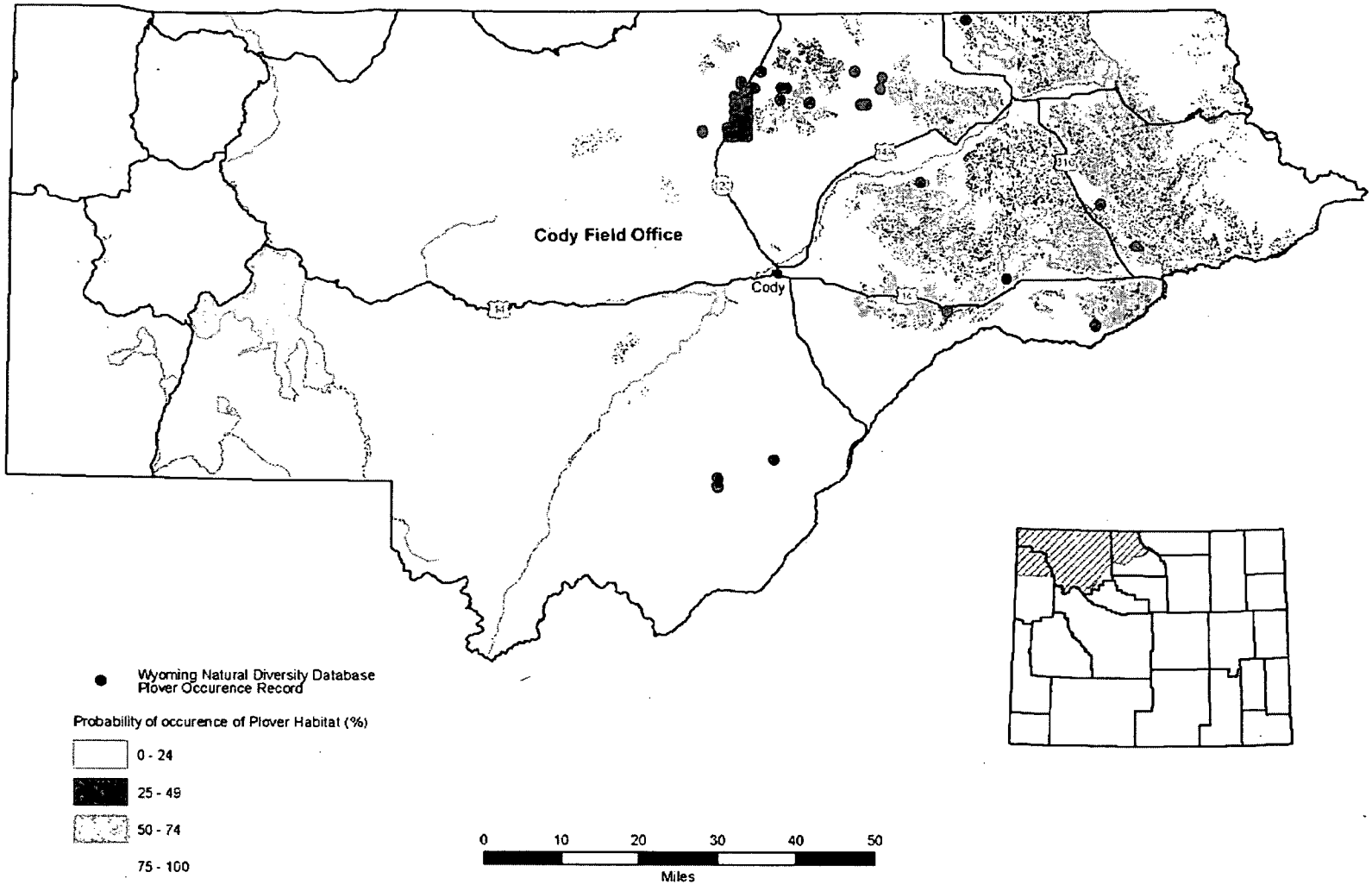
Probability of mountain plover occurrence (percent)	Covered by Cody RMP			Not covered by Cody RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	770,357	390,629	75.7	680,297	93.8	1,841,283	81.5
25-50	68,252	10,638	5.1	10,546	1.5	89,435	4.0
50-75	136,650	24,303	10.5	19,791	2.7	180,744	8.0
75-100	111,599	20,762	8.6	14,698	2.0	147,060	6.5
Total	1,086,858	446,332	100.0	725,333	100.0	2,258,522	100.0

TABLE A-6 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE CODY FO / CODY RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Cody RMP			Not covered by Cody RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	196	4	93.5	14	100.0	214	93.9
25-50	5	0	2.3	0	0.0	5	2.2
50-75	6	0	2.8	0	0.0	6	2.6
75-100	0	3	1.4	0	0.0	3	1.3
Total	207	7	100.0	14	100.0	228	100.0

Map A-3 Cody Field Office

Map A-3



No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the Bureau of Land Management

Kemmerer Field Office

Potential habitat for the mountain plover in the Kemmerer FO is shown on **Map A-4**. Potential habitat and mountain plover occurrences are shown on **Tables A-7** and **A-8** below.

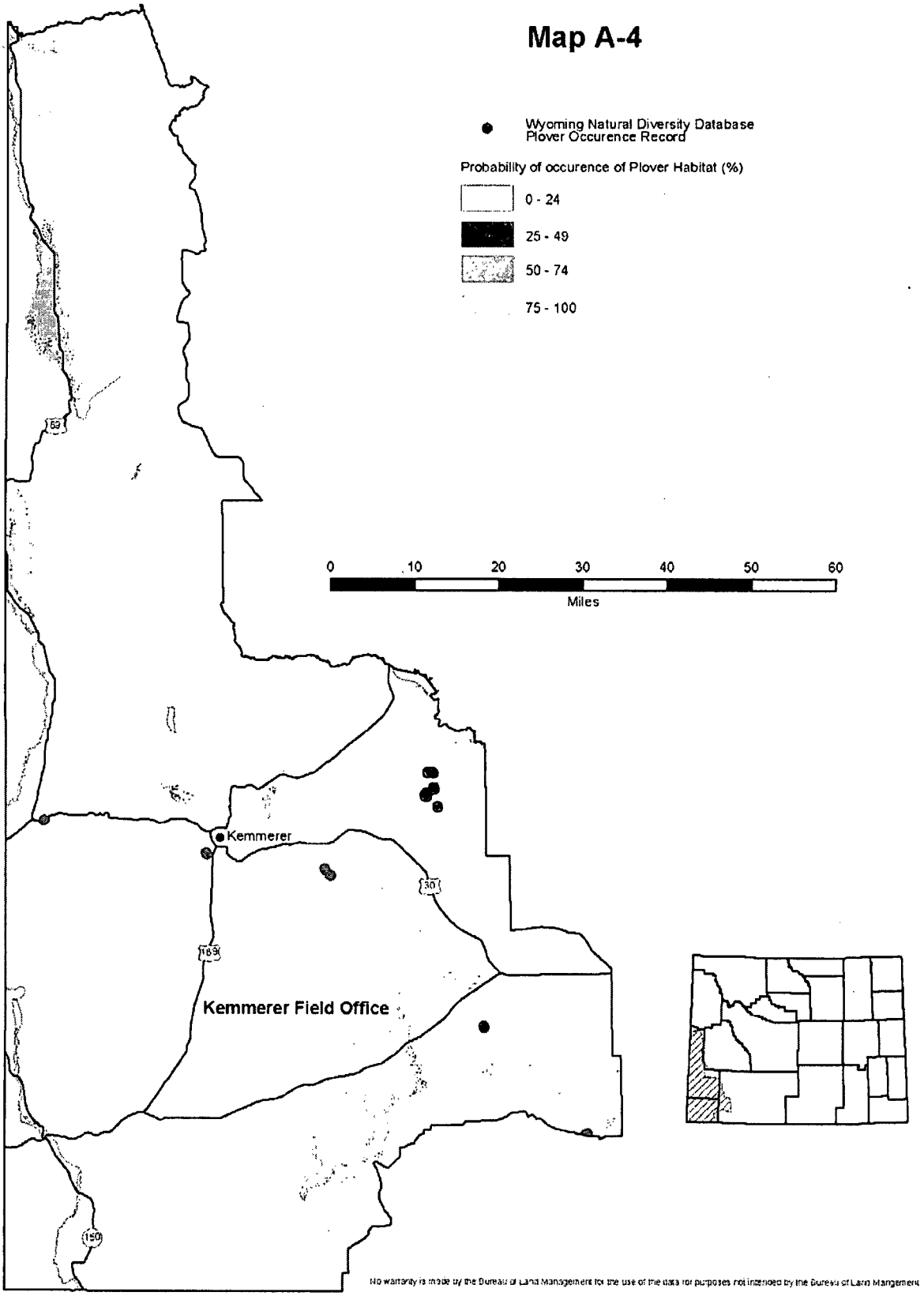
TABLE A-7 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE KEMMERER FO / KEMMERER RMP PLANNING AREA

Probability of mountain plover occurrence (percent)	Covered by Kemmerer RMP			Not covered by Kemmerer RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	1,379,262	253,928	97.3	1,321,177	98.0	2,954,368	97.6
25-50	2,949	281	0.2	1,784	0.1	5,014	0.2
50-75	1,808	166	0.1	1,096	0.1	3,069	0.1
75-100	36,362	3,235	2.4	24,103	1.8	63,700	2.1
Total	1,420,381	257,610	100.0	1,348,160	100.0	3,026,151	100.0

TABLE A-8 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE KEMMERER FO / KEMMERER RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Kemmerer RMP			Not covered by Kemmerer RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	30	2	100.0	2	100.0	34	100.0
25-50	0	0	0.0	0	0.0	0	0.0
50-75	0	0	0.0	0	0.0	0	0.0
75-100	0	0	0.0	0	0.0	0	0.0
Total	30	2	100.0	2	100.0	34	100.0

Map A-4 Kemmerer Field Office



Lander Field Office

Data received in May 2002 from Wyoming Natural Diversity Database (WYNDD) indicate several recorded observations of mountain plover in the Lander FO (**Map A-5**). Connie Breckenridge, BLM biologist for the Lander FO, stated mountain plover inventories and habitat mapping are not conducted in this FO and all mountain plover surveys are associated with project-specific actions. Suitable habitat is expected to occur within this FO, as supported by documented observations of mountain plovers.

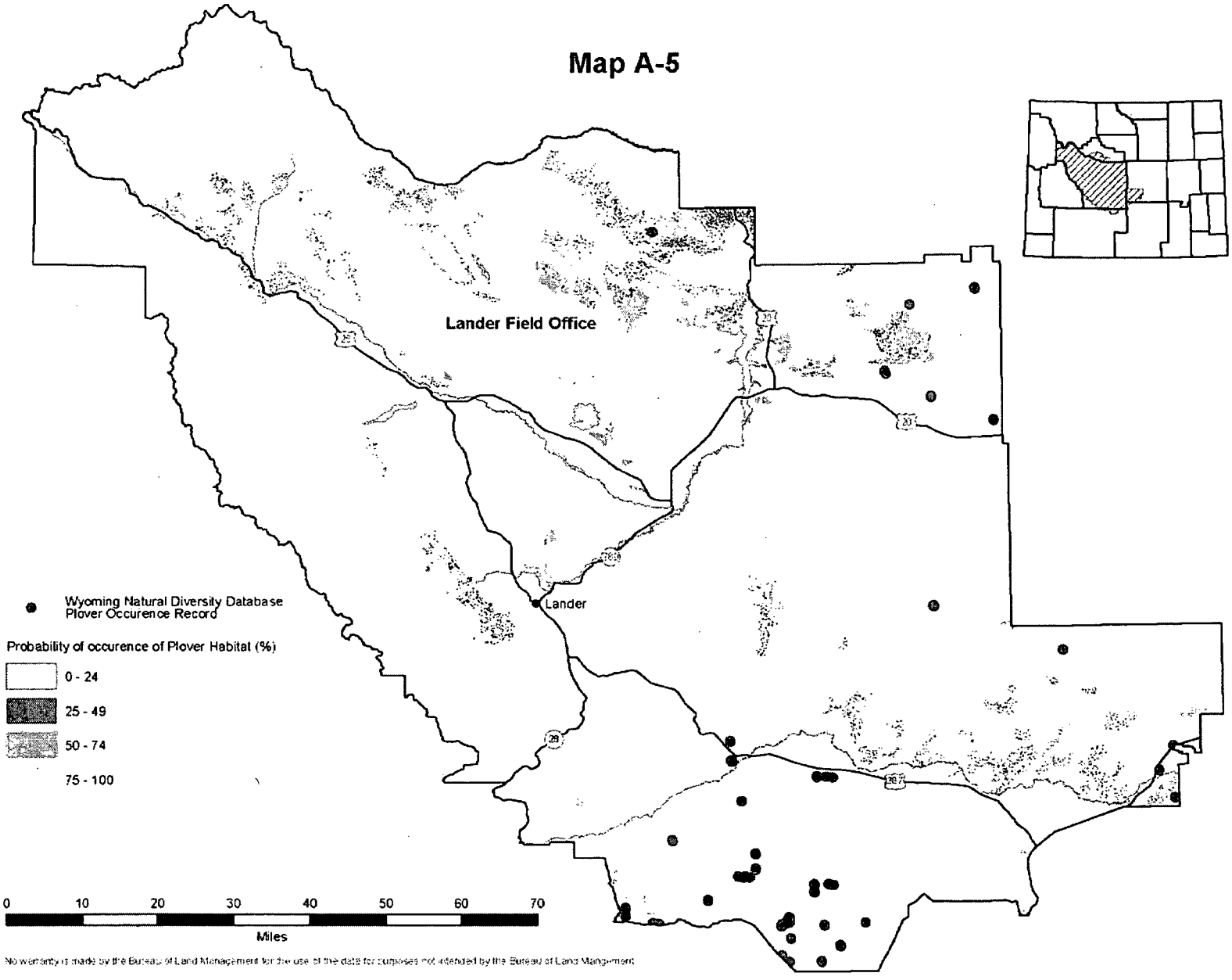
TABLE A-9 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE LANDER FO / LANDER RMP PLANNING AREA

Probability of mountain plover occurrence (percent)	Covered by Lander RMP			Not covered by Lander RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	2,326,597	1,374,930	97.8	2,566,043	95.0	6,267,571	96.6
25-50	12,496	3,829	0.4	30,013	1.1	46,338	0.7
50-75	11,661	3,078	0.4	23,994	0.9	38,734	0.6
75-100	40,800	11,322	1.4	80,484	3.0	132,607	2.0
Total	2,391,555	1,393,160	100.0	2,700,534	100.0	6,485,249	100.0

TABLE A-10 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE LANDER FO / LANDER RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Lander RMP			Not covered by Lander RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	71	4	100.0	10	100.0	85	100.0
25-50	0	0	0.0	0	0.0	0	0.0
50-75	0	0	0.0	0	0.0	0	0.0
75-100	0	0	0.0	0	0.0	0	0.0
Total	71	4	100.0	10	100.0	85	100.0

Map A-5 Lander Field Office



Newcastle Field Office

Potential habitat for the mountain plover and occurrence data from WYNDD and recent surveys in the Newcastle FO is shown on **Map A-6**. Potential habitat and mountain plover occurrences are shown on **Tables A-11** and **A-12** below.

TABLE A-11 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE NEWCASTLE FO / NEWCASTLE RMP PLANNING AREA

Probability of mountain plover occurrence (percent)	Covered by Newcastle RMP			Not covered by Newcastle RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	130,401	745,971	40.7	1,313,958	44.8	2,190,331	43.1
25-50	14,921	95,277	5.1	130,058	4.4	240,256	4.7
50-75	10,897	65,816	3.6	107,875	3.7	184,588	3.6
75-100	131,322	957,869	50.6	1,379,031	47.1	2,468,221	48.6
Total	287,541	1,864,933	100.0	2,930,922	100.0	5,083,396	100.0

TABLE A-12 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE NEWCASTLE FO / NEWCASTLE RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Newcastle RMP			Not covered by Newcastle RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	0	1	6.7	3	27.3	4	15.5
25-50	0	0	0.0	1	9.1	1	3.8
50-75	0	0	0.0	1	9.1	1	3.8
75-100	4	10	93.3	6	54.5	20	76.9
Total	4	11	100.0	11	100.0	26	100.0

Map A-6 Newcastle Field Office

Map A-6

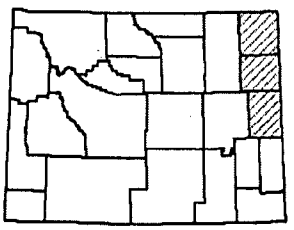
Wyoming Natural Diversity Database Plover Occurence Record

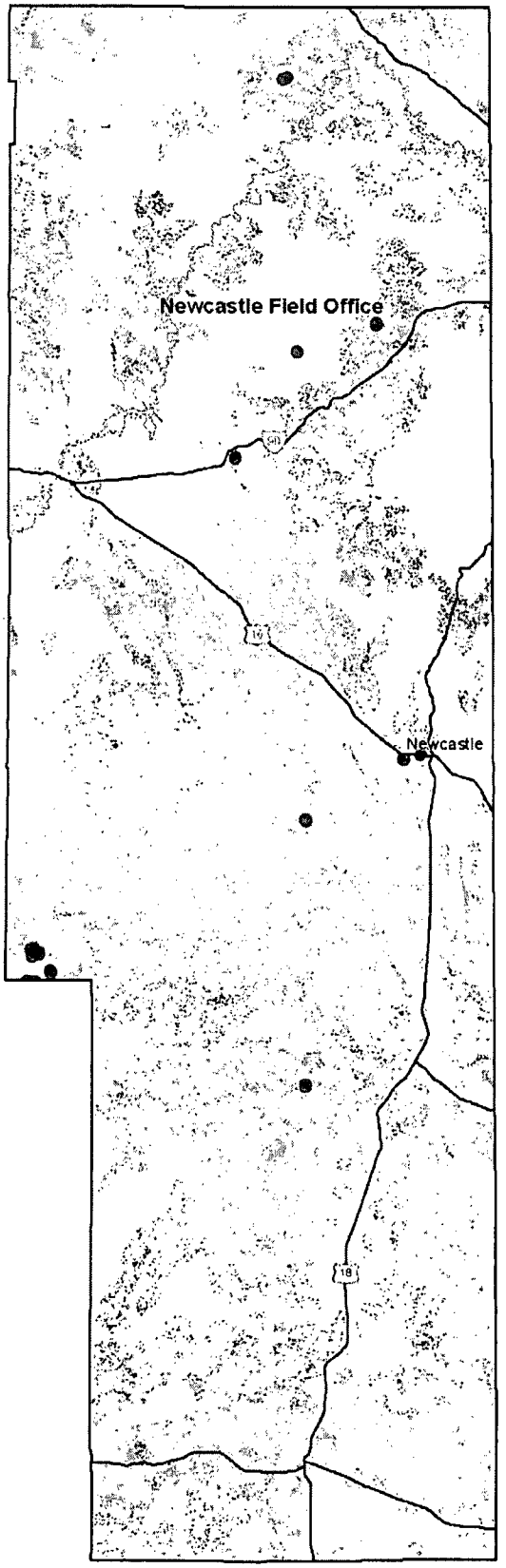
Probability of occurence of Plover Habitat (%)

- 0 - 24
- 25 - 49
- 50 - 74
- 75 - 100

0 10 20 30 40 50

Miles





No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the Bureau of Land Mangement

Pinedale Field Office

Potential habitat for the mountain plover in the Pinedale FO is shown on **Map A-7**. Potential habitat and mountain plover occurrences are shown on **Tables A-13** and **A-14** below.

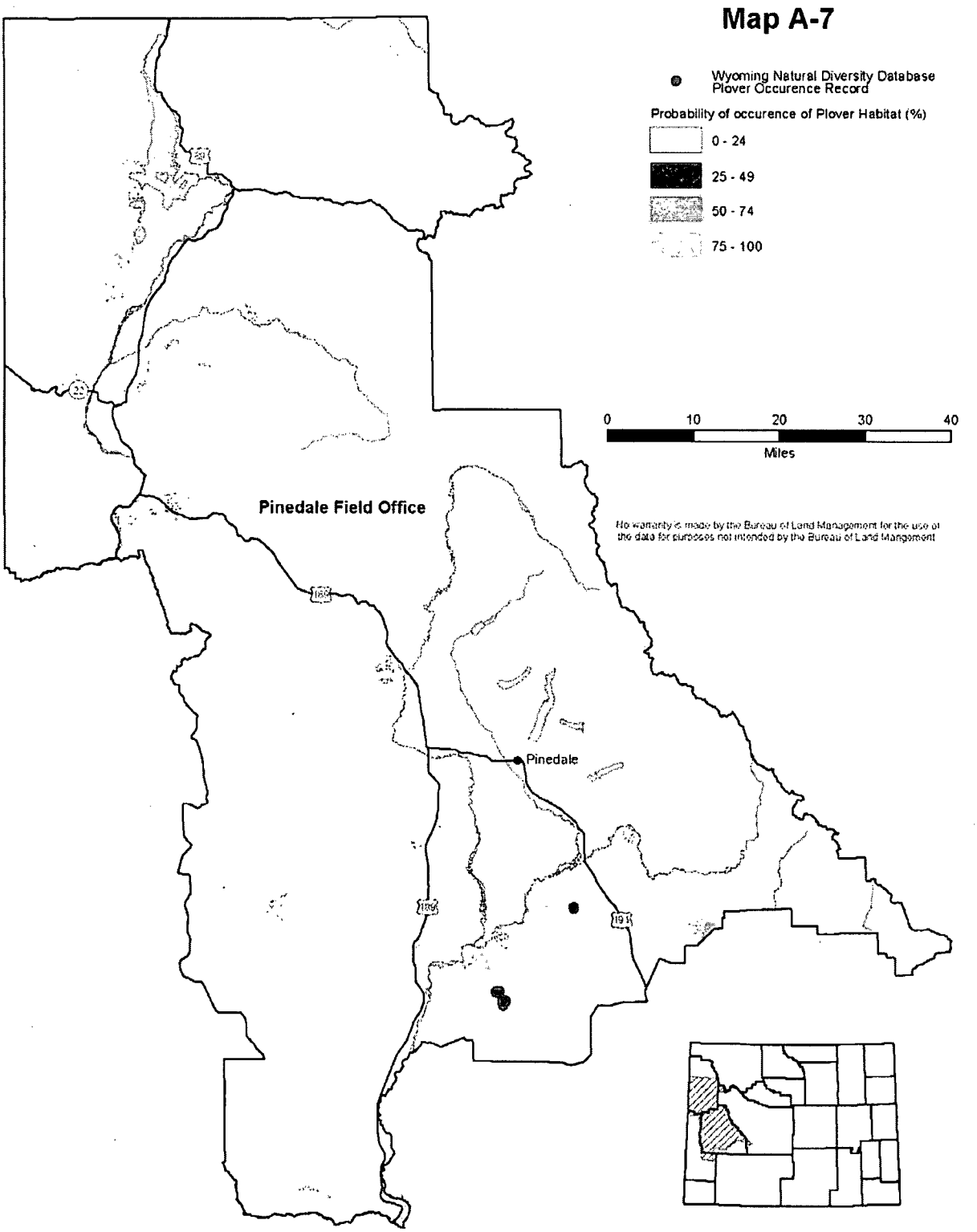
TABLE A-13 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE PINEDALE FO / PINEDALE RMP PLANNING AREA

Probability of mountain plover occurrence (percent)	Covered by Pinedale RMP			Not covered by Pinedale RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	910,467	286,892	99.0	403,900	99.4	1,601,259	99.1
25-50	892	272	0.1	436	0.1	1,601	0.1
50-75	1,101	188	0.1	662	0.2	1,952	0.1
75-100	7,584	1,717	0.8	1,436	0.4	10,736	0.7
Total	920,045	289,069	100.0	406,434	100.0	1,615,547	100.0

TABLE A-14 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE PINEDALE FO / PINEDALE RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Pinedale RMP			Not covered by Pinedale RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	18	0	100.0	2	100.0	20	100.0
25-50	0	0	0.0	0	0.0	0	0.0
50-75	0	0	0.0	0	0.0	0	0.0
75-100	0	0	0.0	0	0.0	0	0.0
Total	18	0	100.0	2	100.0	20	100.0

Map A-7 Pinedale Field Office



Rawlins Field Office

Habitat modeling using methods modified from Beauvais and Smith (1999) revealed substantial areas of potential mountain plover habitat in the Rawlins FO, as summarized in **Table A-15**. Existing data sources showed that a substantial number of mountain plovers have been observed in the Rawlins FO (**Table A-16**). **Map A-8** shows the distribution of potential habitats and known occurrences of the mountain plover in the Rawlins FO. As with other FO areas, there was substantial, but not complete overlap between modeled potential habitat and recorded plover observations. In particular, many recorded plover occurrences in the Great Divide Basin in the northwest part of the FO are not located in areas of potential plover habitat. Young and Good (2000) observed that in the bare ground/*Atriplex* habitats that are found in this area, mountain plovers may select breeding sites based on fine-scale site characteristics. The model used to determine habitat suitability uses Wyoming GAP data (Merrill et al. 1996) that are designed for broad-scale analysis and that do not show fine-scale habitat features.

Mountain plover occurrence in other areas, such as Shirley Basin and Medicine Bow area, show strong correspondence between modeled potential habitat and documented occurrences. Large tracts of land north and east of Cheyenne appear to be suitable, but few plover occurrences have been recorded. This lack of plover occurrence is probably best explained by two factors: 1) much of this area is privately owned and has not been surveyed for plovers; and 2) the type of shortgrass prairie that is found there does not meet the requirements for breeding mountain plovers. Finally, certain areas where detailed studies have been conducted, such as the Foote Creek Rim, show dense concentrations that are likely to be artifacts of intense survey effort rather than actual breeding concentrations.

The Rawlins FO is one of several areas that encompasses a large extent of potential mountain plover habitats; however, most of these habitats, especially the highest quality habitats, are found on private lands. Nevertheless, substantial areas of potential mountain plover habitats are found on lands managed under the direction of the Rawlins RMP. Likewise, many of the recorded plover occurrences are on lands managed under the Rawlins RMP. It is important to note that the data presented in **Table A-16** are the result of multiple years of survey efforts, often in the same location. These data should not be taken to represent an estimate of the population in the Rawlins FO area because of the likelihood that many plovers have been counted more than once. No attempt has been made for this BA to estimate the mountain plover population size in the Rawlins FO or in the State of Wyoming.

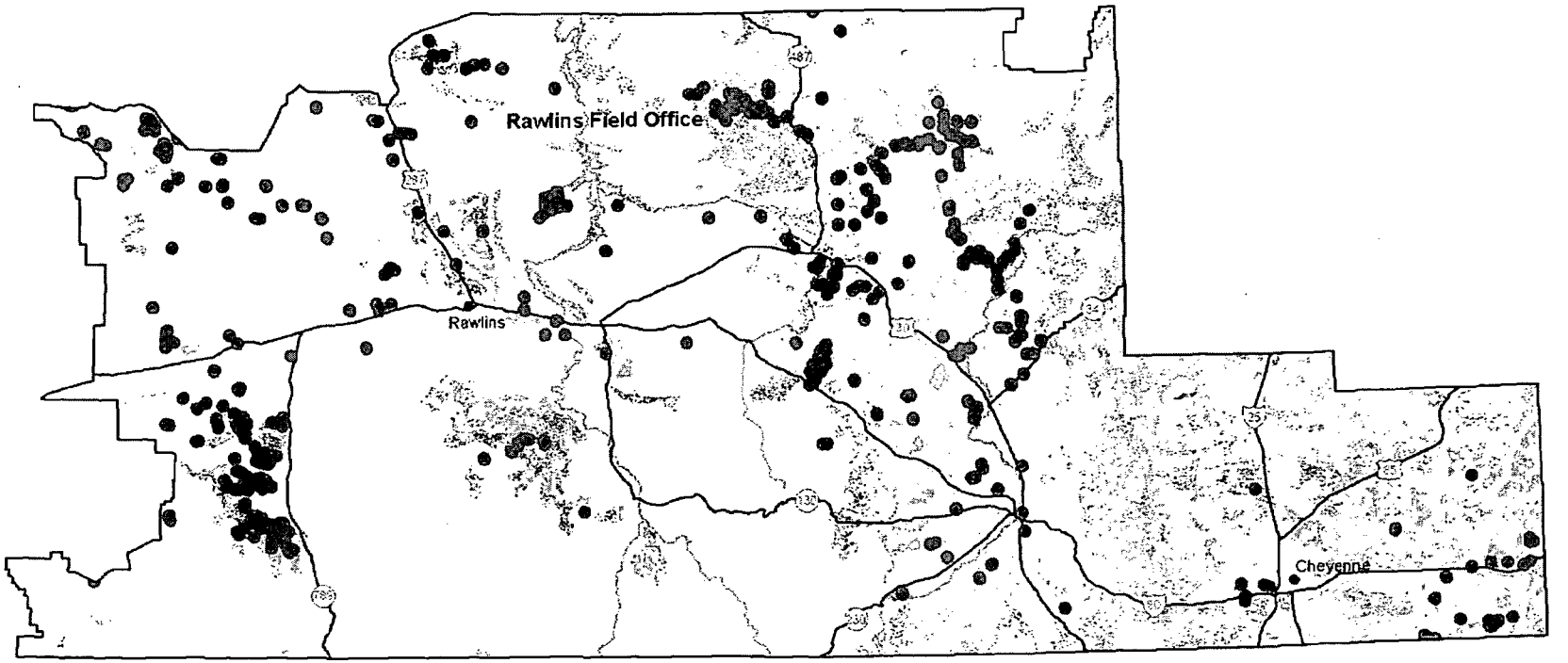
TABLE A-15 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE RAWLINS FO / GREAT DIVIDE RMP PLANNING AREA

Probability of mountain plover occurrence (percent)	Covered by Great Divide RMP			Not covered by Great Divide RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	3,069,371	1,818,590	83.8	3,063,618	56.5	7,951,580	70.7
25-50	54,875	42,895	1.7	191,076	3.5	288,846	2.6
50-75	69,811	31,262	1.7	231,823	4.3	332,896	3.0
75-100	361,398	381,309	12.7	1,931,155	35.6	2,673,863	23.8
Total	3,555,455	2,274,057	100.0	5,417,672	100.0	11,247,184	100.0

TABLE A-16 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE RAWLINS FO / GREAT DIVIDE RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Great Divide RMP			Not covered by Great Divide RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	351	98	59.1	253	65.5	702	61.3
25-50	17	1	2.4	24	6.2	42	3.7
50-75	38	1	5.1	6	1.6	45	3.9
75-100	214	40	33.4	103	26.7	357	31.2
Total	620	140	100.0	386	100.0	1,146	100.0

Map A-8 Rawlins Field Office



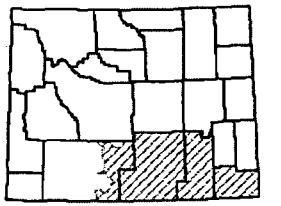
Map A-8

Wyoming Natural Diversity Database Plover Occurence Record

Probability of occurence of Plover Habitat (%)

- 0 - 24
- 25 - 49
- 50 - 74
- 75 - 100

0 20 40 60 80 100
Miles



No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the Bureau of Land Mangement

Rock Springs Field Office

Potential habitat for the mountain plover in the Rock Springs FO is shown on **Map A-9**. Potential habitat and mountain plover occurrences are shown on **Tables A-17** and **A-18** below.

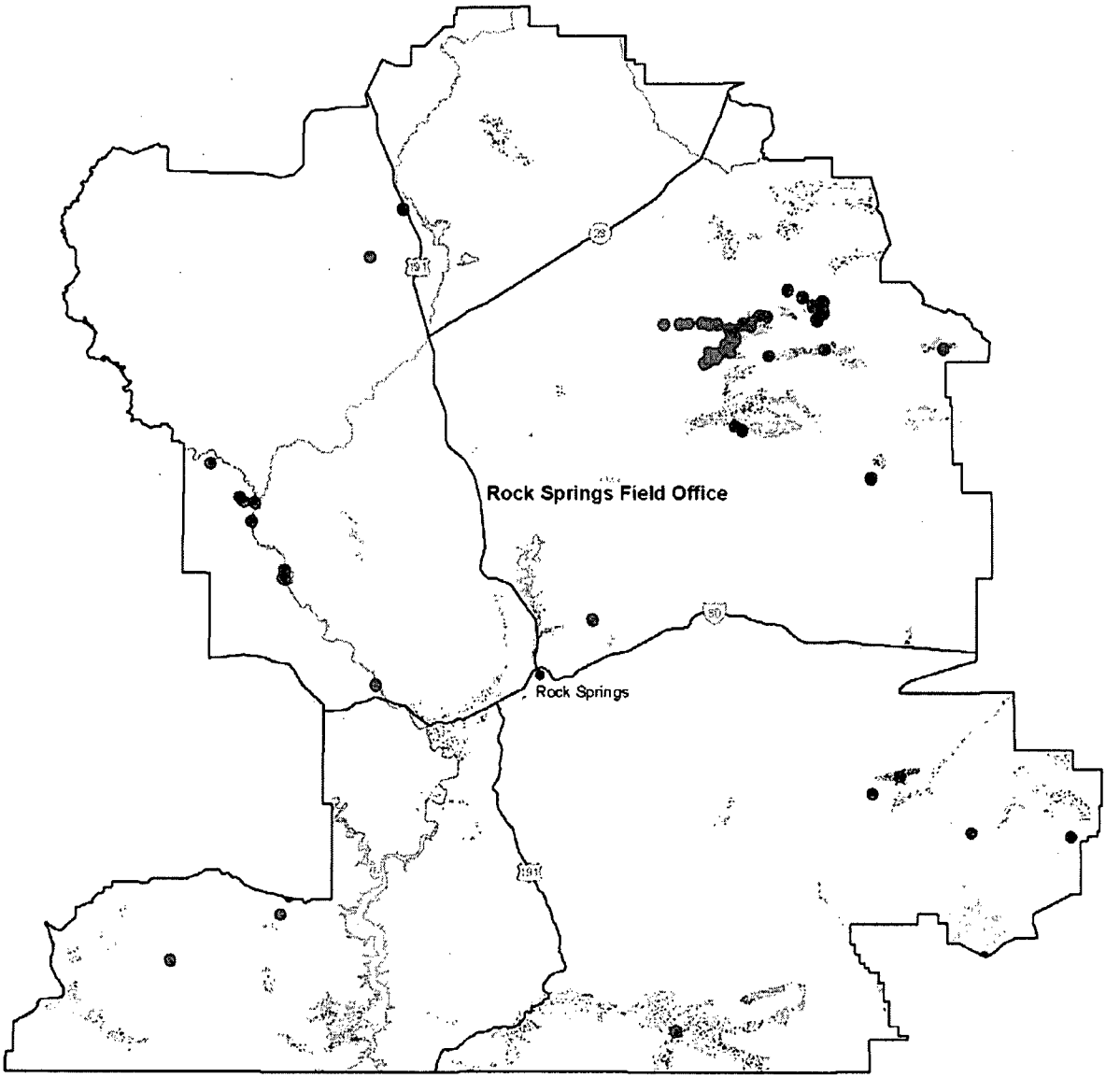
TABLE A-17 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE ROCK SPRINGS FO / GREEN RIVER RMP PLANNING AREA

Probability of mountain plover occurrence (percent)	Covered by Green River RMP			Not covered by Green River RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	3,474,731	310,713	96.3	1,395,887	97.7	5,181,330	96.7
25-50	21,819	864	0.6	4,516	0.3	27,199	0.5
50-75	23,895	1,359	0.6	5,197	0.4	30,452	0.6
75-100	92,870	3,112	2.4	23,669	1.7	119,651	2.2
Total	3,613,315	316,048	100.0	1,429,269	100.0	5,358,632	100.0

TABLE A-18 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE ROCK SPRINGS FO / GREEN RIVER RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Green River RMP			Not covered by Green River RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	92	10	81.6	15	93.8	117	83.0
25-50	0	0	0.0	0	0.0	0	0.0
50-75	17	0	13.6	0	0.0	17	12.1
75-100	6	0	4.8	1	6.3	7	5.0
Total	115	10	100.0	16	100.0	141	100.0

Map A-9 Rock Springs FO



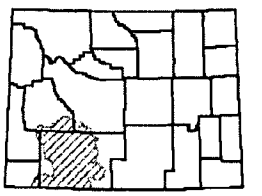
Map A-9

Wyoming Natural Diversity Database Plover Occurence Record

Probability of occurence of Plover Habitat (%)

- 0 - 24
- 25 - 49
- 50 - 74
- 75 - 100

0 10 20 30 40
Miles



No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the Bureau of Land Mangement.

Worland Field Office (Grass Creek RMP)

Potential habitat for the mountain plover in the Worland FO, Grass Creek RMP area, is shown on **Map A-10**. Potential habitat and mountain plover occurrences are shown on **Tables A-19** and **A-20** below.

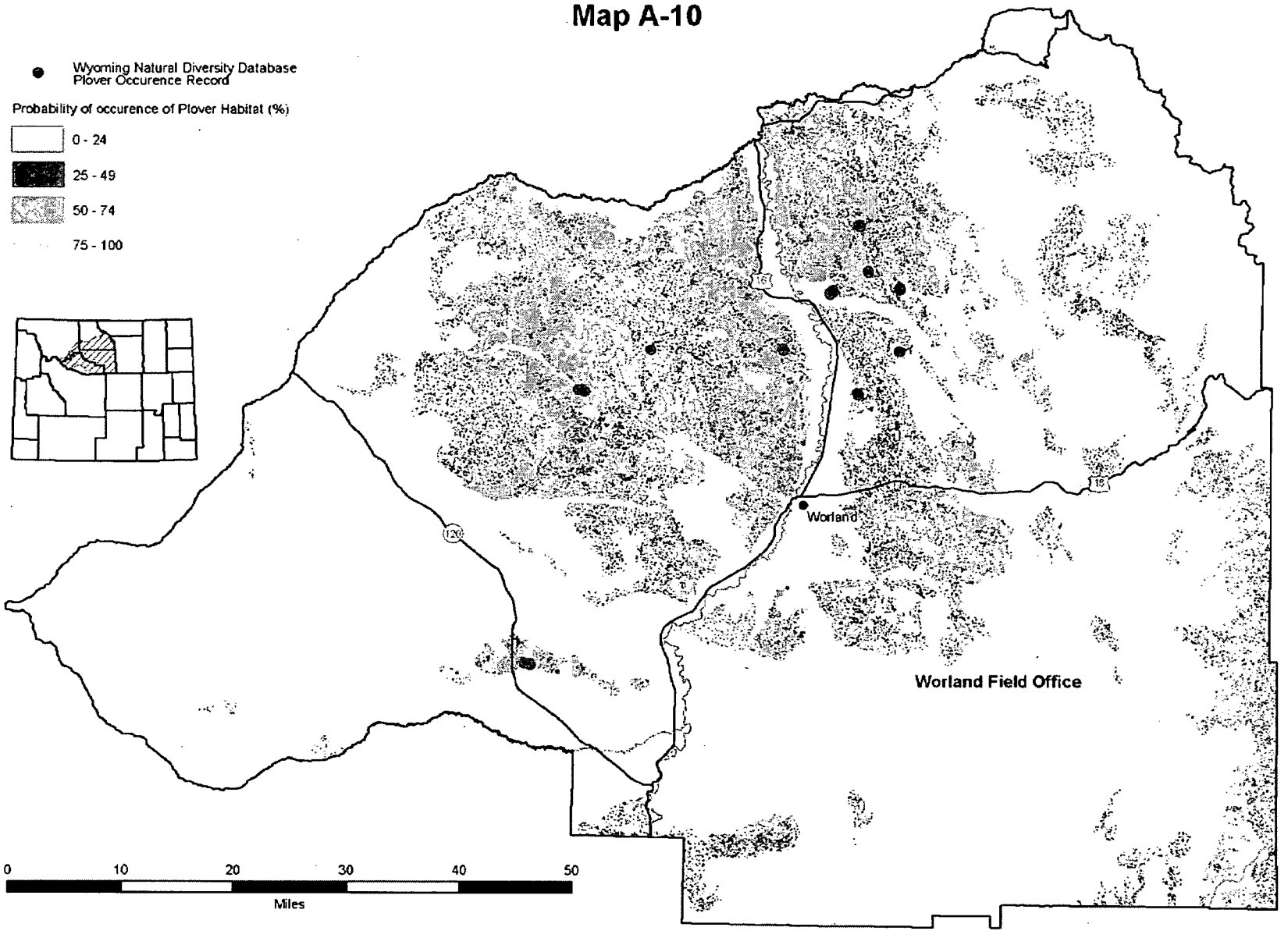
TABLE A-19 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE WORLAND FO / GRASS CREEK RMP PLANNING AREA

Probability of mountain plover occurrence (percent)	Covered by Grass Creek RMP			Not covered by Grass Creek RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	654,168	206,659	72.6	277,909	93.1	1,138,736	76.7
25-50	64,457	3,587	5.7	4,681	1.6	72,725	4.9
50-75	124,311	4,635	10.9	7,939	2.7	136,884	9.2
75-100	122,486	5,204	10.8	7,852	2.6	135,541	9.1
Total	965,421	220,084	100.0	298,381	100.0	1,483,886	100.0

TABLE A-20 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE WORLAND FO / GRASS CREEK RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Grass Creek RMP			Not covered by Grass Creek RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	5	0	62.5	0	n/a	5	62.5
25-50	1	0	12.5	0	n/a	1	12.5
50-75	2	0	25.0	0	n/a	2	25.0
75-100	0	0	0.0	0	n/a	0	0.0
Total	8	0	100.0	0	n/a	8	100.0

Map A-10 Worland Field Office - Grass Creek and Washakie RMPs



No warranty is made by the Bureau of Land Management for the use of the data for purposes not intended by the Bureau of Land Management

Worland Field Office (Washakie RMP)

Potential habitat for the mountain plover in the Worland FO, Washakie RMP area, is shown on **Map A-10**. Potential habitat and mountain plover occurrences are shown on **Tables A-21** and **A-22** below.

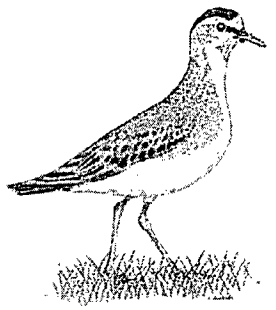
TABLE A-21 DISTRIBUTION OF POTENTIAL MOUNTAIN PLOVER HABITAT IN THE WORLAND FO / WASHAKIE RMP PLANNING AREA

Probability of mountain plover occurrence (percent)	Covered by Washakie RMP			Not covered by Washakie RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Acres	Acres	Percent	Acres	Percent	Acres	Percent
0-25	939,846	342,805	84.2	326,567	86.3	1,609,219	84.6
25-50	51,086	13,536	4.2	12,616	3.3	77,238	4.1
50-75	75,860	7,029	5.4	12,624	3.3	95,513	5.0
75-100	65,240	27,636	6.1	26,488	7.0	119,364	6.3
Total	1,132,032	391,006	100.0	378,295	100.0	1,901,334	100.0

TABLE A-22 DISTRIBUTION OF MOUNTAIN PLOVER OCCURRENCES IN THE WORLAND FO / WASHAKIE RMP PLANNING AREA

Potential mountain plover habitat type	Covered by Washakie RMP			Not covered by Washakie RMP		Total	
	BLM surface	BLM minerals	Total BLM	Other surface/minerals			
	Number	Number	Percent	Number	Percent	Number	Percent
0-25	7	0	53.8	0	0.0	7	50.0
25-50	2	0	15.4	0	0.0	2	14.3
50-75	3	0	23.1	1	100.0	4	28.6
75-100	1	0	7.7	0	0.0	1	7.1
Total	13	0	100.0	1	100.0	14	100.0

7.0 APPENDIX B – MOUNTAIN PLOVER SURVEY GUIDELINES



MOUNTAIN PLOVER SURVEY GUIDELINES
U.S. Fish and Wildlife Service
March 2002

The mountain plover (*Charadrius montanus*) is a small bird (17.5 cm, 7 in.) about the size of a killdeer (*C. vociferus*). It is light brown above with a lighter colored breast, but lacks the contrasting dark breast-belt common to many other plovers. During the breeding season it has a white forehead and a dark line between the beak and eye, which contrasts with the dark crown.

Mountain plover breeding habitat includes short-grass prairie and shrub-steppe landscapes; dryland, cultivated farms; and prairie dog towns. Plovers usually nest on sites where vegetation is sparse or absent, conditions that can be created by herbivores, including domestic livestock and prairie dogs. Vegetation in shortgrass prairie sites is typically less than 4 inches tall. Nest sites within the shrub-steppe landscape are also confined to areas of little to no vegetation, although surrounded by areas visually dominated by shrubs. Commonly, nest sites within shrub-steppe areas are on active prairie dog towns. Nests are commonly located near a manure pile or rock. In addition to disturbance by prairie dogs or livestock, nests have also been found on bare ground created by oil and gas development activities, and on dryland, cultivated agriculture in the southern part of their breeding range. Mountain plovers are rarely found near water. Positive indicators for mountain plovers therefore include level terrain, prairie dogs, bare ground, *Opuntia* pads, cattle, widely spaced plants, and horned larks. It would be unusual to find mountain plovers on sites characterized by irregular or rolling terrain; dense, matted vegetation; grass taller than 4 inches, wet soils, or the presence of killdeer.

These guidelines were developed by Service biologists and Dr. Fritz Knopf, USGS-BRD. Keep in mind these are guidelines - please call the local Fish and Wildlife Service, Ecological Services office, if you have any suggestions.

GENERAL GUIDELINES FOR SURVEYS

On February 16, 1999, the Service proposed the mountain plover for federal listing as threatened. Because listing of this species is proposed, the Service may recommend surveys for mountain plovers to better define nesting areas, and minimize potential negative impacts. The Service may recommend surveys for mountain plovers in all suitable habitat, as well as avoidance of nesting areas, to minimize impact to plovers in a site planned for development. While the Service believes that plover surveys, avoidance of nesting and brood rearing areas, and timing restrictions (avoidance of important areas during nesting) will lessen the chance of direct impacts to and mortality of individual mountain plovers in the area, these restrictions do nothing to mitigate indirect effects, including changes in habitat suitability and habitat loss. Surveys are, however, a necessary starting point. The Service has developed the following 3 survey guidelines, depending on whether the intent is to determine the presence or absence of plovers at a

site during the nesting season for permanent and short term projects, or to determine the density of nesting plovers at known nesting sites.

Survey Protocol

Surveys for mountain plovers are conducted during the period where the highest numbers of plovers are likely to be tending nests and territories, and therefore are most likely to be detected. Throughout their range, these dates are generally from May 01 through June 15. However, seasonal restrictions for ground disturbing activities in suitable mountain plover nesting habitats are usually longer than the survey dates. The longer seasonal restrictions allow for protection of early nesting birds, and very young chicks which tend to sit still to avoid detection during the first week post-hatch. Since specific nesting dates across the breeding range of the plover vary according to latitude and local weather, the project proponent or the land management agency should contact the local U.S. Fish and Wildlife Service Office to determine what seasonal restrictions apply for specific projects.

Two types of surveys may be conducted: 1) surveys to determine the presence/absence of breeding plovers (i.e., displaying males and foraging adults), or 2) surveys to determine nest density. The survey type chosen for a project and the extent of the survey area (i.e., beyond the edge of the construction or operational ROW) will depend on the type of project activity being analyzed (e.g., construction, operation) and the users intent. One methodology outlines a breeding survey that was used in northeastern Colorado to establish the density of occupied territories, based on displaying male plovers or foraging adults. The other was developed to only determine whether plovers occupy an area.

Techniques Common to Each Survey Method

- Conduct surveys during early courtship and territorial establishment. Throughout the breeding range, this period extends from approximately mid-April through early July. However, the specific breeding period, and therefore peak survey days, depends on latitude, elevation, and weather.
- Conduct surveys between local sunrise and 1000 and from 1730 to sunset (periods of horizontal light to facilitate spotting the white breast of the adult plovers).
- Drive transects within the project area to minimize early flushing. Flushing distances for mountain plovers may be within 3 meters for vehicles, but plovers often flush at 50 to 100 meters when approached by humans on foot.
- Use of a 4-wheel drive vehicle is preferable where allowed. Use of ATVs has proven highly successful in observing and recording displaying males. Always seek guidance from land management agencies regarding use of vehicles on public lands, and always obtain permission of private landowners before entering their lands.

- **Stay in or close to the vehicle when scanning. Use binoculars to scan and spotting scopes to confirm sightings. Do not use scopes to scan.**
- **Do not conduct surveys in poor weather (i.e., high wind, precipitation, etc.).**
- **Surveys conducted during the courtship period should focus on identifying displaying or calling males, which would signify breeding territories.**
- **For all breeding birds observed, conduct additional surveys immediately prior to construction activities to search for active nest sites.**
- **If an active nest is located, an appropriate buffer area should be established to prevent direct loss of the nest or indirect impacts from human-related disturbance. The appropriate buffer distance will vary, depending on topography, type of activity proposed, and duration of disturbance. For disturbances including pedestrian foot traffic and continual equipment operations, a 1/4 mile buffer is recommended.**

SURVEY TO DETERMINE PRESENCE/ABSENCE

Large scale/long term projects

1. Conduct the survey between May 1 and June 15, throughout the breeding range.

2. Visual observation of the area should be made within 1/4 mile of the proposed action to detect the presence of plovers. All plovers located should be observed long enough to determine if a nest is present. These observations should be made from within a stationary vehicle, as plovers do not appear to be wary of vehicles. Because this survey is to determine presence/absence only, and not calculate statistical confidence, there is no recommended distance interval for stopping the vehicle to scan for birds. Obviously numerous stops will be required to conduct a thorough survey, but number of stops should be determined on a project and site-specific basis.

3. If no visual observations are made from vehicles, the area should be surveyed on ATV's. Extreme care should be exercised in locating plovers due to their highly secretive and quiet nature. Surveys by foot are not recommended because plovers tend to flush at greater distances when approached using this method. Finding nests during foot surveys is more difficult because of the greater flushing distance.

4. A site must be surveyed 3 times during the survey window, with each survey separated

by at least 14 days. The need for 3 surveys is to capture the entire nesting period, with the intent of reducing the risk of concluding the site is not nesting habitat by an absence of nesting birds during a single survey.

5. Initiation of the project should occur as near to completion of the survey as possible. For example, seismic exploration should begin within 2 days of survey completion. A 14 day period may be appropriate for other projects.

6. If an active nest is found in the survey area, the planned activity should be delayed 37 days, or seven days post-hatching. If a brood of flightless chicks is observed, activities should be delayed at least seven days.

Short-term, linear projects

The Service recognizes that many projects have minimal, if any impact on mountain plover nesting habitat, and that these projects may only be present in suitable habitat for a day or less. In order to address concerns from project proponents about delays associated with mountain plover surveys for these projects, the Service has developed the following guidelines. However, the Service encourages the project proponent to plan these projects so that all work occurs outside the plover nesting season.

Short-term linear projects are defined as projects which move through an area within the course of a day and result in no permanent habitat alteration (e.g., vegetative/topographic changes), and no permanent project-related above ground features. Short-term, linear projects may include activities such as pipelines (4 inch diameter or less), fiber optic cables, and seismic exploration. For these projects, all ROW surveying/staking activities should be completed before April 1 to avoid discouraging plovers from nesting in suitable habitat. If ROW surveying cannot be completed before April 1, surveyors will need to coordinate with the lead Federal agency before entering these areas, and a plover survey may be required prior to ROW demarcation. For these projects, the presence/absence guidelines above should adhere to the dates below.

1. **April 10 through July 10** - a plover survey will need to be completed 1- 3 days prior to any construction activity, including initial brush clearing, to avoid direct take of mountain plovers. The survey should include the route and a 1/4 mile buffer on either of the project corridor. If there is a break in construction activity in these areas of more than 3 days (e.g., between pipe stringing, trenching, or welding), an additional plover survey is necessary before construction activity can resume after that break in activity. Generally, mountain plovers are establishing territories and nests in April, and from late June to early July young chicks commonly freeze in place to avoid detection, increasing their vulnerability to direct take. After July 10, most mountain plover chicks are sufficiently mobile to reduce the risk of direct take.

2. If an active nest is found in the survey area, the planned activity should be delayed 37 days, or seven days post-hatching. If a brood of flightless chicks is observed, activities should be delayed at least seven days.

SURVEY TO DETERMINE DENSITY OF NESTING MOUNTAIN PLOVERS

We are assuming people will have received training on point counts in general before using this specialized point count technique adapted to mountain plovers.

Establishing Transects

1. Identify appropriate habitat and habitat of interest within geographic areas of interest.

2. Upon arriving in appropriate habitat, drive to a previously determined random starting point.

3. For subsequent points, drive a previously determined random distance of 0.3, 0.4 or 0.5 miles.

4. Each transect of point counts should contain a minimum of 20 points.

Conducting The Point Counts

1. Conduct counts between last week in June to July 4th at elevations equivalent to the eastern plains of Colorado (i.e., about 5,000 feet). Timing of counts at other elevations should be coordinated with the local FWS office.

2. Only 1 counter is used. Do not use a counter and recorder or other combinations of field help. Drivers are okay as long as they don't help spot plovers.

3. If an adult mountain plover is observed, plot occupied territories on a minimum of 1:24,000 scale map and on a ROW diagram or site grid (see attached). The ROW diagram will be at a greater level of detail, depicting the location of breeding birds (and possible nest sites) relative to ROW centerline, construction boundary, and applicable access roads.

4. Estimate or measure distances (in meters) to all mountain plovers. Method used should be noted, e.g., estimates w/distance training, estimates w/o distance training, rangefinder or measured with tape measure, etc.

5. Record "fly-overs" as "FO" in the distance column of the data sheet.

6. If you disturb a mountain plover while approaching the point, estimate the distance from point-center to the spot from which the bird was flushed.

7. Conduct counts for 5 minutes with a 3 minute subsample to standardize with BBS.

8. Stay close to your vehicle while scanning.

Recording Data

Record the following information <u>AT EVERY POINT, EVERY DAY</u>.

- start time
- unique point code (don't duplicate within a field crew or across dates)
- number of mountain plovers and distance to each
- land use and/or habitat type (e.g., fallow wheat, plowed, shortgrass)

- temperature, Beaufort wind, and sky conditions (clear, partly cloudy, overcast)

Information on the data sheet somewhere

- your name and address
- date

Record for each point at some point during the census

- a detailed location description of each point count including road number, distance to important intersections
- record transect and point locations on USGS county maps
- Universal Transverse Mercator from maps or GPS are useful

GENERAL HABITAT INDICATORS

Positive habitat images

Stock tank (non-leaking, leaking tanks often attract killdeer)

Flat (level or "tilted") terrain

Burned field/prairie/pasture

Bare ground (minimum of 30 percent)

"Spaced" grass plants

Prairie dog colonies

Horned larks

Cattle

Heavily grazed pastures

Opuntia pads visible

Negative habitat images

Killdeer present (indicating less than optimal habitat)

Hillsides or steep slope

Prominent, obvious low ridge

Leaky stock tanks

Vegetation greater than 4 inches in height in short-grass prairie habitat

Increasing presence of tall shrubs

Matted grass (i.e., minimal bare ground)

Lark buntings

8.0 APPENDIX C – 2004 MOUNTAIN PLOVER PROJECT

Operating Instructions
Interagency Mountain Plover Project Screen

Bureau of Land Management, Forest Service, National Park Service, Fish and Wildlife Service

The Mountain Plover Project Screen was developed to 1) more proactively and consistently manage and conserve the mountain plover (*Charadrius montanus*) during federal activities on public lands administered by the Bureau of Land Management, U.S. Forest Service, and U.S. Fish and Wildlife Service, and 2) provide a tool for streamlining agency review and implementation of activities. The Screen highlights the activities under each program area that represent potential effects to the mountain plover and which ones can be expedited because they are believed to have minimal to no impact to the plover.

The Wyoming Level 2 team called for the development of a Mountain Plover Project Screen in early 2002, based on a request arising out of the Level 1 teams that regularly deal with mountain plover issues. At that time, the mountain plover was proposed for listing under the Endangered Species Act. The Level 2 team identified an initial list of candidates to solicit for help in developing the Screen. A 'Screen' team was then assembled shortly after by members of the Regional Coordination and Technical Team (Paul Winkle/FWS, Jeff Carroll/BLM, Peter McDonald/USFS). The team met for several days in Fort Collins in spring 2002 and consisted of people who were both available on short notice and possessed exceptional management and regulatory experience with the mountain plover or the programs to be addressed in the Screen. Due to schedule constraints, some eventual contributors could not directly participate at Fort Collins, but did provide information for that meeting or commented on the early raw products developed from it. The Colorado Level 2 Team subsequently became aware of the ongoing effort to develop a Screen and expressed a desire to participate. In early 2003, release of a Working Draft of the Screen was endorsed by the Level 2 teams for Colorado and Wyoming and distributed across all interagency units with mountain plover issues.

In September 2003, the Fish and Wildlife Service withdrew their proposal to list the mountain plover. However, the plover remains an agency-designated Sensitive Species within both the Forest Service and BLM. The basic agreements captured across the agencies in the Screen concerning activity effects and management considerations do not change because of the listing decision. However, some modifications to the Screen were needed based on comments to the 2003 Working Draft and the current need for the Screen as a tool to assist with management of the mountain plover as a Sensitive Species within the agencies. The species also remains protected under the federal Migratory Bird Treaty Act.

The Mountain Plover Project Screen addresses six program or issue areas: *Access, Energy Development, Rangeland Management, Recreation, Roads and Road Maintenance,* and *National Fire Plan.* The Screen consists of a series of decision trees, one tree for each program. The user needs to first take an activity or project through the Access tree to determine if they can proceed to the program-specific tree most relevant to that project or action. The objective is to use a

decision tree to identify which component activities associated with the project may affect the mountain plover and whether the effect is likely of minimal impact to the plover. Other activities that fall outside of the screen are either 1) ones that may have more serious impacts to the plover and need further consideration in project planning, 2) ones for which there was insufficient information for the species experts to determine the level of impact, or 3) ones that were not considered in the current version of the screen and may be incorporated as appropriate in future revisions. Further details are provided in the Screen's Explanatory Notes.

The Mountain Plover Project Screen and its use should be considered a tool and does not substitute for the application of sound science, biological reasoning and judgment. This process is not a substitute for agency biological evaluation procedures and reporting. The Screen is to be used in conjunction with, and not in lieu of, proper biological analyses. Activity analysis should be completed or overseen as usual by a qualified biologist and documented in the appropriate agency biological report. The Screen can be used to verify the results of the biological analysis, as well as represent a tool for designing projects with the mountain plover in mind. The Screen should be viewed as flexible and not a subsitute for local knowledge about the mountain plover and activity effects. Local information may suggest different effects or project design considerations than identified in the Screen. Users that deviate from the guidelines in the Screen should, however, document their rationale for deviating from the Screen and proceed accordingly. **Information used to depart from the Screen should be forwarded to your agency representative on the Regional Coordination and Technical Team** for streamlining (see below) for consideration in future refinements of the Screen.

The Mountain Plover Project Screen is intended to address new projects or conditions, rather than actions that are completed or mostly completed (~75% of the planning is completed). However, it can be used immediately for new projects, or ongoing activities to help with project design and streamlining biological review of projects. The Screen does not cover every activity in each program area, and it should not be used for activities that do not fit the Screen. Clear understanding and description of the proposed action and all connected activities under that action will help ensure the Screen is used properly. Additional activities not currently covered in the Screen may be added as appropriate to future versions based on feedback from users.

The agencies are in agreement about determinations for projects and activities in this Screen. If the Screen does not appear to properly fit a project, fails to meet any of the screening criteria, or the project biologist determines that local conditions warrant more in-depth review or a different conclusion than indicated by the Screen, the project reverts to traditional agency procedures. Any project that is determined by use of the Screen to fall outside the Screen will similarly revert to the traditional procedures.

This Mountain Plover Project Screen is a dynamic tool that will be re-visited periodically and updated as needed based on new comments or new information on the mountain plover or activities. Reviews and any updates to the Screen will be lead by the Regional Coordination and Technical Team (Jeff Carroll/WY BLM, 307/ 775-6090, Jeff_Carroll@blm.gov); Wes Anderson/CO BLM, 303/ 239-3608, wes_anderson@blm.gov; Ari Cornman/FWS, 303/ 236-4254, ari_cornman@fws.gov), Cay Ogden/NPS, 303/ 969-2929, Cay_Ogden@nps.gov), or Peter McDonald/FS, 303/ 275-5029, petermcdonald@fs.fed.us).

decision tree to identify which component activities associated with the project may affect the mountain plover and whether the effect is likely of minimal impact to the plover. Other activities that fall outside of the screen are either 1) ones that may have more serious impacts to the plover and need further consideration in project planning, 2) ones for which there was insufficient information for the species experts to determine the level of impact, or 3) ones that were not considered in the current version of the screen and may be incorporated as appropriate in future revisions. Further details are provided in the Screen's Explanatory Notes.

The Mountain Plover Project Screen and its use should be considered a tool and does not substitute for the application of sound science, biological reasoning and judgment. This process is not a substitute for agency biological evaluation procedures and reporting. The Screen is to be used in conjunction with, and not in lieu of, proper biological analyses. Activity analysis should be completed or overseen as usual by a qualified biologist and documented in the appropriate agency biological report. The Screen can be used to verify the results of the biological analysis, as well as represent a tool for designing projects with the mountain plover in mind. The Screen should be viewed as flexible and not a subsitute for local knowledge about the mountain plover and activity effects. Local information may suggest different effects or project design considerations than identified in the Screen. Users that deviate from the guidelines in the Screen should, however, document their rationale for deviating from the Screen and proceed accordingly. **Information used to depart from the Screen should be forwarded to your agency representative on the Regional Coordination and Technical Team** for streamlining (see below) for consideration in future refinements of the Screen.

The Mountain Plover Project Screen is intended to address new projects or conditions, rather than actions that are completed or mostly completed (~75% of the planning is completed). However, it can be used immediately for new projects, or ongoing activities to help with project design and streamlining biological review of projects. The Screen does not cover every activity in each program area, and it should not be used for activities that do not fit the Screen. Clear understanding and description of the proposed action and all connected activities under that action will help ensure the Screen is used properly. Additional activities not currently covered in the Screen may be added as appropriate to future versions based on feedback from users.

The agencies are in agreement about determinations for projects and activities in this Screen. If the Screen does not appear to properly fit a project, fails to meet any of the screening criteria, or the project biologist determines that local conditions warrant more in-depth review or a different conclusion than indicated by the Screen, the project reverts to traditional agency procedures. Any project that is determined by use of the Screen to fall outside the Screen will similarly revert to the traditional procedures.

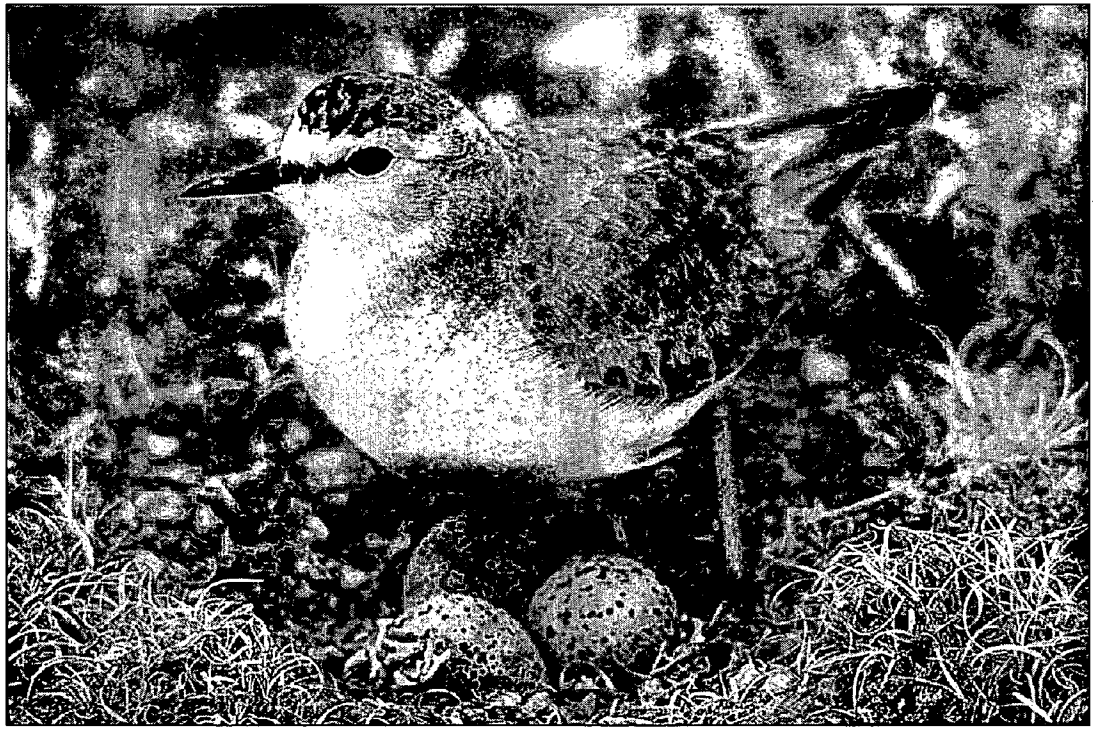
This Mountain Plover Project Screen is a dynamic tool that will be re-visited periodically and updated as needed based on new comments or new information on the mountain plover or activities. Reviews and any updates to the Screen will be lead by the Regional Coordination and Technical Team (Jeff Carroll/WY BLM, 307/ 775-6090, Jeff_Carroll@blm.gov); Wes Anderson/CO BLM, 303/ 239-3608, wes_anderson@blm.gov; Ari Cornman/FWS, 303/ 236-4254, ari_cornman@fws.gov), Cay Ogden/NPS, 303/ 969-2929, Cay_Ogden@nps.gov), or Peter McDonald/FS, 303/ 275-5029, petermcdonald@fs.fed.us).

Mountain Plover

Project Screen

Region 2

Region 6



CO, NE, WY

Intermountain

MOUNTAIN PLOVER SCREEN
Explanatory Notes

The mountain plover is an agency-designated sensitive species in FS Region 2 and BLM Colorado and Wyoming. There are 3 possible outcomes or determinations using the screen:

1) NI: No Impact
2) OMPS: 'Outside the Mountain Plover Screen,' either because there is insufficient information to make a determination using the screen, or because the effects of the activity may rise to a level that they cannot be resolved using the screen and merit further attention, or a qualified biologist using sound biological reasoning and judgment from local knowledge of the mountain plover and land use comes to a different conclusion than the plover screen and documents their rationale, OR
3) MI: Consistent with agency determination language for Sensitive Species, this equates to "May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend to federal listing or a loss of species viability rangewide," (USFS) or "May impact, but not likely to contribute to the need for federal listing" (BLM).

To determine when a project/action occurs "within or adjacent to mountain plover habitat" for the purposes of using this screen, the answer should be "No" to ALL of the following questions:

1) Will the activity occur in areas with dense vegetative cover (>30% herb or shrub cover)?,
2) Are trees present within ¼ mile of the project area?, and
3) Is the topography rolling (>5% slope) or broken (cliffs, escarpments, etc.)?

All component activities associated with an action should be run through the screen to ensure the entire action and full range of potential effects is considered and evaluated.

Access is integral to all program areas, so users of the screen need to first run the proposed action through the Access decision tree before proceeding with one of the program-specific decision trees (i.e., Recreation, Range Management, Roads & Road Maintenance, Energy Development, or National Fire Plan). An OMPS determination using the Access tree indicates to the user that component of the action deserves further attention before continuing

MOUNTAIN PLOVER SCREEN
Explanatory Notes, cont.

through the screen. A determination of MI or NI using the Access tree should be viewed as a 'green light' to proceed taking the entire action through the rest of the plover screen. Although the activity may fall outside the screen for Access (cannot get to a MI or NI box), there is value to complete the program-specific screen and understand how the other components of the action fit the screen, or how the activity could be adjusted to address the effects raised in these parts of the screen and thus expedite project implementation.

The mountain plover breeding season is defined as April 10 through July 10.

"Pre-project" surveys, unless otherwise noted, refers to surveys conducted to established protocol (e.g. FWS protocol) and timed in a way to confirm presence/absence of nesting plovers when the activity is actually implemented.

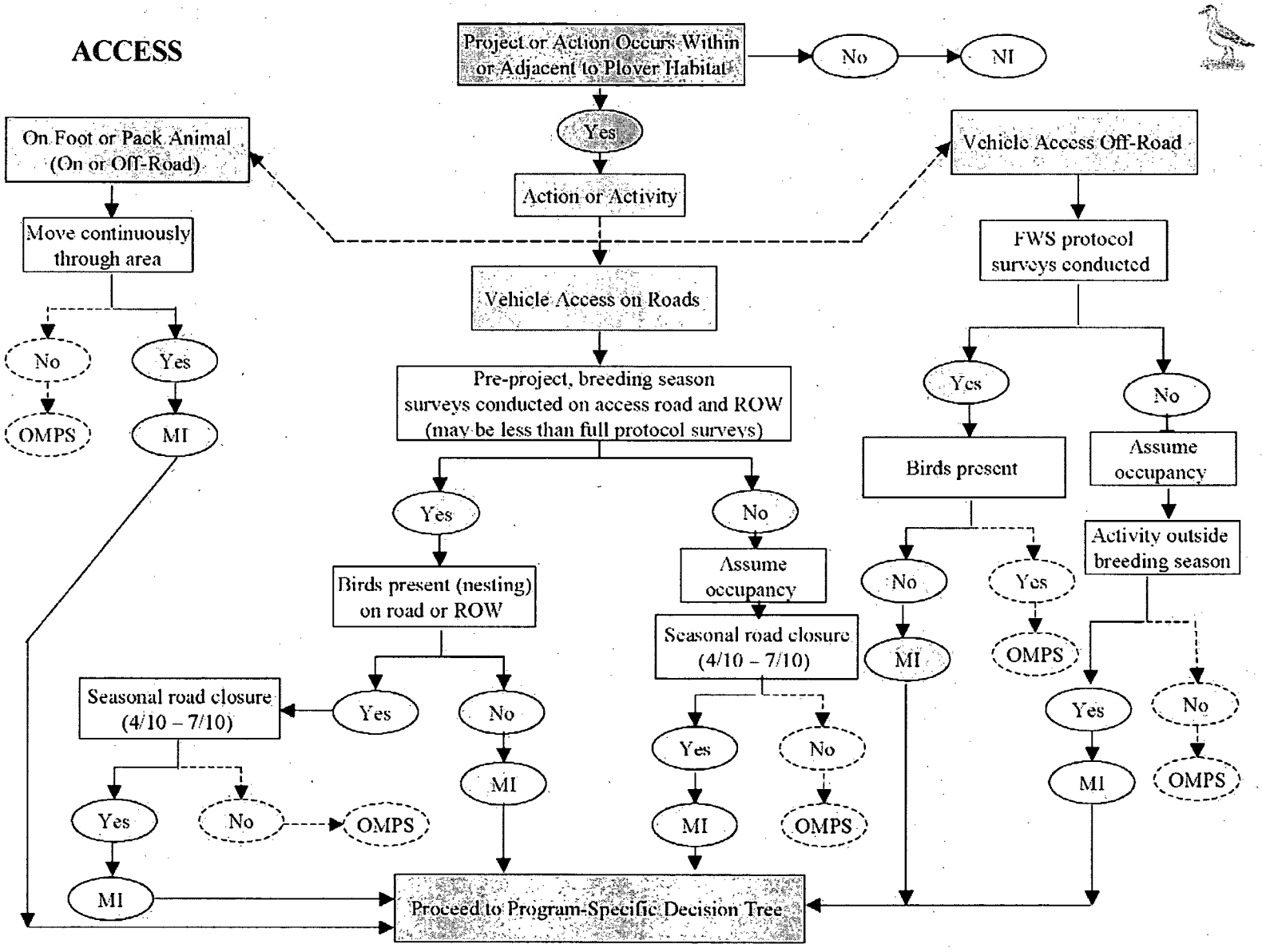
[Cover photo of mountain plover on nest by Fritz Knopf, USGS, on the Pawnee National Grassland.]

ACCESS
Decision Tree Explanatory Notes

A proposed action should be run through this screen first. If the determination is "May Impact" (MI) for access concerns, the activity needs to then be run through the program-specific screen to evaluate the 'non-access' components of the project. The definition of MI is provided by agency (FS and BLM) in the Explanatory Notes for the Mountain Plover screen.

Access refers to new activities and structures, or activities outside normal use patterns in the project area (e.g. as defined in NEPA documents). The agencies agreed the screen would identify as a baseline the potential effects to the plover from development of new roads, or in the case of existing roads from appreciable increases in use resulting from road improvements or other project-related decisions. Flexibility has been provided for local biologists working with other staffs on their units to identify whether a projected increase in use of an existing road or due to road improvement constituted an appreciable increase that the Screen alone cannot resolve.

Pre-project road surveys should follow the FWS protocol to the extent the procedures in the protocol apply to roads and rights-of-way. The main point is to conduct appropriate reconnaissance surveys as determined by the local agency biologist that are timed appropriately to confirm presence/absence of plovers on these narrow bands and evaluate the potential impact from people and vehicles that use that same road.


ACCESS
Project or Action Occurs Within or Adjacent to Plover Habitat
No
NI
Yes
Action or Activity
On Foot or Pack Animal (On or Off-Road)
Vehicle Access Off-Road
Move continuously through area
FWS protocol surveys conducted
Vehicle Access on Roads
No
Yes
OMPS
MI
Pre-project, breeding season surveys conducted on access road and ROW (may be less than full protocol surveys)
Yes
No
Birds present
Assume occupancy
Yes
No
Activity outside breeding season
Birds present (nesting) on road or ROW
Assume occupancy
No
Yes
Seasonal road closure (4/10 – 7/10)
MI
OMPS
Seasonal road closure (4/10 – 7/10)
Yes
No
Yes
No
Yes
No
MI
MI
OMPS
Yes
No
OMPS
MI
OMPS
MI
Proceed to Program-Specific Decision Tree

ENERGY DEVELOPMENT
Decision Tree Explanatory Notes

Activities under this program should first be run through the Access screen before proceeding here.

"Other construction" activities include: Road construction; Central Delivery Point (POD building for CBM, central tank battery site, injection site, trailer site, pipe yards, compressor sites); Reservoir for CBM water; Installation of pivot irrigation, misters, atomizers for CBM water; Stacking drilling equipment in habitat; Gravel pit development.

Synchronized Drilling refers to more than one active drilling operation occurring simultaneously within ½ (0.5) mile of each other.

MI(b) = May impact, but expected to be "beneficial" to the mountain plover.

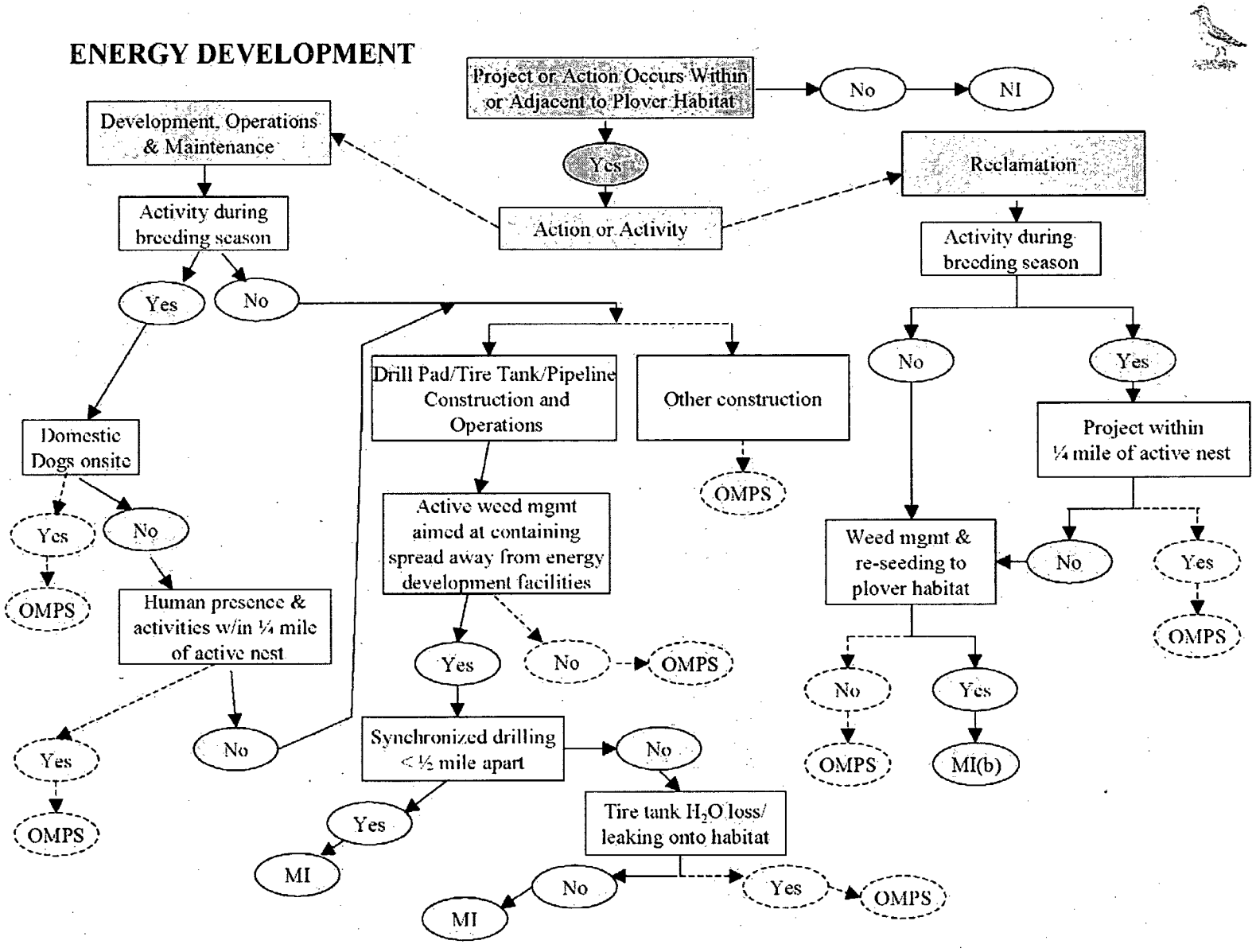
ENERGY DEVELOPMENT
Decision Tree Explanatory Notes

Activities under this program should first be run through the Access screen before proceeding here.

"Other construction" activities include: Road construction; Central Delivery Point (POD building for CBM, central tank battery site, injection site, trailer site, pipe yards, compressor sites); Reservoir for CBM water; Installation of pivot irrigation, misters, atomizers for CBM water; Stacking drilling equipment in habitat; Gravel pit development.

Synchronized Drilling refers to more than one active drilling operation occurring simultaneously within ½ (0.5) mile of each other.

MI(b) = May impact, but expected to be "beneficial" to the mountain plover.


ENERGY DEVELOPMENT
Project or Action Occurs Within or Adjacent to Plover Habitat
No
NI
Yes
Development, Operations & Maintenance
Reclamation
Action or Activity
Activity during breeding season
Yes
No
Activity during breeding season
No
Yes
Drill Pad/Tire Tank/Pipeline Construction and Operations
Other construction
OMPS
Project within ¼ mile of active nest
Domestic Dogs onsite
Yes
No
OMPS
Active weed mgmt aimed at containing spread away from energy development facilities
Weed mgmt & re-seeding to plover habitat
No
Yes
OMPS
Human presence & activities w/in ¼ mile of active nest
Yes
No
OMPS
Yes
No
OMPS
No
Yes
OMPS
MI(b)
Synchronized drilling < ½ mile apart
No
Yes
OMPS
Tire tank H_2O loss/ leaking onto habitat
Yes
MI
No
MI
Yes
OMPS

RANGELAND MANAGEMENT
Decision Tree Explanatory Notes

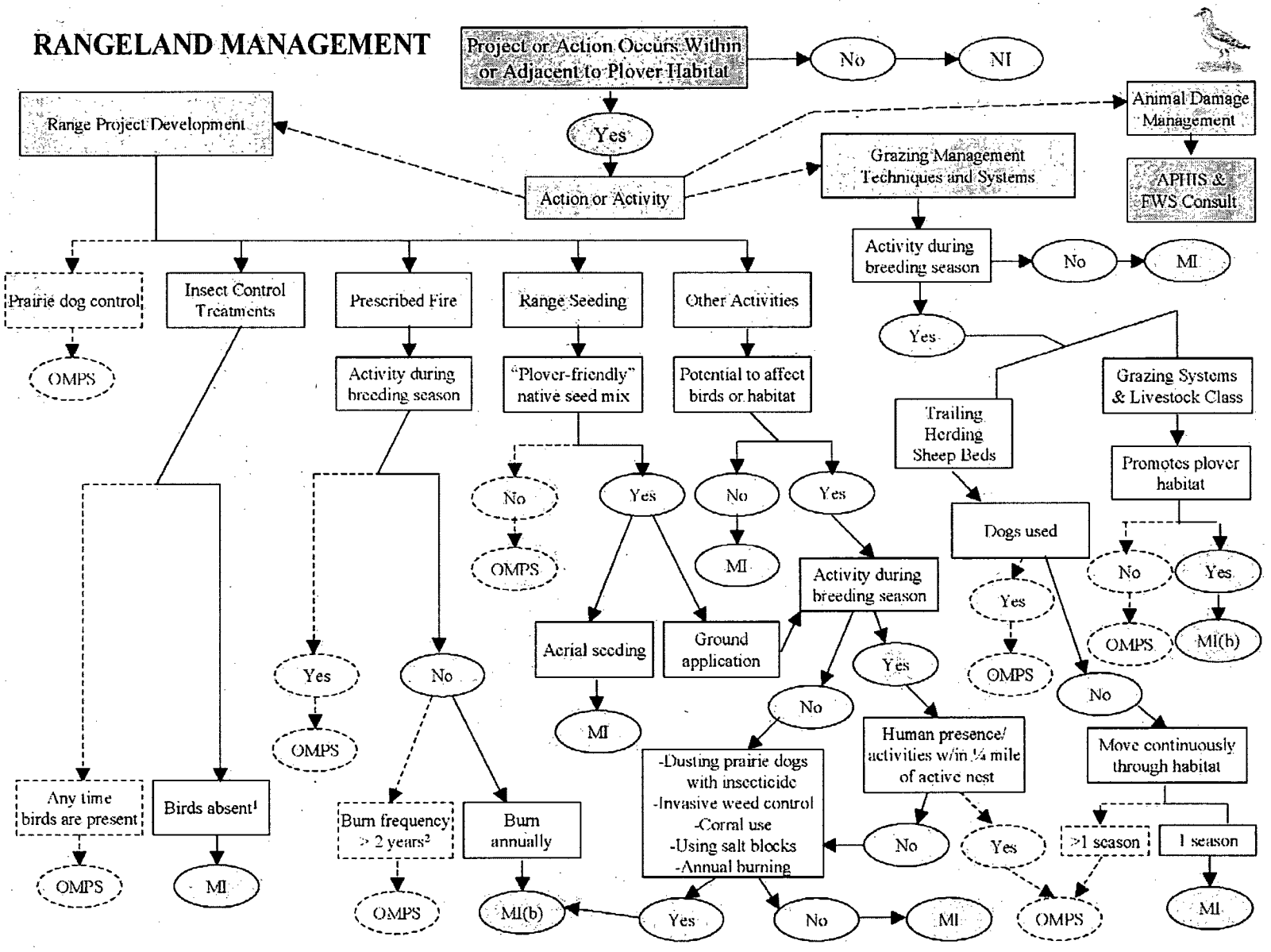
Activities under this program should first be run through the Access screen before proceeding here.

"Other" activities include all of the following and their associated component activities: Water development construction and emergency repairs (water pipelines, springs, storage tanks & watering troughs, guzzlers, pits, reservoirs, wells, temporary water tanks and water hauling); Fence construction, enclosures/exclosures, reconstruction, and maintenance (electric fence, woven wire, barbed wire, buck & pole, post & pole, let-down, etc.); Rangeland restoration; Post-fire rehabilitation; Chemical, mechanical, cultural and biological weed control; Construction of temporary and permanent corrals; Placement of salt/supplemental feed by cross country travel or on existing roads or trails by foot, horseback, vehicles; Use of salt blocks and supplemental feed by livestock, wild horses and wildlife; Road maintenance, vegetation rehabilitation, and all other range management road maintenance.

[1]Plovers have either not returned for the year or have migrated out of the area after completion of breeding and fledging periods.

[2]Burning results in short-term removal of vegetation which is assumed to be beneficial to plovers. However, burning will also stimulate vegetation growth and could be detrimental to plovers if burning is infrequent or discontinued.

MI(b) = May impact, but expected to be "beneficial" to the mountain plover.


RANGELAND MANAGEMENT
Project or Action Occurs Within or Adjacent to Plover Habitat
No
NI
Yes
Range Project Development
Action or Activity
Animal Damage Management
APHIS & FWS Consult
Grazing Management Techniques and Systems
Activity during breeding season
No
MI
Yes
Prairie dog control
Insect Control Treatments
Prescribed Fire
Range Seeding
Other Activities
OMPS
Activity during breeding season
"Plover-friendly" native seed mix
Potential to affect birds or habitat
Trailing Herding Sheep Beds
Grazing Systems & Livestock Class
Promotes plover habitat
No
Yes
No
Yes
OMPS
MI
Dogs used
Activity during breeding season
Yes
No
Yes
OMPS
MI(b)
Yes
OMPS
Aerial seeding
Ground application
Yes
OMPS
No
Yes
No
MI
No
Human presence/ activities w/in ¼ mile of active nest
Move continuously through habitat
Any time birds are present
Birds absent[1]
Burn frequency > 2 years[2]
Burn annually
-Dusting prairie dogs with insecticide
-Invasive weed control
-Corral use
-Using salt blocks
-Annual burning
No
Yes
>1 season
1 season
OMPS
MI
OMPS
MI(b)
Yes
No
MI
OMPS
MI

RECREATION
Decision Tree Explanatory Notes

Activities under this program should first be run through the Access screen before proceeding here.

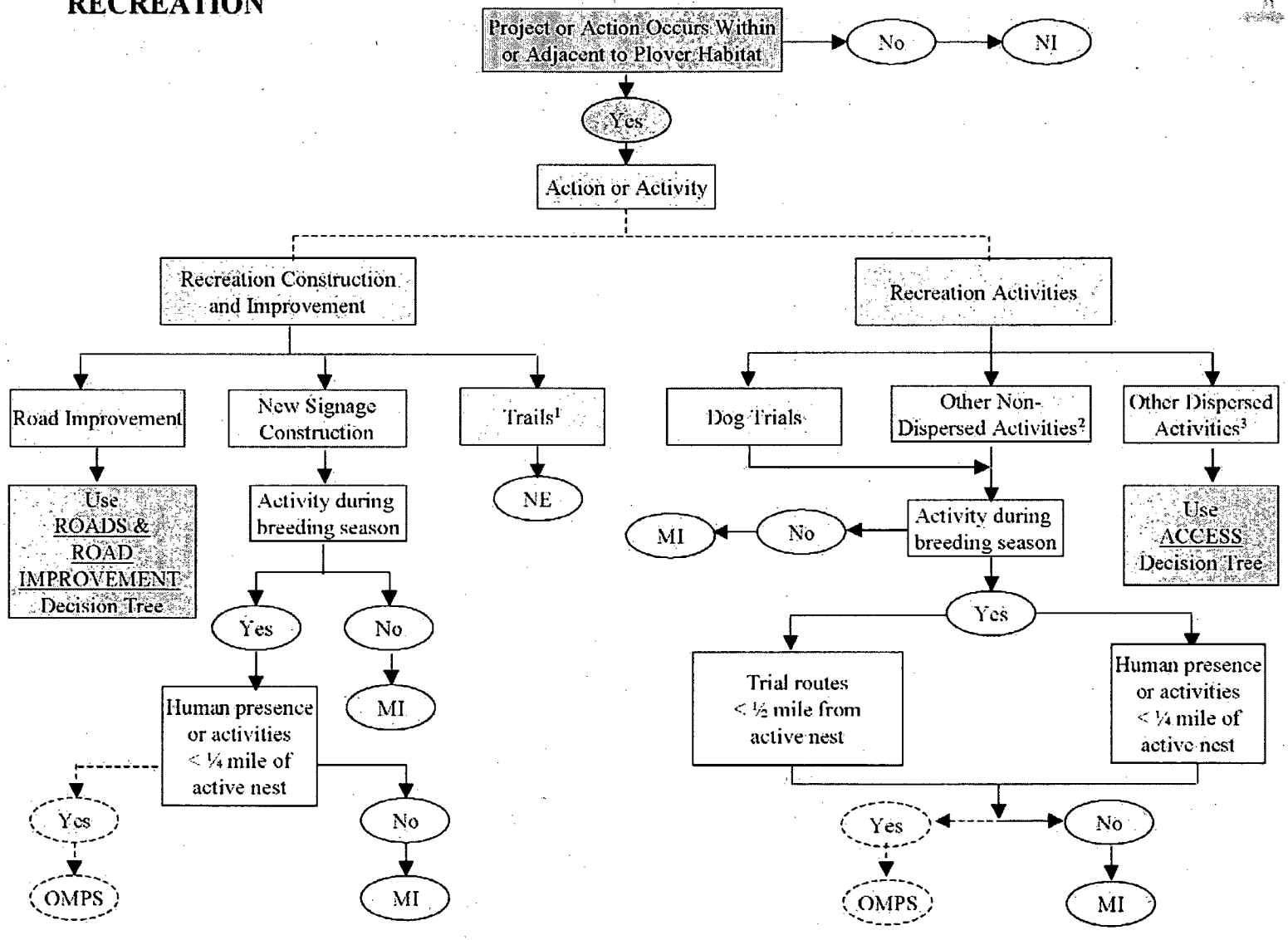
[1]Trail construction/maintenance assumed to not occur in plover habitat.

[2]"Other Non-Dispersed Activities" generally refers to concentrated (in time and place) gatherings of 2 or more people. These and related activities include Hunting - Prairie Dogs and other "varmints"; Target Shooting/Practice; Archery (competitive, sport/target); Camping (developed - tent, trailer, RV; primitive - tent, trailer, RV); Other Social Gatherings (e.g. Picnicking, Festivals, Concerts, Camp Fire Gatherings, Rendezvous, Re-enactment Events, Tours, Environmental Education, Interpretive Programs, Nature Study, etc.); Pack Trips; Overnight Recreational hunting (firearm, archery) and trapping - big game, upland bird, small game, waterfowl, target shooting and practice; Staging Areas for Vehicles and People.

[3]"Other Dispersed Activities" are ones that the activity itself is not the issue with mountain plovers, but the access across plover habitat and effect on that habitat and birds is the only main concern (access may be a concern for the Non-Dispersed Activities too but not the only concern). These activities should be evaluated through the Access screen and include the following: Antler collection in Spring; Mountain Biking; Road Biking; Driving for Pleasure; Fishing; Backpacking; Gathering non-commercial products (i.e., individual-use sage collection, rock/mineral collection, petrified wood, etc.); Hiking; Walking; Running; Horseback Riding; Day-Use Recreational hunting (firearm, archery) and trapping - big game, upland bird, small game, waterfowl, target shooting and practice; Land/Sand Sailing, Sand Boarding; All Other Activities Accessing through Plover Habitat.

Activities determined to be non-affecting due to season of use or low likelihood of activity occurring in plover habitat: Diving/Snorkeling; Dog Mushing; Ice Climbing; Ice Skating; Ice Fishing; Other Winter OHV; Personal Watercraft; Power boating; Racing (ATV, Adventure, Auto/Truck, Bicycle, Foot, Motorcycle, OHV Cars, Trucks, and Buggies); Rowing/ Floating/ Rafting; Sailing; Skating (Roller/Inline; Ski Joring; Skiing - XC, Downhill); General Snowplay; Snowboarding; Snowmobiling, Snowshoeing; Swimming/Water Play; Wake Board; Water Skiing; Wind Surfing.

RECREATION


Project or Action Occurs Within or Adjacent to Plover Habitat
No
NI
Yes
Action or Activity
Recreation Construction and Improvement
Recreation Activities
Road Improvement
New Signage Construction
Trails[1]
Dog Trials
Other Non-Dispersed Activities[2]
Other Dispersed Activities[3]
Use ROADS & ROAD IMPROVEMENT Decision Tree
Activity during breeding season
NE
MI
No
Activity during breeding season
Use ACCESS Decision Tree
Yes
No
Yes
Trial routes < ½ mile from active nest
Human presence or activities < ¼ mile of active nest
Human presence or activities < ¼ mile of active nest
MI
Yes
No
Yes
No
OMPS
MI
OMPS
MI

ROADS & ROAD IMPROVEMENT
Decision Tree Explanatory Notes

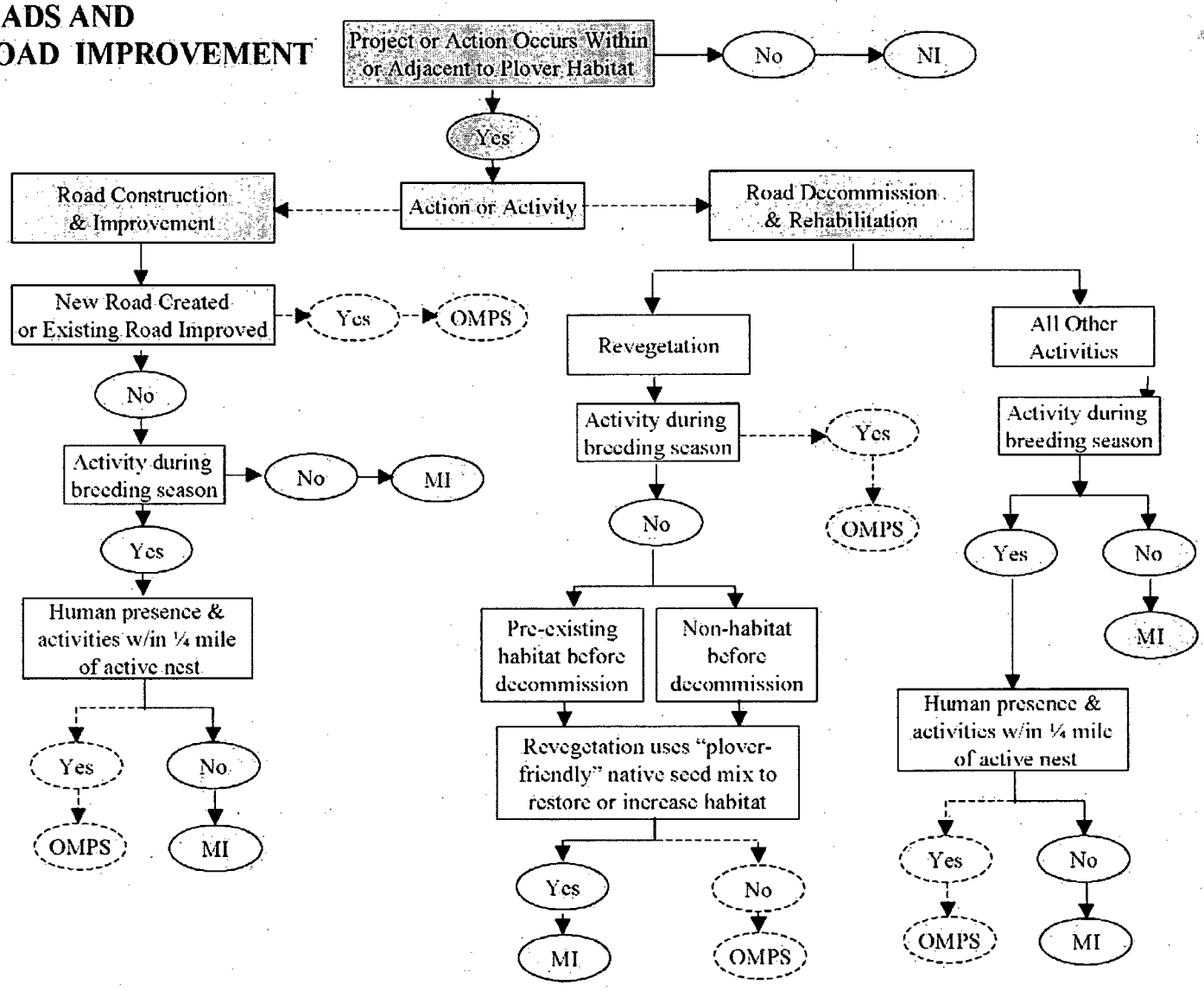
Activities under this program should first be run through the Access screen before proceeding here.

Road construction is defined as creation of new road; road maintenance is activities associated with existing road.

Activities include Traffic Control; Various road maintenance activities including Blading and grading, Surface rocking (rock replacement), Roadside brushing, Ditch cleanout, Opening and closing roads, Culvert maintenance, Stormproofing; Disposal site; Dust abatement (water or chemical); Various road restoration activities including Surface shaping and draining, Culvert installation and upgrade, Installation of drainage dips and waterbars, Surface material processing / in place rock crushing; New construction.

Activities determined to be non-affecting due to season of use or low likelihood of activity occurring in plover habitat: Hazard tree removal; Adding cross drain culverts; Bridge maintenance; Slide removal; Logging out

ROADS AND ROAD IMPROVEMENT



NATIONAL FIRE PLAN
& Other Misc. Activities

Decision Tree Explanatory Notes

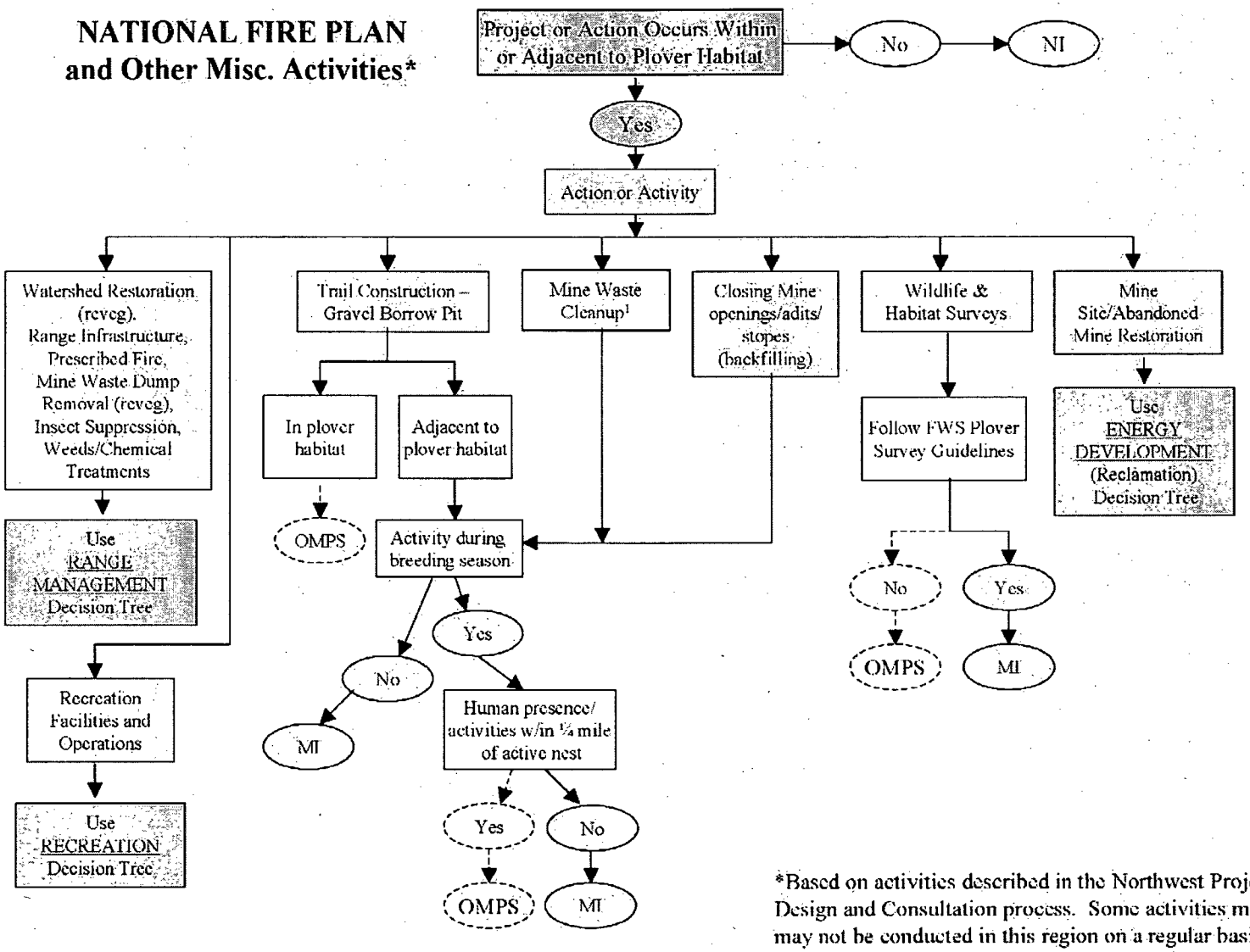
Activities under this program should first be run through the Access screen before proceeding here.

The following National Fire Plan activities were determined to be non-affecting due to low likelihood of the activity occurring in plover habitat: defensible space; forest product; mechanical treatments; watershed restoration other than revegetation; all TES habitat restoration (does not include fish and wildlife monitoring-nesting surveys); trail construction/reconstruction/maintenance except for gravel borrowing/borrow pit and excavating material, including on site; all the following activities under abandoned mine restoration: floodplain reclamation, wetlands reclamation-remove contaminated soil, wetlands reclamation-construct cell, wetlands reclamation-restore stream channel, tailings impoundment rehab-water management, tailings impoundment rehab-cap impoundment, restore surface flow, dredge tailings restoration-aerial videography, dredge tailings restoration-tailings redistribution, dredge tailings restoration-restore channel flow, groundwater control-reroute.

The following National Fire Plan activities are covered in other parts of the mountain plover screen: watershed restoration (revegetation) – see range management screen; range infrastructure – see range management screen; prescribed fire – see range management screen; mine waste dump removal (revegetation) – see range management screen; insect suppression – see range management screen; recreation facilities and operations – see recreation screen; weeds/chemical treatments – see range management screen.

[1]For Mine Waste Cleanup, decision tree assumes no habitat loss because disturbed areas will be reclaimed to pre-existing condition.

NATIONAL FIRE PLAN and Other Misc. Activities*



*Based on activities described in the Northwest Project Design and Consultation process. Some activities may or may not be conducted in this region on a regular basis.

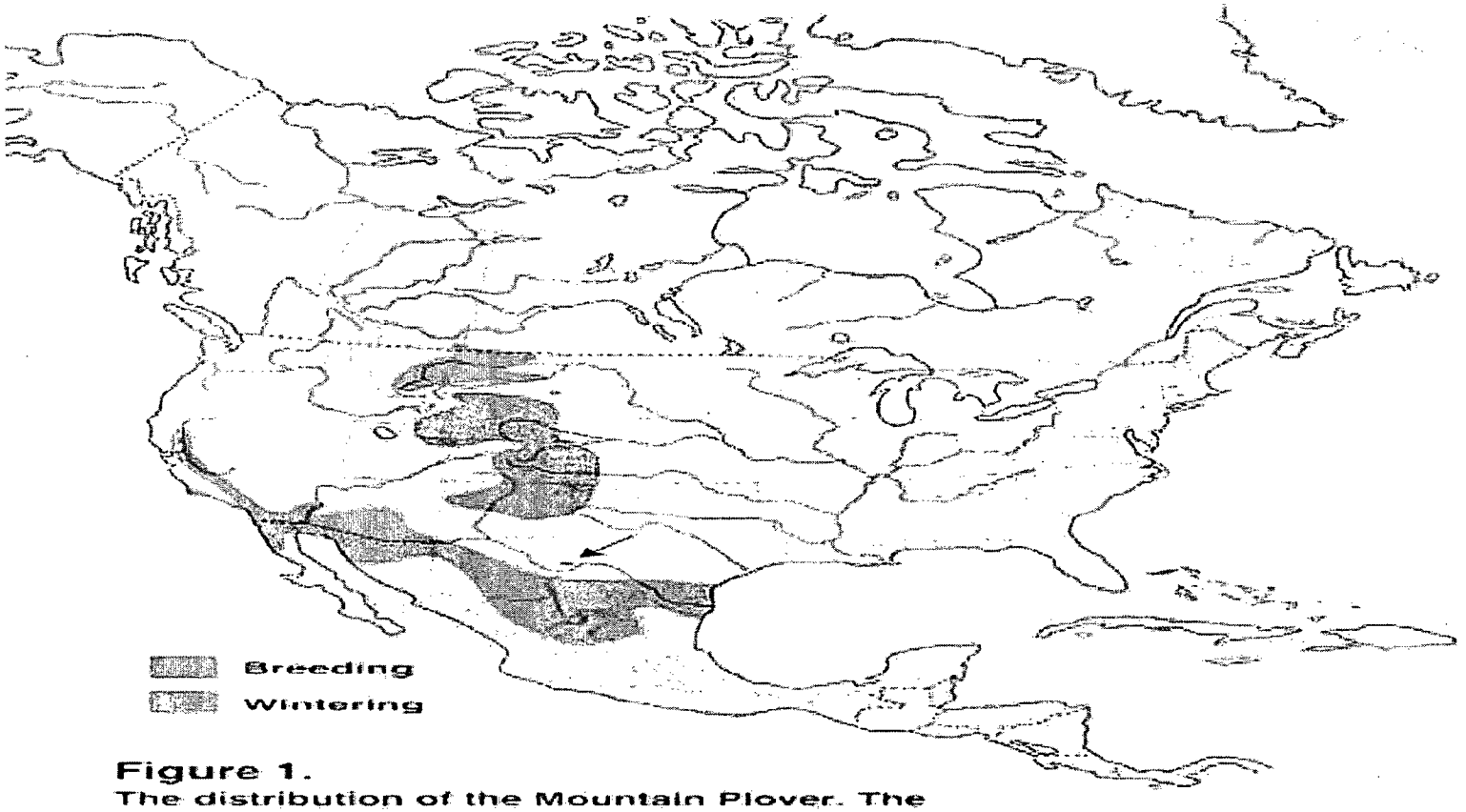


Figure 1.
The distribution of the Mountain Plover. The breeding population in Davis Mtns., TX, may not migrate. The northern limits of the winter range in Mexico are uncertain.

CONTRIBUTORS

Ver. 1 created 2003, rev. 2004

Regional Coordination and Technical Team:
Paul Winkle (FWS), Jeff Carroll (BLM), Peter McDonald (USFS)

Fritz Knopf (USGS)
Bob Leachman (FWS)
Pat Deibert (FWS)
Lou Hanebury (FWS)
Mark Ball (USFS)
Tim Byer (USFS)
Mary Read (BLM)

Jim Dunder (BLM)
Tom Enright (BLM)
Marty Griffith (BLM)
Ray Hanson (BLM)
Tony Tezak (BLM)
Frank Blomquist (BLM)
Randy Nordsven (BLM)

MEMORANDUM

BLM Field Office Managers for CO, NE, and WY
FS Region 2 Forest Supervisors
FWS Region 6 Field Supervisors
NPS Intermountain Region Superintendents

FROM: Regional Executives for Streamlining

SUBJECT: Mountain Plover Project Screen

On behalf of the Regional Executives for streamlining and the Wyoming and Colorado Level 2 teams, enclosed is the final interagency Mountain Plover Project Screen. Please distribute this Screen for use across all field units involved with Mountain Plover issues. Also enclosed is a set of Operating Instructions for using the Screen.

The Screen was developed by a team of experts collectively representing many years of experience with the species or the activities or programs covered in the Screen. It was designed with two main goals in mind: 1) to allow for proactive and consistent management and conservation of the Mountain Plover on public lands administered by our agencies, and 2) to provide a tool for streamlining agency review and implementation of activities.

At the inception of the Screen, the Mountain Plover was proposed for listing under the Endangered Species Act. In late 2003, during the latter stages of development of this Screen, the Fish and Wildlife Service withdrew its proposal to list the Mountain Plover. Due to that decision, the Screen is no longer an instrument for streamlining ESA compliance and review among the land management and regulatory agencies, and the Fish and Wildlife Service has no role in the concurrence with findings from use of the Screen by the land management agencies. However, the effects and basic management considerations for the Mountain Plover assembled in this interagency Screen are still valid.

The Mountain Plover remains an agency-designated Sensitive Species within both the Forest Service and Bureau of Land Management and is protected under the federal Migratory Bird Treaty Act. All agencies expect that the interagency nature of the Screen and broad use of its conservation guidelines will promote consistent and proactive management of the Mountain plover and reflect positively in any future listing decisions to be made.

Primary users of the Screen should be agency biologists qualified under their agency policy to conduct biological evaluations. The Screen should be used in conjunction with, and not in lieu of, normal agency biological review procedures for projects. The Screen can be used to verify the results of the biological evaluation, as well as a tool for designing projects with in Mountain Plover habitat. A biologist should not be overly concerned about going outside the Screen, if local knowledge of the birds habits or response to land uses indicates a different conclusion than that found in the Screen. In addition, some activities may not be addressed yet in this current version of the Screen but could be included in future versions. We recommend that information used to depart from the Screen be provided to your agency representative on the Regional Coordination and Technical Team for streamlining to assist with future refinements of the Screen.

The Mountain Plover Project Screen was modified based on comments received in response to the working draft circulated for review last year. This latest version is a dynamic tool that will be re-visited periodically to incorporate important new comments and information. This Screen represents the best current information and strongest interagency agreement to date on activities and effects. It should serve as a valuable tool in project planning, biological review of activities, and expediting projects in Mountain Plover habitat. Its full value will come from federal agencies sharing a common basis for management with the Mountain Plover in mind.

Please ensure that all units under your administration that encounter Mountain Plover issues have the opportunity to incorporate this Screen into existing biological review practices. Coordinated use and implementation of conservation recommendations by all of our agencies is the best way to conserve the Mountain Plover. Please direct continuing comments on the Screen and its use to the appropriate agency contacts on the Regional Coordination and Technical Team:

BLM Wyoming: Jeff Carroll, (307) 775-6090, jeff_carroll@blm.gov
BLM Colorado: Wes Anderson, (303) 239-3608, wes_anderson@blm.gov
NPS: Cay Ogden, (303) 969-2929, cay_ogden@nps.gov
USFWS: Ari Cornman, (303) 236-4254, ari_cornman@fws.gov
USFS: Peter McDonald, (303) 275-5029, petermcdonald@fs.fed.us

Douglas M. Koza
for Ron Wenker, Colorado State Director
Bureau of Land Management

6-7-04
Date

John A. Blanchard
for Ralph Morgenweck, Regional Director
U. S. Fish and Wildlife Service, Region 6

6/25/04
Date

Richard Stem
Richard Stem, Deputy Regional Forester
U.S. Forest Service, Region 2

9 July 04
Date

Robert A. Bennett
Robert A. Bennett, Wyoming State Director
Bureau of Land Management

6/9/04
Date

Steve Martin
Stephen P. Martin, Director
National Park Service, Intermountain Region

7/1/04
Date

3

9.0 APPENDIX D - MOUNTAIN PLOVER TRANSECT SURVEYS FOR PROJECTS

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

FM, AFM-SC, AFM-RES, AFM-M&L, ADMIN, FMO, RIDC, RA-RES, LEO, ME, IRM, NEPA, NRS, TRNG, BUDG, PAS
JUL 25 2000

ES-61411
W.02 (moplnoef.mem)

July 24, 2000

Memorandum

Noted KKotter 7/26/00

To: Field Manager, Rawlins Field Office, Bureau of Land Management, Rawlins, Wyoming

From: Field Supervisor, Ecological Services, Cheyenne, Wyoming

Subject: Mountain Plover Transect Surveys for Proposed Projects

The U.S. Fish and Wildlife Service (Service) has reviewed the Bureau of Land Management's (BLM) subject document, received from Ms. Mary Read at a meeting on the Continental Divide/Wamsutter II Natural Gas Project, July 17, 2000, in Laramie, Wyoming. At that time Mary requested we review the document and provide technical assistance to your office on the types of projects that may lead to long-term alteration to habitat for the mountain plover (*Charadrius montanus*), currently proposed for listing as threatened pursuant to the Endangered Species Act of 1973, as amended (Act). These comments are provided in accordance with section 7 of the Act and the Interagency Cooperation Regulations (50 CFR 402).

During formal conferencing with BLM on the proposed Continental Divide/Wamsutter II Natural Gas Project, the Service determined that a number of activities related to gas development would lead to long-term alterations to occupied mountain plover habitat. These changes, if significant enough, could lead to abandonment of historically used breeding habitat or reduced reproductive output in these areas, constituting take in the form of "harm" or "harassment" (Service's final biological and conference opinion on the proposed Continental Divide/Wamsutter II Natural Gas Project, April 21, 2000). This led to the conclusion that such projects may require formal consultation even when conducted outside of the nesting period. In response to this, the BLM, Service, and gas development operators agreed to cooperatively survey areas of suitable breeding habitat to determine if it was occupied by mountain plovers. If found, protective measures could be included as components of proposed projects potentially causing long-term habitat alterations.

The subject document attempts to separate common BLM activities that may cause long-term habitat alterations to occupied plover breeding habitat from those causing no effect, to develop a similar process for consultation. Mary Read asked David Felley of my staff to review the two lists

provided: 1) project types potentially causing long-term adverse effects to plover habitat, and therefore requiring surveys, and 2) project types not causing long-term effects to plover habitat.

We believe the following items on the first list could adversely affect the species regardless of the season of construction and should be preceded by mountain plover surveys: natural gas and oil wells and associated access roads, if constructed in occupied mountain plover breeding habitat. We do not believe that reservoirs and ponds >5 acres in surface area would adversely affect the species unless the cumulative total acreage of reservoir and pond surface in one contiguous block of plover habitat exceeds 40 acres (Fritz Knopf, pers. comm.). We believe this list is a good start but is far from comprehensive and look forward to working with you to understand the impacts of other types of projects that may adversely affect occupied mountain plover habitat.

Because the following items on the second list will cause no significant long-term changes to mountain plover habitat, we believe they are unlikely to adversely affect the mountain plover if conducted outside of the nesting season: construction of pipelines, small pits, water wells not requiring windmills, spring developments, livestock fences, water troughs, in-stream structures, wildlife exclosures, wildlife guzzlers, and waterbars for erosion control; conducting prescribed burns, chaining vegetation, pesticide application, weed control, and seismic exploration. These types of projects, conducted between July 10 and April 10, will not require consultation with the Service and need not be preceded by mountain plover surveys. However, if any of these will required construction of power lines, providing perch sites for aerial predators, they may adversely affect the species and surveys and consultation may be required.

The following items on the second list may adversely affect the mountain plover by producing new hunting perches and nest sites for avian predators: water wells requiring windmills, and artificial nesting structures. These types of projects should be preceded by mountain plover surveys and consultation with the Service.

Finally, we will require results of all surveys that located mountain plovers as documentation for the consultations and we request results of all surveys that failed to locate mountain plovers. We would appreciate it if this information could be updated on an annual basis after each field season.

We hope that this information helps you to avoid and minimize adverse effects to the proposed threatened mountain plover and more efficiently conduct the business of your office. Thank you for your assistance in the conservation of the mountain plover. If you have any questions or comments contact David Felley at the letterhead address or by telephone at (307) 772-2374, extension 23.

cc: Director, WGFD, Cheyenne, WY
Nongame Coordinator, WGFD, Lander, WY

10.0 APPENDIX E – REVISED MOUNTAIN PLOVER PROTECTION MEASURES FOR GAS FIELD DEVELOPMENT ACTION

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4000 Airport Parkway
Cheyenne, Wyoming 82001

ES-61411
W.02 (moplpro2.mem)

August 1, 2000

Memorandum

To: Field Manager, Bureau of Land Management, Rawlins Field Office

From: Field Supervisor, Wyoming Field Office

Subject: Revised Mountain Plover Protection Measures for Gas Field Development Activities

Mountain plover protection measures were proposed in our memorandum of May 19, 2000, for avoiding impacts to mountain plovers from gas development activities in the Continental Divide Basin. We have made significant changes to these measures in response to the written comments of gas development operators and a meeting with them and Mary Read of your staff on July 17, 2000. These revised protection measures are provided below.

These measures may be useful in developing terms and conditions during future formal consultations on specific field development actions. Alternatively, some or all of them may be included as protection measures in the proposed action to enable the Bureau of Land Management (BLM) and Service to reach a "may affect, not likely to adversely affect" determination and avoid the need for formal consultation, if the mountain plover becomes listed. These measures are based on the assumption that nesting aggregations of plovers have been identified in or around the project area prior to the proposed development.

1) The amount and nature of ground-disturbing activities shall be limited within identified nesting aggregation areas to avoid the abandonment of these areas. Directional drilling, the piping and storage of condensate off the concentration area, or to a centralized facility, or other techniques for the minimization of ground disturbance and habitat degradation should be implemented where practicable and feasible. Construction of ancillary facilities (e.g. compressor stations, processing plants) should be avoided within ½-mile of known aggregation areas where possible.

This is your future. Don't leave it blank. - *Support the 2000 Census.*

2) Because adults and broods may forage along roads, particularly at night, traffic speed and volume should be limited during night-time hours within the breeding season in identified plover breeding areas. Wherever possible, avoid constructing roads through plover breeding habitat. Within ½-mile of identified aggregation areas, speed limits should be posted at 25 mph on resources roads, and 35 mph on local roads during the brood rearing period (June and July). Traffic shall be minimized by car-pooling and organizing work activities to minimize trips on roads within ½-mile of known plover breeding aggregation areas during June and July. If possible, work schedules and shift changes should be set to avoid the periods from ½-hour before to ½-hour after sunrise and sunset during June and July, when mountain plovers and other wildlife are most active.

3) Project-related features that increase the population levels or hunting efficiency of predators of the mountain plover shall be strictly limited. Creation of hunting perches or nest sites for avian predators within ½-mile of identified aggregation areas shall be avoided by burying power lines or including perch-inhibitors in their design, and using the lowest possible structures for fences, condensate storage, and other elevated structures and incorporating perch-inhibitors into their design. Road-killed animals should be promptly removed from areas within ½-mile of identified aggregation areas to avoid attracting avian and mammalian predators and supplementing their natural food supplies.

4) Seed mixes and application rates for reclamation should produce stands of vegetation suitable for plover nesting in plover aggregation areas, while meeting the BLM's requirements for stabilizing soil and controlling weeds. Seed mixes and application rates for reclamation should be designed to produce stands of sparse, low-growing vegetation suitable for plover nesting in previously suitable mountain plover habitat. Reclamation should attempt to return the plant community to the pre-existing condition as soon as possible.

5) To minimize destruction of nests and disturbance to breeding plovers from reclamation activities, no grading, seeding, or other ground-disturbing activities shall occur from April 10 to July 10 unless surveys consistent with the Plover Guidelines or other Service-approved method find that no plovers are nesting in the area.

6) Capped and abandoned wells within ½-mile of nesting aggregation areas should be identified with markers 4 feet tall with perch inhibitors on the top to avoid creation of raptor hunting perches. This is the lowest structure in compliance with existing regulatory requirements in the State of Wyoming.

Including these mountain plover protection measures in proposed projects will greatly facilitate future consultations. Thank you for your assistance in the conservation of the proposed mountain plover. If you have any questions or comments on this memorandum, please feel free to contact David Felley at the letterhead address or by phone at (307) 772-2374, extension 23.

Field Manager, Rawlins Field Office, Bureau of Land Management 3

cc: Director's Office, WGFD, Cheyenne
Nongame Coordinator, WGFD, Lander