

FINAL REPORT

**STATEWIDE PROGRAMMATIC
BIOLOGICAL EVALUATION
FOR THE WESTERN BOREAL TOAD
(*BUFO BOREAS BOREAS*)
(SOUTHERN ROCKY MOUNTAIN POPULATION)**

Submitted to:

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Wyoming Natural Diversity Database

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ABBREVIATIONS/ACRONYMS

ACEC	Area of Critical Environmental Concern
AMP	Allotment Management Plan
APD	Application for Permit to Drill
AML	Appropriate Management Level
BE	Biological Evaluation
BLM	Bureau of Land Management
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FO	Field Office
GIS	Geographic Information System
HMA	Herd Management Area
HMP	Habitat Management Plan
NNL	Natural National Landmark
NSS1	Native Species Status 1
ORV	Off-Road Vehicle
POD	Plan of Development
RAMP	Resource Area Management Plan
RMP	Resource Management Plan
RMU	Resource Management Unit
RPS	Rangeland Program Summary
SRMA	Special Recreation Management Area
SSC	Species of Special Concern
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management
WGFD	Wyoming Game and Fish Department
WHR	Wildlife Habitat Relationship
WyGISC	Wyoming Geographic Information Science Center
WYNDD	Wyoming Natural Diversity Database

1.0 INTRODUCTION

SCOPE OF WORK

This biological evaluation (BE) assesses the potential effects of actions included in Wyoming Bureau of Land Management (BLM) Resource Management Plans (RMPs) on the western boreal toad (*Bufo boreas boreas*). Only the Southern Rocky Mountain Distinct Population Segment (DPS) of the western boreal toad is currently a candidate for listing under the Endangered Species Act (ESA) (USFWS 2004). The Southern Rocky Mountain population of the western boreal toad occurs in northern New Mexico, Colorado, and in southeastern Wyoming in an area bounded by: Interstate Highway 25 on the east from the Colorado border to Casper, southwest out of Casper on Wyoming State Highway 220 to Wyoming State Highway 487, southerly on Wyoming State Highway 487 to Medicine Bow, westerly on Wyoming State Highway 287 to Interstate Highway 80, westerly on Interstate Highway 80 to Wyoming State Highway 789, and southerly on Wyoming State Highway 789 to the Colorado border. As a result, this BE focuses on potential effects of actions authorized by the BLM on the Southern Rocky Mountain population of western boreal toads, but not on the northern population of western boreal toads, which occur in the west and northwestern portion of Wyoming and are not candidates for federal listing under the ESA. The Colorado Division of Wildlife has designated western boreal toads as a state endangered species. The boundary between the Northern and Southern Rocky Mountain populations of western boreal toads in Wyoming is not definitive at this time. Continued genetic analysis and inventory will likely resolve the issue. The large, dry Red Desert to the west of the currently mapped habitat for the Southern Rocky Mountain population of the western boreal toad (**Maps 1 and 2**) makes a fairly good barrier between the two populations. If genetic analysis reveals that the boundary should be moved, then an amendment to this BE will be conducted.

Current and historical western boreal toad (Southern Rocky Mountain population) breeding sites occur in the Rawlins RMP and although no breeding sites have been documented in the adjacent Platte River (Casper) RMP, potential habitat exists and it is very possible that the western boreal toad occurred/occurs there. Management actions included in the Rawlins and Casper RMPs were identified as having the potential to impact populations and potential habitat of the Southern Rocky Mountain population of the western boreal toad. Specific objectives of this BE include the following:

- Review pertinent RMPs and identify proposed actions with the potential to affect the Southern Rocky Mountain population of the western boreal toad;
- Summarize the biology of the Southern Rocky Mountain population of the western boreal toad, including its known and potential distribution in Wyoming;
- Assess the potential effects of proposed RMP actions on the western boreal toad; and
- Prepare a determination of effects for the western boreal toad based on the accounting for proposed actions identified in the Rawlins and Casper RMPs.

Based on an assessment of potential effects, a determination is also provided to document the expected short- and long-term status of the western boreal toad after the actions and mitigation measures are initiated and completed. This BE assesses the potential effects of actions authorized by BLM on all surface and sub-surface lands administered by BLM within the Rawlins and Casper RMPs.

REPORT ORGANIZATION

This report is organized into four sections, including the following:

- 1.0 Introduction – describes the purpose of the analysis, scope of the BE, and methods.
- 2.0 Species Information – summarizes the current listing status, abundance, distribution in Wyoming, ecology, and threats faced by the western boreal toad.
- 3.0 RMP Analysis – (For the Rawlins and Casper RMPs) describes the environmental baseline status of the Southern Rocky Mountain population of the western boreal toad, actions proposed by BLM with the potential to affect the Southern Rocky Mountain population of the western boreal toad, potential indirect and direct effects of these actions, cumulative effects of state and private actions, and a determination of the expected impacts to the Southern Rocky Mountain population of the western boreal toad with consideration of integrated mitigation measures.
- 4.0 Conservation Strategies – provides a conservation strategy consisting of BLM-committed Conservation Measures, intended to reduce potential impacts to the western boreal toad and its habitat and a list of recommended Best Management Practices, to be considered on a case-by-case basis at the project level, for management actions potentially affecting this species is also provided to further protect the western boreal toad and its habitat.

METHODS

This BE was developed by reviewing pertinent RMPs within Wyoming and their management actions with the potential to impact the Southern Rocky Mountain population of the western boreal toad. Of the 12 RMPs initially evaluated, the Casper RMP and Rawlins RMP were identified as the only RMPs with the potential to impact the western boreal toad because these field offices (FOs) geographically overlapped with known historical breeding locations and primary and secondary habitats for the Southern Rocky Mountain population of the western boreal toad. Pertinent amendments to these plans and maintenance actions were also evaluated.

A protocol was developed to maintain consistency in the reviews of each of the RMPs. Individual RMPs were reviewed to identify proposed actions with the potential to impact the western boreal toad. The Casper RMP and Rawlins RMP were reviewed and the proposed actions and conservation measures were summarized. Biologists from the BLM FOs in Casper and Rawlins were contacted and solicited for information pertaining to species occurrence, habitat, and potential impacts caused by management actions authorized by BLM.

After review of each RMP, an analysis of potential impacts of proposed actions to the western boreal toad was conducted. Geographical information system (GIS) technology was applied in the analysis of potential effects. The GIS analysis included a spatial comparison of known western boreal toad habitat and occupied or suitable habitat locations with areas to be affected by management actions authorized by the BLM. Areas of surface and subsurface administration by BLM were also included. In some cases, digital data were not available to document areas affected by proposed management actions. In these cases, hard copies of maps showing areas affected by various management actions were reviewed to assess their potential effects on western boreal toad populations and habitat.

Areas where western boreal toad occurrence or habitat overlapped with management actions administered by BLM were identified using the GIS database. In these locations, and other areas with high potential habitat for the species, potential impacts of management actions authorized by the BLM on the western boreal toad were evaluated. Proposed state and local activities were also evaluated to assess their potential cumulative effects.

After potential effects were identified, the results were used to establish a determination of impacts for the Southern Rocky Mountain population of western boreal toads in Wyoming. Potential effects of proposed activities, as well as proposed conservation measures, were included in the determination. Pursuant with BLM policy and language, the determination categories considered as part of this analysis included the following:

- No impact;
- May impact, but not likely to contribute to the need for federal listing; or
- May impact, and is likely to contribute to the need for federal listing.

The following sections summarize the results of the BE for the Southern Rocky Mountain population of the western boreal toad.

2.0 SPECIES INFORMATION

LISTING STATUS

In 1993, the U.S. Fish and Wildlife Service (USFWS) was petitioned to list the Southern Rocky Mountain population of the western boreal toad as endangered. In 1995, the USFWS published their finding to this petition. The USFWS announced listing of the boreal toad (*Bufo boreas boreas*) was warranted but precluded by other higher priority actions (USFWS 1995). This population of the boreal toad then became a component of the USFWS's candidate list and has remained there for 10 years. The most recent USFWS Candidate Notice of Review (CNOR), in May 2004, indicated no change to the candidate status (Priority 3 – High, Imminent, Subspecies) for this species (USFWS 2004).

Region 2 of the U.S. Forest Service (USFS) lists the Southern Rocky Mountain population of the western boreal toad as a sensitive species. The northern Rocky Mountain population is also listed by the USFS as a sensitive species in Region 2. Sensitive species are defined as those plant and animal species identified by the Regional Forester for which population viability is a concern as evidenced by: (a) significant occurrence or predicted downward trends in population numbers or density, and/or (b) significant current or predicted downward trends in habitat capability that would reduce a species' existing distribution. Because the Southern Rocky Mountain population of the western boreal toad has a USFWS status (candidate), it is not listed as a Wyoming BLM sensitive species. Should the species lose USFWS status, it would be considered as a Wyoming BLM sensitive species.

Currently, the Wyoming Game and Fish Department's (WGFD) classification of the western boreal toad is as a Native Species Status 1 (NSS1). This status includes species with ongoing significant loss of habitat and with populations that are greatly restricted or declining (extirpation appears possible). The northern population of the western boreal toad is listed under management status Species of Special Concern (SSC) II by the WGFD. This status signifies species in which: (1) habitat is restricted or vulnerable (but no recent or significant loss has occurred); or (2) species with ongoing significant loss of habitat and populations that are declining or restricted in distribution but extirpation is not imminent. The Wyoming Natural Heritage Program currently classifies the Southern Rocky Mountain population as critically imperiled because of its extreme rarity and the northern population as having a secure range-wide status.

Existing Conservation and Protection

The current recovery plan for the Southern Rocky Mountain population of the western boreal toad was completed and approved in February of 2001. The plan, developed by the Boreal Toad Recovery Team (BTRT) and Technical Advisory Group, is titled, *Conservation Plan and Agreement for the Management and Recovery of the Southern Rocky Mountain Population of the Boreal Toad (Bufo boreas boreas)* (Loeffler 2001). This recovery plan is based on the State of Colorado listing of endangered, with input by the USFWS. The conservation measures derived through the plan cover the entire range of the Southern Rocky Mountain population of western boreal toads and are valid in Colorado, New Mexico and Wyoming.

Eleven specific geographic areas, or mountain ranges, are addressed in the recovery plan. Recovery objectives and criteria are included in this plan to prevent the extirpation of the Southern Rocky Mountain population of western boreal toads from their historical range, including populations in southern Wyoming. General recovery objectives outlined in the recovery plan include the following:

- Prevent extirpation of western boreal toads from the area of their historic occurrence in the southern Rocky Mountains.
- Recover the species to a population and security level that will allow it to be de-listed from its present endangered status in Colorado and New Mexico.
- Avoid the need for federal listing of the western boreal toad under the ESA.

Criteria were developed for down-listing and de-listing the subspecies, based on achievement of the measures set forth in the recovery plan. The criteria are based on the listing status by the State of Colorado, as the species has not been listed by the USFWS. These criteria are as follows:

- To down-list from “endangered” to “threatened,” there must be at least two viable breeding populations of western boreal toads in each of at least six of the eleven geographic areas and, statewide (Colorado), the number of viable breeding populations must total at least 15.
- To de-list the western boreal toad, there must be at least two viable breeding populations of western boreal toads in each of at least nine of the eleven areas and, statewide (Colorado), the number of viable breeding populations must total at least 25.

For a population of western boreal toads to be considered viable, it must meet the following criteria:

- There must be documented breeding activity and recruitment to the population in at least four out of the past ten years. However, if breeding activity has not been documented in the past four years, there must be reliable observations of toads, including at least one sub-adult age class, in the locality during at least two of those four years; or
- There has been an average observed total of at least 20 breeding adults at the breeding locality, producing an average of at least four viable egg masses per year, and the number of breeding adults observed at the locality has remained stable or increased over a period of at least ten years, based on visual surveys; and
- The population faces no known significant and imminent threat to its habitat, health, and environmental conditions.
- The plan suggests that these criteria be considered in any process to list, down-list, or de-list the western boreal toad in Wyoming.

Reintroduction and captive propagation programs have been implemented as part of recovery efforts. Western boreal toads were collected from either Rock Creek or Bird Creek in the Medicine Bow Mountains and are held at the Sybille Wildlife Research Center northwest of Laramie, Wyoming. As of November 2000, Sybille housed 26 adult toads and, although chytrid fungus has been documented at the facility, none of the toads show any signs of infection (Loeffler 2001).

Past reintroduction efforts for the Southern Rocky Mountain population of the western boreal toad in Wyoming have largely been unsuccessful. In Wyoming, the WGFD released 4,300 toadlets in mid-August of 1996 and 950 tadpoles on July 25, 1997, in beaver ponds located near Lake Owen in the Medicine Bow Mountains (Loeffler 2001). The site was surveyed repeatedly in subsequent years. Three juvenile toads were observed in mid-July of 1997 and two juvenile toads were observed in late-July. No evidence of toad presence was observed during surveys conducted during the period between 1998 and 2000 (Loeffler 2001).

Other programs being implemented include development of a chytrid fungus diagnostic test and toxicological studies. Development of the diagnostic test will allow scientists to identify chytrid fungus from small skin samples collected from live toads. The toxicological studies are designed to identify other water quality characteristics that may limit survival and distribution of western boreal toad tadpoles.

DISTRIBUTION

The Southern Rocky Mountain population of the western boreal toad occupies lodgepole pine or spruce-fir forested habitats, at elevations between 7,500 to 12,000 feet (McGee 2002). The Southern Rocky Mountain population occurs in southeast Wyoming, Colorado, and north-central New Mexico. In Wyoming, the Southern Rocky Mountain population occurs in Albany, Carbon, and Laramie Counties. Historically, western boreal toads were common throughout high elevations in southern Wyoming and Colorado. However, the Southern Rocky Mountain population has been greatly reduced and toads may occur in as little as one percent of historic breeding areas (BTRT 2000). The western boreal toad is now very rare in southern Wyoming and may be extirpated from most historic breeding ponds (Keinath and Bennett 2000). A few small breeding populations may exist in the Medicine Bow and Sierra Madre Mountains. However, only one breeding location has been documented in the Medicine Bow Mountains during surveys conducted in 1999 through 2004 (**Maps 1 & 2**), but no breeding activity was documented from 1998 through 2004 (Loeffler 2001, Turner 2004).

Primary and secondary habitats have been categorized on the Wyoming Bioinformation Node (WyGIS 2004). These habitats include the following cover types: aspen, forest dominated riparian, shrub dominated riparian, grass dominated wetland, grass dominated riparian, and unclassified riparian (**Map 1**). The distributional limits of each species were defined by recording the species' presence or absence within a grid of hexagon-shaped cells (245 square miles in size) encompassing the state, based on point locality records and range maps. A Wildlife-Habitat Relationships (WHR) database was developed, recording the association of terrestrial vertebrate species to features that had been digitally mapped within the state of Wyoming, including land cover (vegetation) types, riparian/aquatic habitats, and elevation. The hexagon and WHR databases were combined by the use of a GIS in a spatial overlay process. Species distributions in the state were predicted on existence of associated habitat within hexagon cells where species are known or expected to occur. Hardcopy maps of predicted species distributions were reviewed by over 60 acknowledged experts including state and federal biologists, university professors, and Audubon Society members, resulting in the final version of the maps included in this atlas. Primary habitats constituted land cover occupying the largest proportion of the area of each polygon. Secondary habitats constituted land cover occupying the second largest proportion of the area of each polygon.

ECOLOGY

Habitat Description

The western boreal toad occupies breeding ponds, summer range, and winter hibernacula. Each of these habitat types can be associated with lodgepole pine forests. Breeding takes place in shallow, quiet water in lakes, marshes, bogs, ponds, and wet meadows. Pools are generally less than 15 centimeters deep. Western boreal toad summer habitat typically includes upland montane forests and rocky areas, with areas of spring seeps. Hibernacula usually occur near groundwater adjacent to areas with suitable breeding habitat. Hibernacula are often located in ground squirrel burrows that descend below the frost line.

In Wyoming, western boreal toad habitat includes wet habitats in foothill, montane, and subalpine areas. Generally, predatory fish are not present in ponds suitable for western boreal toads. Toads can also be found in kettle ponds, beaver ponds, old oxbow lakes, and still water having a mud or silt bottom (Keinath and Bennett 2000).

Prey/Forage

Western boreal toads eat a variety of invertebrates. According to some reports, ants often constitute a large portion of the diet of western boreal toads. Toad larvae filter suspended plant material and also feed on bottom detritus (Keinath and Bennett 2000).

Behavior

Western boreal toads are mainly diurnal. However, some individuals may be active during evenings. Toad activity at night has been observed during periods of mild weather. Western boreal toads hibernate during the winter months. Western boreal toads emerge from hibernacula and breed as soon as breeding ponds begin to thaw. Egg laying typically occurs from mid-May to early/mid-July and eggs typically hatch between mid-July to mid-August. Tadpoles are typically present from mid-July to mid-August, developing into juveniles from mid-July to late September. There is evidence that male western boreal toads do not breed until they are four years old and females do not breed until they are six years old (Keinath and Bennett 2000).

Threats

Widespread western boreal toad decline has been linked to stress-induced mortality associated with a bacterium or fungus. In 1999, scientists identified chytrid fungus (*Batrachochytrium dendrobatidis*) as contributing to the decline of western boreal toad populations. In the late 1980s, boreal toads were found to be absent from 83 percent of breeding localities in Colorado and 94 percent of breeding localities in Wyoming previously known to contain toads. In 1999, the number of known breeding localities had actually increased in Colorado (likely due to increased survey efforts) from 33 to 50, with only one site in Wyoming and none in New Mexico (USFWS 2004). The most likely reason for the declines is due to the Chytrid fungus. Chytrid fungus infects the skin of amphibians. However, it is not known how this fungus kills amphibians. Carey (1993) first developed the hypothesis of how western boreal toads may be affected by chytrid fungus. This hypothesis states that 1) some environmental factor or factors cause sublethal stress; 2) stress directly causes suppression of the amphibian's immune system; and 3) immunosuppression, coupled with the effect of cold body temperature on the ability of the immune systems of ectothermic animals to fight disease, leads to infection and subsequent widespread mortality (BTRT 2000). Predators that may prey upon mature western boreal toads include gray jay, western garter snake, tiger salamander, spotted sandpiper, red fox, American robin, mallard duck, and raccoon. Predators that may prey upon western boreal toad tadpoles include predaceous diving beetles, trout, bullfrogs, mallard duck, crows, ravens, and wood frog larvae. Other fungi (*Basidiobolus ranarum*) and bacteria (*Aeromonas hydrophila*) known to cause mycotic dermatitis may also have contributed to the decline of western boreal toad populations.

3.0 ANALYSIS OF RESOURCE MANAGEMENT PLANS

RAWLINS FIELD OFFICE

The *Record of Decision and Approved Resource Management Plan for the Great Divide Resource Area* was signed in November 1990 (BLM 1990). The Great Divide (Rawlins) RMP provides the management direction for 3.4 million acres of public land surface and 4.6 million acres of federal mineral estate administered by the BLM in the Rawlins FO (BLM 1990). The Rawlins FO covers portions of Laramie, Albany, Carbon, and Sweetwater Counties in south-central Wyoming. Approximately 11.2 million acres are within the administrative boundary of the Rawlins FO. On approximately 1 million acres, the federal mineral estate is administered by the BLM, while the surface acres are administered by other agencies, primarily the U.S. Forest Service. The Rawlins RMP does not address these areas because the plans proposed by the Forest Service and other agencies provide the basis for BLM's administration of subsurface resources.

The Rawlins RMP describes each management action applied within the Rawlins FO. The following text briefly summarizes the activities and any specific mitigation measures associated with each management action. The *Wyoming BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities* will be applied to all surface-disturbing or disruptive activities. These guidelines include timing limitations and restrictions on surface occupancy that will minimize potential effects to the western boreal toad and its habitats. Refer to the Rawlins RMP for a complete description of each action. The following programs are analyzed in this document:

- Areas of Critical Environmental Concern
- Cultural and Paleontological Resources
- Fire Management
- Forest Management
- Lands Program Management
- Livestock Grazing Management
- Minerals Management
- Recreation Management
- Sensitive Plants Management
- Soil, Water, and Air Management
- Visual Resource Management
- Wild and Scenic River Management
- Wilderness Study Areas
- Wild Horse Management
- Wildlife Habitat and Fisheries Management

Environmental Baseline

The Wyoming Natural Diversity Database (WYNDD) has 29 documented element occurrences, three breeding sites (one since 1995), 45 observations (15 since 1995), and 26 locations where specimens have been collected (Keinath and Bennett 2000). The WGFD has recorded 195 sites that have been noted over many years. Many of these sites are duplications, the same location having been visited by the same or different individuals during different years, or visited multiple times within the same year (**Maps 1 & 2**). The WGFD is currently inventorying/verifying these sites, looking for new sites, and checking for breeding activity. Other databases and sources have accounted for numerous observations, breeding sites,

and locations from which specimens have been collected. The overall number of sites from all databases accounts for 363 locations, the vast majority are duplicates (**Tables 1 and 3**). Only one active breeding population, at Bird Creek in Albany County is currently known from Wyoming. This site has been regularly monitored, but no breeding activity was documented from 1998 through 2004 (Loeffler 2001, Turner 2004). The Bird Creek site is within the Rawlins FO, but occurs on Medicine Bow National Forest ownership.

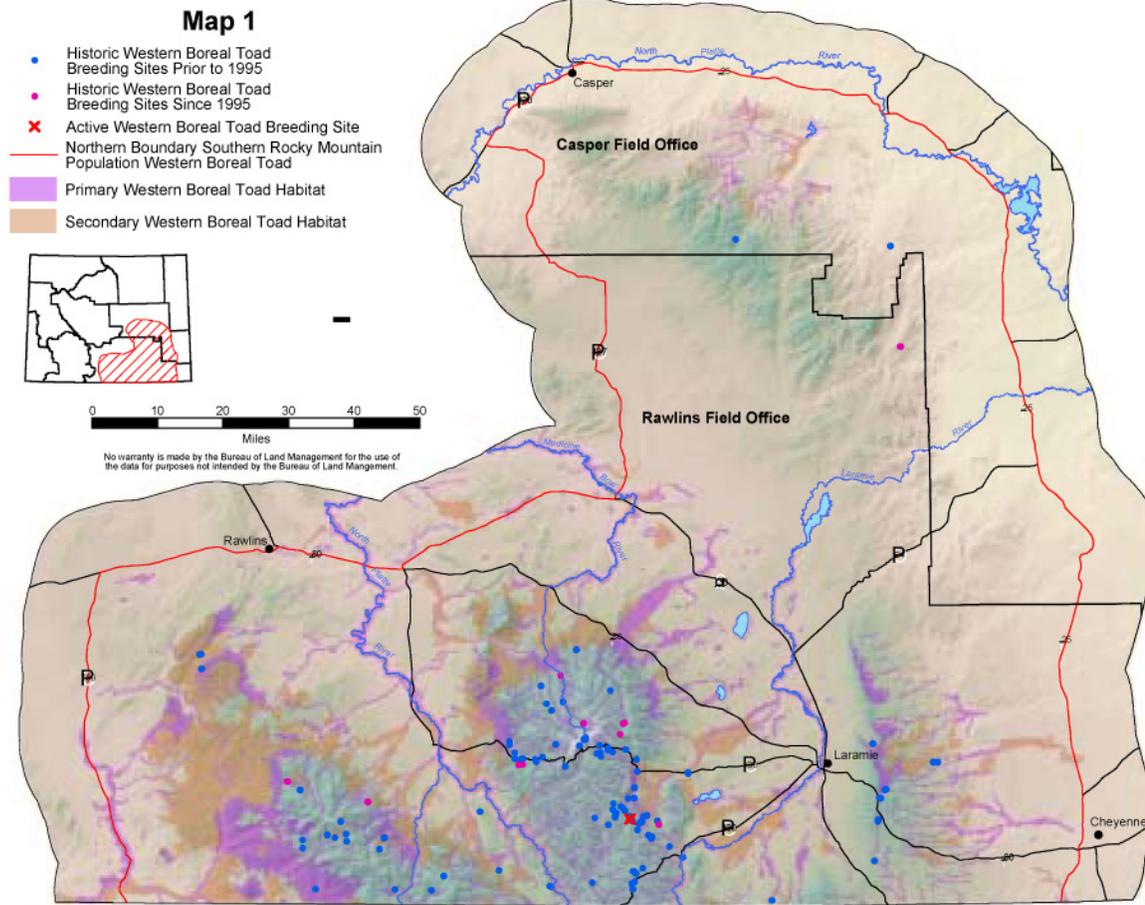
Map 1 displays 363 recorded historical western boreal toad sites, which includes all breeding sites, observations and collections and the primary and secondary habitats for the Southern Rocky Mountain population of the western boreal toad. Again, many of these sites have duplicate records, some with dozens of documented records for the same location. All but two of these historical sites, for the Southern Rocky Mountain population of the western boreal toad occurring within Wyoming, are found within the Rawlins FO area. Three hundred and three (84 percent) of the historical sites occur on lands administered by the USFS. Fifty-seven sites are in private ownership, ten of which have subsurface mineral rights administered by BLM. One historical breeding site is on BLM owned land and occurs in the Rawlins FO area.

Map 2 displays the 363 recorded historical western boreal toad (Southern Rocky Mountain population) breeding sites, including all known boreal toad observations and collections, and depicts land ownership.

Table 1 includes a summary of the number of breeding sites and acres of primary and secondary habitat for the entire range and within the Rawlins FO for the Southern Rocky Mountain population of the western boreal toad. Over 490,000 acres and over 773,000 acres of primary and secondary western boreal toad habitats, respectively, have been identified in southeastern Wyoming (**Map 1**). The majority of western boreal toad breeding sites and primary and secondary western boreal toad habitats occur within the Rawlins FO, with approximately 482,000 acres (98 percent) of primary habitat and 745,000 acres (96 percent) of secondary habitat occurring within this FO. Within the Rawlins FO, most of the primary habitat (44 percent, 211,000 acres) occurs on privately administered lands. Approximately 29 percent (140,000 acres) of primary habitat within this FO occurs on lands administered by USFS and 19 percent (92,000 acres) occurs on lands administered by BLM. Of the 746,000 acres of secondary habitat that occurs within the Rawlins FO, the majority (49 percent, 364,000 acres) occurs on privately owned lands. On lands administered by BLM within this FO, 239,000 acres (32 percent) of secondary habitat exist.

A number of past human-related actions may have contributed to the decline of the Southern Rocky Mountain population of the western boreal toad, including habitat alterations from timber harvesting, grazing, recreation, and water development. However, none of these activities have been shown to be the primary cause for the population decline in the Southern Rocky Mountain population. Resource management activities that negatively affect alpine wetlands also may have detrimental effects on western boreal toads. Aerial spraying of pesticides to control various forest insect pests may affect western boreal toad tadpoles. Human-induced range expansion of the native tiger salamander (*Ambystoma tigrinum*) may be another factor contributing to the decline of the western boreal toad.

Map 1: Western Boreal Toad Breeding Sites and Primary & Secondary Habitat with Topography



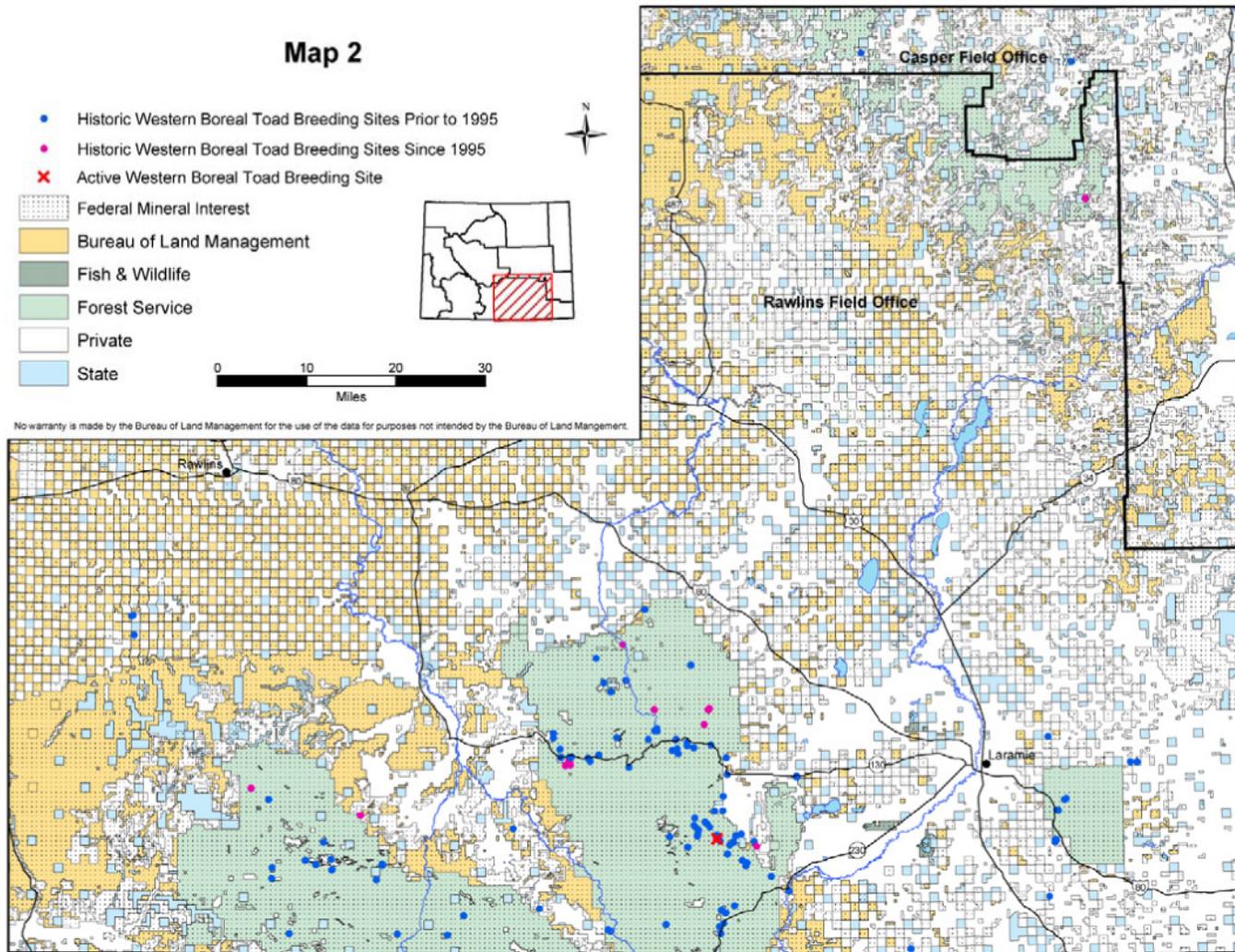
**TABLE 1
DISTRIBUTION OF WESTERN BOREAL TOAD (SOUTHERN
ROCKY MOUNTAIN POPULATION) BREEDING SITES AND
PRIMARY AND SECONDARY HABITATS ACROSS LAND
OWNERSHIP WITHIN THE RAWLINS FO**

Number of Known Historical Breeding Sites			
Surface Owner	Range-wide	Rawlins FO	Percent within Rawlins FO
BLM	1	1	100
USFS	303	303	100
State	0	0	0
Private	59	57	96.6
Other*	0	0	0
TOTAL	363**	361	99.4
Primary Habitat			
Surface Owner	Range-wide (Acres)	Rawlins FO (Acres)	Percent within Rawlins FO
BLM	93,485	92,785	99
USFS	140,226	139,968	99
State	34,231	33,234	97
Private	217,515	211,743	97
Other*	5,101	5,101	100
TOTAL	490,558	482,831	98.4
Secondary Habitat			
Surface Owner	Range-wide (Acres)	Rawlins FO (Acres)	Percent within Rawlins FO
BLM	249,281	239,373	96
USFS	65,979	62,839	95
State	81,552	79,601	98
Private	375,697	364,161	97
Other*	903	903	100
TOTAL	773,412	746,877	96.6

* Including Bureau of Reclamation and U.S. Fish and Wildlife Service

** Most of these sites are duplicates of the same location showing different dates, observers, etc.

Map 2: Western Boreal Toad Breeding Sites and Surface & Subsurface Ownership



ANALYSIS OF PROPOSED MANAGEMENT ACTIONS, EFFECTS, AND DETERMINATIONS

The proposed actions include management actions or prescriptions described in the Rawlins RMP. The Rawlins RMP represents a selection of management actions that attempt to resolve planning issues and provide for sustained multiple use of public lands and resources (BLM 1990). The following sections describe the management actions in the Rawlins RMP that may affect the western boreal toad. Direct and indirect effects are presented after each management action. The Rawlins RMP provides a complete description of each management prescription (BLM 1990).

Planning and Management for Areas of Critical Environmental Concern

Management Actions

Four Areas of Critical Environmental Concern (ACECs) are designated in the Rawlins FO, including Como Bluff, Sand Hills, Jep Canyon, and the Shamrock Hills Raptor Concentration Area. Each ACEC is managed to achieve goals and objectives specific to the area and to its special resource values. These ACECs are designated to protect unique resources such as cultural values (Como Bluff), unique vegetation and wildlife habitats (Sand Hills), big game crucial winter range (Jep Canyon), and raptor nests (Jep Canyon and Shamrock Hills).

Management actions for other programs in the ACECs will be guided by the general decisions found in the other sections of the RMP. Management actions for ACECs include appropriate application of the *Wyoming BLM Standard Mitigation Guidelines for Surface Disturbing Activities*.

Effects Analysis

No known active or historical breeding sites occur within the designated ACECs, although two historical breeding locations are found approximately 2 and 4 miles south of the Jep Canyon ACEC (**Map 2**). Primary and secondary habitats occur in the Jep Canyon and Sand Hills ACECs. Primary and secondary habitats for boreal toads do not occur in the Como Bluff or Shamrock Hills ACECs. Management actions that may disturb the surface would be minimized and would be subject to applicable conservation measures (section 4.0). 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 pertaining to ground disturbance will be applied. Special restrictions will be applied to management actions in ACECs that include cultural and paleontological resources, minerals, fire, ORV, vegetation and soils, and wildlife habitat (BLM 1990). None of these additional restrictions is specifically directed toward protection of the western boreal toad or its habitat, but they may indirectly benefit this species by minimizing surface disturbances.

Determination

Implementation of ACEC management actions, as presented in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing (beneficial)** of the western boreal toad. This determination is based on the low potential to disturb primary or secondary boreal toad habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions

authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Cultural Resources Management

Management Action

The objectives of cultural resources management are to:

- Protect and preserve representative samples of the full array of cultural resources for the benefit of scientific and socio-cultural use;
- Ensure cultural resources are fully considered in all land use planning and management decisions;
- Manage cultural resources so the scientific and socio-cultural values are not diminished, but rather are maintained or enhanced;
- Ensure BLM's undertakings avoid inadvertent damage to both federal and nonfederal cultural resources;
- Stabilize and protect significant sites and segments along the Overland Trail, the Cherokee Trail, and the Rawlins-Fort Washakie Trail; and
- Maintain the integrity of existing and proposed National Natural Landmarks (NNLs).

The BLM is required to conduct Class I, II, or III inventories for actions involving BLM-administered public land or federal minerals that may cause surface disturbance. Class I surveys involve compiling existing cultural resources data, including a review of Wyoming State Historic Preservation Office records. Class II inventories include transect surveys with a spacing that is typically greater than 30 meters. Class III inventories include surveys that are more intensive than Class II surveys and typically have a 30-meter transect spacing.

The BLM will seek listing on the National Register of Historic Places for eligible sites along the Overland, Cherokee, and Rawlins-Fort Washakie Trails. The BLM will take appropriate actions (such as protective fencing of segments of the trails or stabilization of deteriorating buildings) to meet the objectives for significant trail segments. Lands in the proposed Gangplank NNL, Big Hollow NNL, and Sand Creek NNL will be considered for disposal to organizations or agencies that would manage these areas in accordance with their NNL status.

Where appropriate, the BLM will pursue acquisition of legal access to trail segments. The BLM will categorize cultural resources for management purposes (such as public use, scientific, and socio-cultural). These actions will be carried out in accordance with law, policy, and guidance to meet the objectives for cultural resources management.

Effects Analysis

Cultural resource surveys have the potential to impact western boreal toads if Class II or Class III surveys are conducted in primary or secondary habitat. Cultural surveys in primary and secondary boreal toad habitats may disturb the surface and result in the destruction or disturbance of conditions suitable to boreal toads. Potential loss of primary and secondary habitats caused by Class II and III cultural surveys is difficult to quantify, but is not expected to limit the range-wide availability of these habitats.

Determination

Implementation of management actions under the cultural resource program, as presented in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the low potential for projects under this program to take place in primary or secondary boreal toad habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Paleontological Resources

Management Action

The objective of paleontological resource management is to maintain the integrity of the scientific value of paleontological resources. Inventories will be conducted on a case-by-case basis for each proposed surface disturbance to ensure maintenance or integrity of paleontological values.

Effects Analysis

Class I paleontological surveys do not entail any field work and will therefore not impact the western boreal toad. Class II and Class III paleontological surveys have the potential to impact western boreal toads habitats if conducted in primary or secondary habitats by disturbing or removing habitat during excavation. Potential loss of primary and secondary habitats caused by Class II and III paleontological surveys is difficult to quantify, but is expected to be highly localized and uncommon. These potential effects to boreal toad habitats are not expected to affect the availability or suitability of suitable habitats range-wide.

Determination

Implementation of paleontological resource management actions, as presented in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the potential for projects under this program to take place in primary or secondary boreal toad habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Fire Management

Management Action

The objectives of fire management are to concentrate fire suppression efforts in areas containing high resource or human values, and in areas with intermingled land ownership patterns. In addition, fire management uses prescribed fire to help meet the objectives of other programs (such as reduction of fuels, or maintenance or improvement of wildlife habitat or range condition). Approximately 60 percent of the FO is designated as a full suppression area where there are no equipment restrictions. Approximately 3 percent of the FO is designated as a full fire suppression area “with management options.” Restrictions may be imposed on the use of standard full suppression firefighting techniques in these areas. Approximately 36 percent of the FO is designated as a limited fire suppression area.

The remaining 1 percent of the FO is proposed for a limited suppression classification; the classification would be assigned after consultation and agreement with landowners in the area. If all parties concerned cannot agree to allow limited suppression of wildfires, the area will be managed under a full suppression classification.

A fire management plan will be prepared, specifying criteria for protecting high-value resources such as significant cultural resources, crucial winter range for big game, high-priority watersheds, and high-value scenic areas, and threatened and endangered species habitat. The fire management plan will include operational aspects of implementing limited suppression designations. An escaped fire analysis will be conducted to determine the appropriate course of action if fires cannot be contained within the first burning period, or if they exceed the criteria established for limited suppression. Prescribed burning will be used to achieve management objectives such as those for allotment management plans (AMPs) and habitat management plans (HMPs). Proposals for prescribed fire will be considered on a case-by-case basis to ensure environmental integrity and consistency with multiple resource objectives and activity plans.

Effects Analysis

Fire management activities have the potential to impact western boreal toads if they are conducted in areas of primary and secondary habitat without any management restrictions or appropriate conservation measures. Unrestricted operation of fire suppression equipment could result in damage or destruction of primary and secondary western boreal toad habitat. Damage or destruction of primary and secondary habitats resulting from fire management actions would be localized and unlikely. Fire management could also have a positive effect on western boreal toads by diminishing the risk of catastrophic wildfires, and reinstating a natural fire regime in primary and secondary boreal toad habitat on lands administered by the BLM.

Determination

Implementation of fire management actions, as presented in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. While some actions associated with certain aspects of this program may impact individuals, the implementation of the BLM-committed Conservation Measures of Section 4.0 of this document are expected to minimize those impacts, and will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Forest Management Decisions

Management Action

The objective of forest management is to enhance the health, productivity, and diversity of the forestlands. The allowable harvest level specified in the RMP is 20 million board feet (MMBF) per decade. Harvest could occur on commercial forestlands in the FO designated for intensive or restricted management of forest products (about 25,900 acres or 23 percent of the total forestland in the Rawlins FO). The following are the types of actions proposed to meet the forest management objectives on these lands.

About 19,200 acres will be intensively managed for forest products. These lands will be managed to achieve a highly productive forest by implementing activities for enhancing tree growth and health. Multiple-use values will be fully considered. Timber sales will be concentrated in these areas. About 6,700 acres will be managed restrictively for forest products. Included in this category are areas such as steep slopes and riparian areas surrounded by buffer zones.

Forest management practices, such as timber harvesting, regeneration of disturbed sites, stand replacement, and pre-commercial thinning, will be carried out to meet the forest management objectives. Stands of unmerchantable, nonproductive lodgepole pine will be replaced with young, vigorous trees. Minor wood products such as fuel wood, posts and poles, Christmas trees, and wildings will be available on demand.

The BLM will pursue acquisition or maintenance of legal access to certain areas of public land to support intensive management of commercial forestland. Consolidation of land ownership on Elk Mountain and Shirley Mountain will be considered as opportunities arise. About 85,200 acres of other forestlands will be managed only to enhance other uses. Aspen, juniper, and other noncommercial tree species are included in this category. About 300 acres are not available for management of forest products because the timber is not harvestable, the stands are too small, their locations are scattered, or the terrain does not allow appropriate access.

Effects Analysis

Vegetation types that represent potential harvestable timber resources, such as ponderosa pine and lodgepole pine forests, also represent potential western boreal toad breeding sites and habitat. Potential effects include loss and fragmentation of upland forest habitat. As a result, timber harvest activities may result in direct effects to the western boreal toad if timber harvests occur at historic breeding sites, unknown occupied sites, or primary and secondary habitats (**Map 1**). The magnitude of these potential effects is difficult to quantify without information specific to future forest management projects.

Determination

Implementation of forest management actions, as presented in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. While some actions associated with certain aspects of this program may impact individuals, the implementation of the BLM-committed Conservation Measures of Section 4.0 of this document are expected to minimize those impacts, and will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Lands Program Management

Management Actions

The objectives of lands program management are to support the goals and objectives of other resource programs for managing the BLM-administered public lands and to respond to public demand for land use authorizations.

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 in placement and routing of new facilities. Effects will be intensively mitigated if it becomes necessary for facilities to be placed within avoidance areas (BLM 1990).

Communication site plans will be developed for new and existing sites. New sites may be established, with appropriate analysis, on a case-by-case basis. Site categories will be established for all communication sites according to the following criteria: High-power communication sites will be reserved for broadcast television and radio transmitters of 100 watts or more. Low-power communication sites will be reserved for microwave, mobile telephone and radio, and other transmitters that use fewer than 100 watts. A 2-mile buffer will be maintained around all communication sites to ensure their integrity.

About 66,000 acres are available for consideration of disposal under the criteria set forth in the Federal Land Policy and Management Act (FLPMA) (BLM 1990). These lands may be disposed of by any appropriate means permitted under the land laws, including desert land patent, exchange, sale, and recreation and public purpose (R&PP) patent. These lands were identified during the planning effort for the Rawlins RMP as meeting the FLPMA criteria for disposal. However, the inventory of public lands meeting the FLPMA disposal criteria was not completed for the entire FO. Therefore, no land disposal decisions have been made in the RMP. In addition, proposals for disposal of lands that have not met the FLPMA criteria will be considered if they are consistent with the objectives of the RMP.

Before any disposal action can be taken, BLM will consider each individual tract and will include public involvement. The preferred method of disposal or acquisition of lands by BLM will be through exchange (BLM 1990).

Lands withdrawn in the FO, under section 204(1) of FLPMA, will be evaluated to determine whether existing withdrawals are serving their intended purposes. These reviews are not associated with development of the RMP. Thus, there are no decisions regarding the termination of any withdrawals in this RMP. The existing withdrawals in the FO will remain unless it is determined that they should be terminated and, if necessary, a plan amendment to the Rawlins RMP is written. This determination or amendment will be based on a full examination of issues associated with withdrawal terminations. These issues may include the land use, environmental, and other factors associated with opening public lands to access under the public land laws or to mineral location under the mining laws. The BLM will initiate new withdrawals, which would include recreation sites (650 acres); historic sites (1,320 acres); and a rare plant population (10 acres) (BLM 1990).

Effects Analysis

There is the potential for utility lines to be routed near or within potential western boreal toad habitat. In general, existing communication sites are not located in areas of known breeding sites. If new communication sites are located adjacent to or within potential western boreal toad habitat, their construction and maintenance could result in effects to this species and its habitat. Potential effects that may occur include habitat loss and fragmentation resulting from construction of new roads and utility lines (above- and below-ground) and related increases in human presence (vehicle traffic and construction activity). However, adverse effects are expected to be limited because most communication sites are generally located along major highways or adjacent to major cities, which do not represent suitable habitat for western boreal toads. Acquisition and maintenance of access areas could result in injury or mortality to resident toads and may cause direct impacts to suitable habitats caused by increasing the access and the potential for disturbance to these habitats.

Determination

Implementation of lands program management actions, as presented in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. While some actions associated with certain aspects of this program may impact individuals, the implementation of the BLM-committed Conservation Measures of Section 4.0 of this document are expected to minimize those impacts, and will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Livestock Grazing Management

Management Actions

The objective of livestock grazing management in the Rawlins FO is to enhance livestock grazing while maintaining a balance among economic uses, enhancement of wildlife habitat, watershed, and riparian areas, while maintaining or improving range conditions over the long term. Livestock grazing will also be managed to protect or enhance other resource values.

Three separate grazing environmental impact statements (EISs) cover the Rawlins FO. Two of these EISs (the Divide Grazing and the Seven Lakes Grazing EISs) were completed before BLM developed the Rawlins RMP. The livestock grazing management decisions for the Divide Grazing and the Seven Lakes Grazing EIS areas will continue in effect as outlined in the Divide and Seven Lakes Rangeland Program Summaries (RPS). These two RPSs are incorporated into the Rawlins RMP by reference. The RPS for the Medicine Bow Grazing EIS area will be developed in the near future. In conjunction with the RPS, a single set of priorities encompassing all three grazing EIS areas will be developed to coordinate the entire rangeland management program for the Rawlins FO. The total authorized livestock grazing use will not exceed the recognized active preference in the FO. Currently, this preference represents a maximum of 480,754 Animal Unit Months (AUMs) of annual forage (161,340 AUMs are in the Medicine Bow Grazing EIS area; 262,101 are in the Divide Grazing EIS area; and 57,313 are in the Seven Lakes Grazing EIS area).

The current amounts, types, and seasons of livestock grazing will be authorized until monitoring indicates that an adjustment is necessary, or that a class of livestock or seasonal use modification can be accommodated. Requests for changes in seasons of use or type of livestock will be considered on a case-by-case basis. Requests for conversions from sheep to cattle will be considered along with management actions to maintain or improve riparian conditions. Any adjustments in livestock grazing will be consistent with current policies and procedures. These adjustments will result from inventories, monitoring studies, and consultation, coordination, or negotiation with grazing permittees. Adjustments may also result from decisions to change the allocation of land uses, or from transfers of BLM-administered public lands to other agency jurisdictions or into non-federal ownership. Furthermore, the Rawlins rangeland monitoring plan will be reviewed and updated annually. This monitoring plan, which details the type and purpose of monitoring at the allotment level, is on file in the Rawlins administrative office.

Grazing systems will be designed to achieve the livestock-grazing objective. Existing Allotment Management Plans (AMPs) will be maintained and updated as necessary. In addition, new AMPs will be developed for selected grazing allotments as funding allows. "I" allotments have first priority. Existing types and levels of grazing use will be continued in "M" allotments. Proposals to change existing use may also require changes in the allotment categorization, and level of management attention and monitoring. Range improvements may be maintained or developed to enhance multiple-use values. Private investment

will be encouraged and authorized when consistent with the multiple-use objectives for the allotment. Grazing use in “C” allotments will continue at present levels. Proposals for changes in use will be reviewed and allowed if they do not conflict with other values. Private investment in range improvements will be allowed when it does not conflict with multiple use of the public land.

Within the Medicine Bow EIS area, livestock grazing will be excluded from the Pennock Mountain Wildlife Habitat Area (6,285 acres), the Wick Wildlife Habitat Area (320 acres), the Laramie Peak Wildlife Habitat Area (2,858 acres), and the Sybille Wildlife Research Unit (680 acres). A grazing agreement has been negotiated in the Split Rock/Duck Creek Agreement Area (1,760 acres) accommodating the bighorn sheep that use the area for lambing. A projected 1,725 acres of riparian habitat will be developed for grazing treatments. Special riparian needs will be the primary consideration in the location and design of range improvements and grazing systems in these areas. If necessary, livestock will be excluded from riparian areas until they improve sufficiently to support limited seasonal grazing. Furthermore, special attention will be given to maintaining wildlife habitat on 13,140 acres containing crucial winter range for big game and other important habitat. These areas will also receive special attention for developing and implementing AMPs and other activity plans.

Historic populations and potential habitat for the western boreal toad are located within the Medicine Bow Grazing Area. No grazing restrictions are mentioned for BLM-managed lands located adjacent to the Mortenson Lake NWR or the Hutton Lake NWR.

Effects Analysis

Trampling and over-grazing caused by livestock in areas occupied by western boreal toads or in suitable habitats could result in negative effects to western boreal toad populations and habitat. The magnitude of these potential effects would vary with intensity and duration of livestock grazing in these areas. Potential indirect effects from livestock grazing may include soil compaction, damage to vegetation, sedimentation of suitable aquatic habitats, and introduction of noxious weeds.

Determination

Implementation of livestock grazing management actions, as presented in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Minerals Management

Minerals addressed as part of the Rawlins RMP include coal, oil and gas, and other minerals. Management actions are established as part of the RMP for leasable, locatable, and salable minerals.

Management Actions

The management objective for coal resources is to provide for short- and long-range development of federal coal in an orderly and timely manner, consistent with the policies of the federal coal management program, environmental integrity, national energy needs, and related demands. The objective is also intended to protect important resources by specifying whether federal coal can be leased for surface, subsurface, or in situ mining methods; and to allow analysis of alternative areas for consideration of

future leasing. A north-to-south coal development sequence will be followed in the entire area west of Rawlins and south of Interstate 80 as needs are identified. The BLM will process all applications for leasing in areas designated acceptable for further consideration for coal leasing. For each application, BLM will conduct a site-specific environmental analysis and will consider the development sequence described above and other environmental and socioeconomic factors.

The management objective for oil and gas is to provide opportunity for leasing, exploration, and development while protecting other resource values. The entire FO is open to oil and gas leasing. Leases will be issued with the restrictions needed to protect resources. Surface disturbance will be restricted and intensively managed to maintain important resource values in the ACECs, the Baggs Elk Crucial Winter Range, and in overlapping crucial winter ranges for the various big game species. All lands open to oil and gas leasing are also open to geophysical exploration. The restrictions or requirements may be included in approving subsequent exploration and development in cases where federal oil and gas leases are issued (1) without stipulated restrictions or requirements later found to be necessary; or (2) with stipulated restrictions or requirements later found to be insufficient. These restrictions or requirements may be included only as reasonable measures or as conditions of approval (COA) in authorizing applications for permit to drill (APD), sundry notices, or plans of development (POD). Conversely, in cases where leases are issued with stipulated restrictions or requirements later found excessive or unnecessary, they may be modified, excepted, or waived when authorizing APDs, sundry notices, or PODs.

The management objective for other leasable minerals is to provide opportunity for leasing, exploration, and development of oil shale, geothermal resources, and non-energy leasable minerals while protecting other resource values. The entire FO is open to leasing of oil shale, geothermal resources, and non-energy leasable minerals. Lease applications will be considered on a case-by-case basis. Stipulations to protect important surface values will be based on interdisciplinary review of individual proposals and environmental analysis.

The management objective for locatable minerals is to provide opportunity for location of mining claims and mineral development while prohibiting these types of activities on lands that are not compatible. The entire FO is open to location of mining claims and mineral development, except for areas that are closed or are to be closed and withdrawn from mineral location (BLM 1990).

The management objective for salable minerals is to provide availability of mineral materials in convenient locations while protecting surface resources. The FO is open to the sale of mineral materials. Sales will be considered on a case-by-case basis. Stipulations to protect important resource values will be based on interdisciplinary review and analysis of individual proposals.

Effects Analysis

Western boreal toad habitat could be affected in the event that oil and gas exploration and development activities occur within primary or secondary habitat. However, BLM has limited rights to subsurface minerals that coincide with historic western boreal toad breeding sites (**Map 2**). Ten breeding sites are located in areas having BLM subsurface ownership within this FO. Only 2 percent of primary habitat and 11 percent of secondary habitat for western boreal toad is located in areas having BLM subsurface ownership. One historic breeding site is located on BLM surface ownership. Based on the limited amount of habitat that coincides with BLM subsurface ownership along with restrictions that limit surface disturbing activities within riparian areas and within 500 feet of streams, the possibility for impacting the western boreal toad as the result of oil and gas management is expected to be extremely small. Access roads leading to oil and gas exploration and development activities could occur, but the likelihood of occurrence is considered to be very low.

No adverse effects to the western boreal toad are expected to occur as a result of exploration or development of coal resources on lands administered by BLM because leasable coal areas do not occur within areas of known breeding site or habitat.

Determination

Implementation of minerals management actions, as presented in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing (discountable)** of the western boreal toad. This determination is based on the limited amount of habitat that coincides with BLM subsurface ownership along with restrictions that limit surface disturbing activities within riparian areas and within 500 feet of streams, which is the habitat area occupied by boreal toads. The implementation of the Conservation Strategies of Section 4.0 of this document will also further serve to protect the species sufficiently to ensure that no minerals actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed or impact boreal toads.

Recreation Management

Management Actions

The objectives of recreation management are to ensure the continued availability of outdoor recreational opportunities, to meet legal requirements for the health and safety of visitors, and to mitigate conflicts with other resource values.

Activity plans for the Nine Mile Hill and Big Creek sites will be revised before they are implemented. Maintenance of existing developed and undeveloped recreation sites will be continued. Existing activity plans for the Nine Mile Hill and Big Creek sites will be revised before they are implemented. Development of new recreation sites will be prioritized as follows: (1) a boat launch and a picnic area at Prospect Creek, (2) a recreation site at Jelm Mountain, and (3) a recreation site in the Shirley Mountains. Additional sites will be considered for development as opportunities arise.

The Continental Divide National Scenic Trail Special Recreation Management Area (SRMA) covers 80 miles of trail through BLM-administered public land. The area will be managed to provide opportunities for trail users to view the diverse topographic, geologic, vegetative, and scenic phenomena and wildlife that characterize the Continental Divide and to observe examples of human use of the natural resources. The exact trail route will be identified through activity planning, which will also determine where easements or rights-of-way will be needed on private or state-owned land.

The North Platte River SRMA covers 3,550 acres, and will be managed to provide high-quality recreation, especially for boating, fishing, camping, and sightseeing. Management will also be aimed at providing public facilities and continued access. Surface disturbance within 1/4 mile on either side of the river will be restricted to maintain the quality of the visual resources. An activity plan has been written for a portion of this area. That plan will be revised to include the entire SRMA.

The Shirley Mountains SRMA covers 24,800 acres and will be managed to protect the cave system while other resource uses will be allowed aboveground. Specific guidelines for recreation management and surface use will be developed during activity planning.

An Off-Road Vehicle (ORV) implementation plan will be prepared for the FO. More details on off-road vehicle use and management will be developed in this implementation plan. ORV designation areas are identified throughout the FO. With some exceptions, the FO is open to use of motorized over-the-snow vehicles, provided they do not adversely affect wildlife or vegetation (BLM 1990). With some exceptions, all other motorized vehicle use in the FO is limited to existing roads and trails.

Because of the mixed land ownership pattern and multiple resource concerns, completion of an effective ORV implementation plan for the Dune Ponds area depends entirely on close coordination with owners of adjacent private property, the Wyoming State Land Board, the WGFD, and other interested parties. The plan will also be closely coordinated with the wildlife, soils, and livestock grazing programs to ensure multiple resource concerns are addressed.

The BLM will coordinate and cooperate with owners of adjacent properties, interested individuals, organizations, and agencies when preparing plans to implement ORV designations (BLM 1990). Plans for rehabilitation or mitigation of ORV use will be developed and implemented for specific problem areas within the Sand Hills area and the Dune Ponds Cooperative Management Area.

Consistent with the Wyoming BLM access policy, the BLM will pursue acquisition of legal access to certain areas to ensure continued availability of outdoor recreation. Consolidation of land ownership will be pursued in the following areas to increase recreational opportunities for the public. Areas of high priority include: Bennett Peak, Dugway, Miracle Mile, and North Platte River area. Areas of moderate priority include: Dune Ponds, Elk Mountain, and Shirley Mountains caves. Areas of low priority include: Bennett Mountains, Encampment River Canyon, and Ferris Mountains. The preferred method of consolidation is through exchange.

Effects Analysis

Impacts to boreal toads and their habitats may occur at developed recreation sites where ORV use is not restricted. Several areas located adjacent to breeding sites or habitat, including Encampment River Canyon, Encampment River Trail, Pennock Mountains Wildlife Habitat Area, and Wick Brothers Wildlife Habitat Areas are closed to ORV use from November 15 to April 30. Restriction of vehicle use will limit potential negative effects caused by ORV use to breeding sites and habitat during this period.

The majority of potential western boreal toad habitat is located within an area where ORV use is restricted. Western boreal toad breeding sites and habitat located adjacent to existing roads and trails in these areas may be affected by ORV use. However, restricting ORV use to roads will reduce the potential for effects to historic breeding sites and habitat.

Determination

Implementation of livestock grazing management actions, as presented in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the potential for ORV use to impact suitable boreal toad habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Sensitive Plants Management

Management Actions

The objectives of sensitive plants management are to maintain or enhance the population of two plant species and one community within the Rawlins FO. The protection goals apply to Gibben's beardtongue (*Penstemon gibbensii*), persistent sepal yellowcress (*Rorippa calycina*), and the Muddy Gap cushion plant community. Proposed surface-disturbing activities will be examined on a case-by-case basis to determine the potential adverse effects (BLM 1990). Any proposed developments, uses, and facilities will be managed to avoid damage to sensitive plant species and communities.

Effects Analysis

Actions associated with management of sensitive plant resources will have no effect on western boreal toad or their habitats within the Rawlins FO because of the absence of known occurrences and suitable habitats in the areas identified for sensitive plants management.

Determination

Implementation of the sensitive plant management actions, as presented in the Rawlins RMP, will have **no impact** on the western boreal toad or its habitat. This determination is based on the absence of known boreal toad populations or habitats in areas identified for sensitive plants management.

Soil, Water, and Air Management

Management Actions

The BLM has established a number of management actions to maintain soil, water, and air quality. The objectives of soil, water, and air management are to:

- Prevent deterioration of air quality beyond applicable local, state, or federal standards and enhance air resources where practical.
- Prevent impairment of important scenic values caused by declining air quality.
- Maintain soil cover and productivity where adequate and increase soil cover and productivity where inadequate.
- Maintain riparian areas in good or excellent condition and improve riparian areas in fair to poor condition.
- Control flood and sediment damage from natural or human causes.
- Reduce salt loading in watersheds within the Colorado River Basin.
- Meet or exceed established standards for quality of surface water and groundwater where water levels and quality have been lowered by human causes.
- Provide physical and legal availability of water for use by the public and by federal, state, and local agencies for fisheries and wildlife, and for livestock, recreational, municipal, and industrial uses.

The BLM will implement intensive land-use practices to mitigate salt and sediment loading caused by surface disturbance. These practices will be carried out in the following areas, by priority: (1) Muddy Creek, (2) Sage Creek, (3) Second and Third Sand Creeks, and (4) the Little Snake River Basin (excluding the Muddy Creek watershed). Watershed or other activity plans will address site-specific

problems and will include monitoring for salt and sediment loading. In other areas, the BLM will carry out watershed management practices designed to meet objectives for the soils, water, and air resources. These practices will be included in activity plans such as AMPs and HMPs. Surface disturbance will be prohibited on unstable areas unless the instability can be alleviated. Specific unstable areas such as landslides, slumps, and areas exhibiting soil creep will be identified individually.

Effects Analysis

Most of the actions associated with soil, water, and air resources management are focused on reducing salt and sediment loading in sensitive areas affected by activities that disturb the surface. As a result, management actions targeted at maintenance of air and water quality are not expected to directly impact the western boreal toad. Areas specifically identified in the RMP for salt and sediment loading include the Muddy Creek drainage that is considered primary habitat for the western boreal toad habitat. The Muddy Creek drainage currently is not known to contain western boreal toads.

Determination

Implementation of the soil, water, and air management actions, as prescribed in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad and its habitat. This determination is based on the absence of known boreal toad populations or habitats in primary toad habitat identified for salt and sediment management.

Visual Resource Management

Management Actions

Visual Resource Management or VRM is a system for minimizing the visual impacts of surface-disturbing activities and maintaining scenic values for the future. The objective of visual resource management is to minimize adverse effects to visual resources, while maintaining the effectiveness of land use allocations. Most breeding sites and much of the habitat for western boreal toad is located within the Medicine Bow National Forest. Lands under the jurisdiction of the USFS are not included in any Visual Resource Management (VRM) class. The majority of lands located adjacent to the Medicine Bow National Forest is classified as a Class II VRM. Class II areas are designated to retain the existing character of the landscape. Only a low level of change to landscape character is allowed in Class II areas.

Effects Analysis

Designation of areas as Class II VRM may reduce the potential for activities that disturb the surface to result in a major modification to the landscape. Limiting the potential for activities that disturb the surface could also help minimize potential effects to western boreal toads and their habitats, including habitats located adjacent to the Medicine Bow National Forest.

Determination

Implementation of the visual resources management action, as prescribed in the Rawlins RMP, **may impact, but is not likely to contribute to the need for federal listing (beneficial)** of the western boreal toad. This determination is based on the intent to preserve the existing character of landscapes designated as Class II VRM that may also support boreal toad populations or suitable habitat. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this

document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Wild and Scenic River Management

Management Actions

There are nine waterways in the Rawlins FO that have been determined as eligible for Wild and Scenic River (WSR) status under the Wild and Scenic Rivers Act (WSRA) of 1968, as amended. Those waterways include: Big Creek, Bunker Draw, Cherry Creek, Duck Creek, Encampment River, Littlefield Creek, Muddy Creek, North Platte River, Skull Creek (includes two unnamed tributaries). The public lands portions managed by the BLM on eight of the nine waterways were determined not to be suitable for WSR status. The Encampment River was determined to be suitable for Wild and Scenic River status. The management objective for the public lands that meet the WSR suitability factors is to maintain or enhance their outstanding remarkable values and WSR classification, until Congress considers them for possible designation. The interim management prescriptions for the Encampment River will apply only to the waterway corridor which extends the length of the identified waterway segment (2.51 miles along the river) and includes the waterway area, its immediate environment, and an average of no more than one quarter mile (1,320 feet) from the ordinary high water mark on both sides of the waterway.

Effects Analysis

Primary and or secondary habitat areas for boreal toads have been identified on Big Creek, Encampment River, Littlefield Creek, Muddy Creek, and the North Platte River, with only the Encampment River meeting the suitability criteria, so management actions resulting from WSR designation would only affect the Encampment River. Primary and or secondary habitat for boreal toads did not occur on Bunker Draw, Cherry Creek, Duck Creek (although a historical record has been documented about 18 miles north on Cottonwood Creek), or Skull Creek (with its two unnamed tributaries). WSR management would not have any affect on boreal toads or their habitats in all waterways except the Encampment River as they are not designated for WSR status. The 2.51 miles along the Encampment River would be protected by the WSR classification until Congress either designates permanent WSR status or removes the WSR classification. WSR classification implements the focus of maintaining or enhancing the outstanding remarkable scenic, recreational, historical, and wildlife values and maintaining the relatively primitive, pristine, rugged, and unaltered character of the river area. Restrictions on any impacting activities would be placed on this river segment and corridor.

Determination

Implementation of WSR special designation management on the 2.51 mile segment of the Encampment River **may impact, but is not likely to contribute to the need for federal listing (beneficial)** of the western boreal toad. The basis for the determination is because protective measures will be placed on the river segment and corridor, disallowing any impacting activities from occurring and protecting the boreal toad and its habitat from impacts; this will actually benefit the boreal toad and its habitat.

Wilderness Study Area Management

Management Actions

The BLM has recommended four wilderness study areas (WSAs) in the Rawlins FO to Congress for wilderness designation. The Encampment River Canyon, Prospect Mountain, Adobe Town, and Ferris

Mountains are all recommended WSAs. The Encampment River Canyon WSA has primary and secondary habitat for the boreal toad and is the only WSA in the Rawlins FO with any boreal toad habitat. The interim management prescriptions for WSAs, including the Encampment River Canyon, requires management by the Bureau of Land Management to preserve their suitability for designation as wilderness until Congress makes a final determination on a Wilderness Study Area. The Encampment River Canyon WSA encompasses 4,547 acres with the Encampment River waterway corridor segment (2.51 miles along the river - the habitat area for the boreal toad) flowing through the center of the WSA. The BLM must manage WSAs in a manner so as not to impair the suitability of such areas for preservation as wilderness. The general standard for management of WSAs is to retain their wilderness character, not allowing actions or impacts that will preclude Congress's prerogatives in either designating the areas as wilderness or releasing them for other non-wilderness uses. WSAs are managed under the Interim Management Policy for Lands Under Wilderness Review (H-8550-1). This management is generally referred to as Interim Management or the Interim Management Policy (IMP). The IMP is the basic reference for WSA management and provides detailed direction on management of activities within WSAs. Some uses prohibited in a designated wilderness may be permitted in a WSA if they are temporary, do not create surface disturbance or do not involve placement of permanent structures. For example off-highway vehicles may drive on designated routes in WSAs and WSAs are open to location of new mining claims. Overall management by the BLM is much more restrictive than on other public lands.

Effects Analysis

The 2.51 miles of boreal toad habitat along the Encampment River will be protected by WSA classification until Congress either designates permanent wilderness status or removes the WSA designation, releasing them for other non-wilderness uses. There are no time limits on Congress, so it is uncertain when final decisions will be made. Wilderness values within all WSAs are being protected by the BLM until Congress acts. BLM authorizes a number of uses to occur in WSAs. Uses include protection of air and watersheds; maintenance of soil and water quality, ecological stability, plant and animal gene pools, protection of archaeological and historical sites, habitat for wildlife; and livestock grazing. WSAs provide opportunities for outdoor recreation including: hunting, fishing, hiking, horseback riding, and camping. Off-highway vehicles may be used on designated routes. WSAs also provide for the exercise of prior valid existing rights such as water rights, mining claims, mineral leases, and rights-of-way. WSAs are open to location of new mining claims.

Determination

Implementation of WSA designation management on the Encampment River Canyon WSA **may impact, but is not likely to contribute to the need for federal listing (beneficial)** of the western boreal toad. The basis for the determination is because protective measures will be placed on the WSA as a whole and on the river segment and corridor, disallowing any impacting activities from occurring - retaining the wilderness character and protecting the boreal toad and its habitat from impacts. No ground disturbing activities will result from WSA designation and because protective measures lessen or preclude many allowed impacting activities; this will actually benefit the boreal toad and its habitat.

Wild Horse Management

Management Action

The objectives of wild horse management are to protect, maintain, and control a viable, healthy herd of wild horses while retaining their free-roaming nature and to provide adequate habitat. There are three wild horse herd management areas (HMAs) within the Rawlins FO. They are the Adobe Town HMA, the Lost

Creek HMA, and the Stewart Creek HMA. Appropriate Management Levels (AMLs) for these areas are: Adobe Town, 700; Lost Creek, 70; and Stewart Creek, 150. These HMAs and AMLs were established in 1994 through analysis and interpretation of the results of extensive monitoring. The boundaries of the HMA were adjusted as a result of additional monitoring since 1994. Inventory, population monitoring, and wild horse management are the responsibility of the Rawlins FO. In addition, a portion of the Antelope Hills HMA is within the Rawlins FO. Habitat monitoring for this portion of the Antelope Hills HMA is the responsibility of the Lander FO. Herd management area plans for each of the three Rawlins HMAs will be revised and updated to reflect current policies and circumstances.

The Adobe Town HMA includes land within the administrative boundaries of the Rawlins and Rock Springs FOs. The northern boundary of the Adobe Town HMA corresponds to the southeastern boundary of the Salt Wells HMA in the Rock Springs FO. Included within the Adobe Town HMA is the Adobe Town Wilderness Study Area and all or portions of 14 grazing allotments. The AMLs for the two HMAs are unaffected by this maintenance action. None of the HMAs are located within or near potential habitat for the western boreal toad.

Effects Analysis

Wild horse management actions are not expected to effect western boreal toad populations or potential habitat because wild horse management areas are not located within or near primary or secondary habitat or within known breeding locations.

Determination

Implementation of the wild horse management actions, as prescribed in the Rawlins RMP, will have **no impact** on the western boreal toad or its habitat. This determination is based on the absence of known populations or suitable habitats within the wild horse management areas.

Wildlife Habitat and Fisheries Management Decisions

Management Actions

The 29 standard habitat types in the Rawlins FO have been ranked by management priority into three categories. High-priority habitat types, which usually support a large number of wildlife species, are not common in the FO. Sound management is required to ensure maintenance or improvement of the vegetative composition and structure of moderate-priority habitat types, which are usually less important to wildlife but are more abundant than high-priority types. There is less vegetative diversity in low-priority habitat types. Because of their abundance and lower wildlife value, these habitat types can be more heavily used by conflicting resources without significant impacts to wildlife. In general, western boreal toad habitat is designated either as high- or medium-priority habitats. While the RMP identifies high- and medium-priority habitat types, it does not include specific management actions for these habitats.

The general objectives for wildlife habitat and fisheries management are to:

- Provide habitat quality adequate to support a natural diversity of wildlife and fisheries, including big game; upland game; waterfowl; non-game species; game fish; sensitive, threatened, and endangered species; and species of special management interest in Wyoming; as well as to assist in meeting the goals of established recovery plans.

- Maintain or improve vegetation condition and avoid long-term disturbance in high-priority standard habitat sites.
- Maintain or improve overall ecological quality, thus providing good wildlife habitat, within the constraints of multiple-use management in moderate- and low-priority standard habitat types.

There will be 16 habitat management areas. Site-specific management actions will be implemented in these areas to improve wildlife habitat. These site-specific management actions will be identified in existing, revised, or proposed HMPs. The HMPs will also address transplants or augmentations of endemic wildlife species. Wildlife and wildlife habitat inventory and monitoring will be implemented in all HMP areas, cooperative management areas, and other portions of the FO. These inventories and monitoring studies will conform to BLM policy and standards found in BLM manuals, Wyoming state office supplements, and Wyoming instruction memoranda. The estimated areas involved in management actions in HMP areas include 60 miles of streams (fisheries); 545 acres of reservoirs; 271,000 acres of raptor habitat; 243,000 acres of high-priority habitat (including wetlands and riparian zones); and crucial winter range for big game species as follows: antelope, 375,000 acres; bighorn sheep, 23,000 acres; deer, 288,000 acres; and elk, 153,000 acres.

Effects Analysis

The RMP specifically identifies management actions for high-, moderate-, and low-priority habitat. Site-specific management actions are to be developed for each of these areas. Because management actions have not been developed, the designation of habitat as high- or medium-priority will not result in any effects to the western boreal toad or its primary and secondary habitats.

Determination

Implementation of the wildlife habitat and fisheries management decisions, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the likelihood that actions identified in specific HMPs would minimize adverse effects to suitable boreal toad habitats and may improve conditions for new boreal toad populations. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Summary of Determinations

Table 2 is a summary of the effects determinations developed for each of the Rawlins RMP management actions.

TABLE 2
SUMMARY OF DETERMINATIONS
FOR THE RAWLINS RMP

Resource	Determination
Planning and Management of Areas of Critical Environmental Concern	May Impact (b)
Cultural Resources Management	May Impact
Paleontological Resource Management	May Impact
Fire Management	May Impact
Forest Management	May Impact
Lands Program Management	May Impact
Livestock Grazing Management	May Impact
Minerals Management	May Impact (d)
Recreation Management	May Impact
Sensitive Plants Management	No Impact
Soil, Water, and Air Management	May Impact
Visual Resource Management	May Impact (b)
Wild and Scenic River Management (2.51 miles on the Encampment River)	May Impact (b)
Wilderness Study Areas (Encampment River)	May Impact (b)
Wild Horse Management	No Impact
Wildlife and Fisheries Management	May Impact

NOTE: May Impact = May Impact, but is not likely to contribute to the need for federal listing (b = beneficial/d = discountable).

Cumulative Effects

Cumulative effects are effects resulting from non-federal actions, including state, local, and private land actions. Cumulative effects from non-federal actions are not expected to have important effects to known historical breeding sites because less than 20 percent of these occur on non-federal lands. Within the Rawlins FO, approximately 244,000 acres (51 percent) and 443,000 acres (60 percent) of primary and secondary habitats, respectively, occur on lands administered by private entities and the state. Based on the proportion of primary and secondary habitats that occur on non-federal lands within this FO, non-federal actions may influence establishment of new populations in currently unoccupied suitable habitats. Non-federal actions are not expected to have direct effects on western boreal toads because the only known populations occur on lands administered by the USFS.

Cumulative effects that may occur to primary and secondary habitat located on private lands include habitat loss and habitat fragmentation resulting from agricultural development and unmanaged livestock grazing of boreal toad habitats. Because no critical habitat has been designated by the USFWS for the western boreal toad, there is the potential for reduction in primary and secondary habitat and habitat fragmentation as private lands are developed. The loss of habitat within the Rawlins FO could be important because the majority of primary and secondary habitat is located on private lands in the FO. Development of private lands would also represent a vital loss of habitat available for future western boreal toad reintroduction efforts.

CASPER FIELD OFFICE

Management actions included in *The Record of Decision for the Resource Management Plan/Final Environmental Impact Statement for the Platte River Resource Area* (BLM 1985) were identified as having the potential to affect the western boreal toad because primary and secondary habitats are located within the Laramie Range area of the Casper FO. The Casper RMP was approved under a Record of Decision dated July 1985. Since 1985, two amendments to the RMP have been completed to address disposal of a uranium mill tailings parcel and one to implement a bald eagle habitat management plan. The Casper RMP provides direction for approximately 1.4 million surface acres and approximately 4.7 million acres of federal mineral estate. For each management action, a series of planning decisions have been developed to serve as a guide for making future management decisions. Management actions specifically addressed under the Casper RMP include:

- Cultural Resources
- Energy and Minerals
- Fire Management
- Forest Management
- Grazing Management
- Lands Management
- Recreation Management
- Soil, Water, and Air
- Wildlife
- Special Designations
 - Areas of Critical Environmental Concern
 - Wild and Scenic Rivers
 - Wilderness Study Areas

In addition to these management action guidelines, the Casper RMP also includes specific management prescriptions for each resource management unit (RMU) located within the Casper FO. A total of 14 RMUs are located within the Casper FO. The RMUs that encompass historic breeding sites or potential western boreal toad habitat include:

- Casper, Muddy Mountain, and Jackson Canyon RMU,
- Bates Hole RMU, and
- Laramie Range Foothills RMU.

Management actions developed specific to each of these RMUs were also considered when assessing potential effects of BLM actions on the western boreal toad.

Environmental Baseline

The Wyoming Natural Diversity Database (WYNDD) has 29 documented element occurrences, three breeding sites (one since 1995), 45 observations (15 since 1995), and 26 locations where specimens have been collected (Keinath and Bennett 2000). The WGFD has recorded 195 sites that have been noted over many years. Many of these sites are duplications, the same location having been visited by the same or different individuals during different years, or visited multiple times within the same year (**Maps 1 & 2**). The WGFD is currently inventorying/verifying these sites, looking for new sites, and checking for breeding activity. Other databases and sources have accounted for numerous observations, breeding sites, and locations from which specimens have been collected. The overall number of sites from all databases

accounts for 363 locations, the vast majority are duplicates (**Tables 1 and 3**). Only one active breeding population, at Bird Creek in Albany County is currently known from Wyoming. This site has been regularly monitored, but no breeding activity was documented from 1998 through 2004 (Loeffler 2001, Turner 2004). No active breeding sites are currently documented in the Casper FO.

Map 1 displays 363 recorded historical western boreal toad sites, which includes all breeding sites, observations and collections, and the primary and secondary habitats for the Southern Rocky Mountain population of the western boreal toad. Again, many of these sites have duplicate records, some with dozens of documented records for the same location. **Maps 1 and 2** depict the two historical sites, for the Southern Rocky Mountain population of the western boreal toad occurring within Wyoming, found within the Casper FO. Three hundred and three (84 percent) of the historical sites occur on lands administered by the USFS. Fifty-seven sites are in private ownership, ten of which have subsurface mineral rights administered by BLM. One historical breeding site is in BLM ownership and occurs in the Rawlins FO area.

Map 2 displays the 363 recorded historical western boreal toad (Southern Rocky Mountain population) breeding sites, including all known boreal toad observations and collections, and depicts land ownership.

Table 3 includes a summary of the number of historical breeding sites and acres of primary and secondary habitat for the entire range of the Southern Rocky Mountain population of the western boreal toad and within the Casper FO. Over 490,000 acres and 773,000 acres of primary and secondary western boreal toad habitats, respectively, have been identified in southeastern Wyoming. Only a small fraction of these habitats occur within the Casper FO, with approximately 7,700 acres (1 percent) of primary habitat and 26,500 acres (3 percent) of secondary habitat occurring within this FO. Within the Casper FO, most of the primary habitat (75 percent, 5,772 acres) occurs on privately owned lands. Approximately 3 percent (258 acres) of primary habitat within this FO is on lands administered by USFS and 9 percent (700 acres) occurs on lands administered by BLM. Of the 26,533 acres of secondary habitat that occurs within the Casper FO, the majority (43 percent, 11,535 acres) occurs on privately owned lands. On lands administered by BLM within this FO, 9,907 acres (37 percent) of secondary habitat exist.

A number of past human-related actions may have contributed to the decline of the Southern Rocky Mountain population of the western boreal toad, including habitat alterations from timber harvesting, grazing, recreation, and water development. However, none of these activities have been shown to be the primary cause for the population decline in the Southern Rocky Mountain population. Resource management activities that negatively affect alpine wetlands may also have detrimental effects on western boreal toads. Aerial spraying of pesticides to control various forest insect pests may affect western boreal toad tadpoles. Human-induced range expansion of the native tiger salamander (*Ambystoma tigrinum*) may be another factor contributing to the decline of the western boreal toad.

**TABLE 3
DISTRIBUTION OF WESTERN BOREAL TOAD (SOUTHERN
ROCKY MOUNTAIN POPULATION) BREEDING SITES AND
PRIMARY AND SECONDARY HABITATS ACROSS LAND
OWNERSHIP WITHIN CASPER FIELD OFFICE**

Known Historical Breeding Sites			
Surface Owner	Range-wide	Casper FO	Percent within Casper FO
BLM	1	0	0
USFS	303	0	0
State	0	0	0
Private	59	2	3
Other*	0	0	0
TOTAL	363**	2	0.55
Primary Habitat			
Surface Owner	Range-wide (Acres)	Casper FO (Acres)	Percent within Casper FO
BLM	93,485	700	< 1
USFS	140,226	258	< 1
State	34,231	997	3
Private	217,515	5,772	3
Other*	5,101	0	0
TOTAL	490,558	7,727	1.6
Secondary Habitat			
Surface Owner	Range-wide (Acres)	Casper FO (Acres)	Percent within Casper FO
BLM	249,281	9,907	4
USFS	65,979	3,139	5
State	81,552	1,950	2
Private	375,697	11,535	3
Other*	903	0	0
TOTAL	773,412	26,531	3.4

* Including Bureau of Reclamation and U.S. Fish and Wildlife Service

** Most of these sites are duplicates of the same location showing different dates, observers, etc.

ANALYSIS OF PROPOSED MANAGEMENT ACTIONS AND EFFECTS

The proposed actions include planning decisions and specific management prescriptions for each RMU described in the Casper RMP. The Casper RMP represents a selection of management actions that attempt to resolve planning issues and sustain multiple use of public lands and resources (BLM 1985). The following sections describe the management actions in the Casper RMP that may affect the western boreal toad. The Casper RMP provides a complete description of each management action (BLM 1985).

Cultural Resource Management

Management Action

Management of cultural resources within the Casper FO will focus on identification, inventory, and preservation. Sites along the Oregon-Mormon National Historic Trail and the Bozeman Trail will be managed to foster, promote, and protect its significant cultural, scientific, and recreational values, as outlined in the National Park Service's *Oregon Trail Comprehensive Management Plan* and cited in the Casper RMP. Surface development will be prohibited on cultural sites within these trails and sites nominated to the National Register. Proposals for surface development within the Notches Dome Archeological District will require an on-site Class III inventory before implementation. This requirement will be voided if BLM completes a Class III inventory for all land within the archeological district. No specific requirements or guidelines that are applicable to western boreal toad are included for this resource in the RMP.

Effects Analysis

Management actions associated with cultural resources within the Casper FO would not affect known historical breeding sites because of the absence of these sites within the FO. Activities that disturb or disrupt the surface may affect primary and secondary western boreal toad habitat. A small proportion of the total range-wide primary and secondary habitats occur within the Casper FO. The likelihood that cultural resource activities would occur in these habitats is considered low. However, cultural resource surveys may have the potential to impact western boreal toads if Class II and III surveys are conducted in primary and secondary western boreal toad habitat. These surveys may alter or destroy suitable habitats. These potential effects are not likely to be important because they would be localized and limited in extent. Impacting these habitats may diminish the potential for future emigration and reduce the opportunity for future reintroduction efforts.

Determination

Implementation of the cultural resource management actions, as prescribed in the Casper RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the potential to disturb suitable boreal toad habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Energy and Minerals Management

Management Action

Lands administered by BLM will remain open to oil and gas leasing and exploration, subject to the stipulations on surface disturbance, wildlife, special resource protection, and no surface occupancy. The surface disturbance stipulation for oil and gas leasing in the Casper FO prohibits surface disturbance within 500 feet of surface water and riparian areas. The No Surface Occupancy (NSO) section of the stipulation is intended to protect unique wildlife, such as threatened and endangered species, which cannot be protected using seasonal restrictions.

Mitigating measures prescribed in the Platte River Oil and Gas Environmental Assessment (EA) (BLM 1982) and the South Big Horn Oil and Gas EA (BLM 1979) will be applied on a case-by-case basis. No leasing will occur within Naval Petroleum Reserve No. 3. In addition, oil and gas leasing is restricted on lands within 1 mile of this reserve. Other specific areas within the Casper FO, characterized by steep slopes, highly erosive soils, or timber, are not open to oil and gas leasing. Oil and gas development is further restricted from several tracts of land (identified in the RMP) because of steep slopes or erosive soils.

Federal coal land, as identified in the Converse County Coal Amendment (BLM 1983), can be considered for further leasing through the competitive leasing program, emergency leasing, lease modifications, or exchanges. Delineated coal tracts on federal lands will be available for competitive leasing in one sale, beginning with a second round in the Powder River lease sale. Tracts previously considered for leasing and newly delineated tracts will also be available for consideration. Any coal tract not selected for inclusion in a lease sale or any tract that is included in a lease sale but not sold can be either re-delineated or dropped from further consideration for sale.

Minerals such as sand and gravel, moss rock, flagstone, and scoria will be available on demand for sale and for free use, subject to case-by-case conditions and stipulations, so that efficient use can be made of the mineral resource. Materials in all areas are available, except those within ¼ mile of the North Platte River for its entire length in the Platte River Resource Area (PRRA). However, sand and gravel operations authorized before August 1, 1984, or federal sand and gravel within the ¼-mile buffer, would be continued.

All BLM-administered mineral estates, except in areas specifically withdrawn from mineral location, will remain open for prospecting and development of locatable minerals. Development is subject to the regulations contained in Title 43 Code of Federal Regulations (CFR) Part 3809. The following areas are withdrawn from mineral location:

- Public water reserves
- North Platte River protective withdrawal
- Leased or patented recreation and public purpose lands
- Muddy Mountain Recreation and Environmental Education Area
- Pathfinder Wildlife Refuge
- Naval Petroleum Reserve No. 3

Effects Analysis

The majority of western boreal toad habitat within this FO is located within 500 feet of surface water or within riparian areas. Some potential western boreal toad habitat is also located within areas that have saturated soils. As a result, surface disturbances are prohibited in most areas within potential western boreal toad habitat. However, potential effects may occur to habitat not included within areas of surface disturbance restriction. Potential effects that may occur as the result of energy and minerals management include habitat loss and fragmentation resulting from construction of new roads, well pads, pumps and other facilities, utility lines (above- and below-ground), and related increases in human presence (vehicle traffic and construction activity).

Determination

Implementation of the energy and minerals management actions, as prescribed in the RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the potential to disturb suitable boreal toad habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Fire Management

Management Action

Prescribed burning will be implemented to manipulate vegetation in areas identified for treatment in the range, forestry, and wildlife programs.

Heavy equipment will not be used to construct firelines in areas containing wagon ruts of the Oregon and Bozeman trails. Cultural resource specialists or area resource specialists will be consulted for locations of identified wagon ruts before use of heavy equipment. Exceptions may be permitted to protect human life. Heavy equipment will generally not be used to construct firelines in critical winter range for elk. The PRRA wildlife biologist will be consulted when fires threaten elk critical winter range. If heavy equipment is used, rehabilitation on firelines will begin immediately after the fire is declared out.

The BLM will pursue cooperative agreements with private landowners and other fire and land management agencies to establish an initial attack plan. That plan would be used for an escaped fire situation analysis plan. These plans will include identification of areas where grading of roads or firebreaks is most needed for fire suppression. In addition, these plans will identify areas where protection from wildfires is most critical. A draft initial attack plan was to be completed by June 30, 1993. Prescribed burning will be implemented where necessary to meet range and timber resource management objectives, but would not be allowed from November 1 through March 31.

Effects Analysis

Fire management activities could result in potential effects to western boreal toads if they are conducted in areas of potential toad habitat without any appropriate restrictions. Unrestricted operation of fire suppression equipment could result in direct disturbance or destruction of primary and secondary western boreal toad habitat. Potential effects include disturbance from off-road emergency vehicles and physical disturbance to vegetation and soils. It is unlikely that full fire suppression would occur in suitable western boreal toad habitat. If full fire suppression fire activities did occur in suitable toad habitats, these would

likely be localized and limited in extent to low-quality suitable toad habitats, not those associated with riparian areas or saturated soils. Fire management may have a positive effect on western boreal toads by preserving primary and secondary western boreal toad habitat on lands administered by BLM.

Determination

Implementation of fire management actions, as prescribed in the RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the potential to disturb suitable boreal toad habitats. Fire management actions may benefit boreal toad habitats by minimizing fire potential in adjacent habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Forest Management

Management Action

A detailed timber management activity plan will be developed for 17 designated areas in the Casper FO, totaling 13,590 acres. Silvicultural practices will complement timber harvesting and increase stand vigor. At least 50 percent of the lodgepole pine and ponderosa pine will be cut, either by selective cutting or by clear cutting. Stands of lodgepole pine seedlings will be thinned by sale as Christmas trees. Stands of commercial lodgepole pine will be thinned by sale of posts, poles, and fuel wood. Over-mature trees infested with dwarf mistletoe will be cut and removed. Clear-cutting of 3 to 5 acres will provide for natural regeneration. If the stand does not regenerate naturally in 3 years, artificial regeneration will be undertaken.

The allowable cut was about 6 MMBF through 1995. The annual cut will average about 600 thousand board feet (MBF) over the 10-year life of this plan. In the first 5 years, the cut will be about 750 MBF per year; for the next 10 years, it will be 500 MBF per year.

Effects Analysis

Vegetation types that represent potential timber harvesting resources, such as ponderosa pine and lodgepole pine forests, also represent potential western boreal toad breeding sites and habitat. Timber harvest activities in areas such as the Baldy Ridge Forest Management Unit may result in direct disturbance or destruction to suitable western boreal toad habitat. These potential effects would be limited because only the Baldy Ridge Forest Management Unit includes a small portion of primary and secondary western boreal toad habitat available in the FO.

Determination

Implementation of forest management actions, as prescribed in the RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the potential to disturb suitable boreal toad habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Lands Management

Management Action

Issues that pertain to administration of lands include land disposition, withdrawals, corridors, and access. A total of 1,700 acres (less than 1 percent of the total FO) have been specifically identified for lease or disposal in the Casper FO. Withdrawals will be established to protect and preserve important resource values. Recommended protective withdrawals total approximately 7,200 acres and are included in Pterodactyl Track, Muddy Mountain Environmental Education Area, Jackson Canyon, and Table Mountain. Designated corridors include: Oregon Trail, Poison Spider Road, U.S. Highway 20-26, Wyoming Highway 259/U.S. 87, and Wyoming Highway 387. Seventeen easements or cooperative agreements will be pursued for access to 38 miles of privately owned lands. Acquisition of two easements was being pursued within the Bates Hole RMU at Bates Creek Reservoir and to Kerfoot Creek. The RMP notes that although these areas would be available for public use, resources along the creek such as wetlands and riparian areas would not be jeopardized. Within the Laramie Range Foothills RMU, the RMP states that easements or cooperative agreements may be pursued to help initiate a forestry program in the area. No specific requirements or guidelines that are applicable to western boreal toad mitigation are included for this resource in the RMP.

Effects Analysis

Land management actions are not expected to result in adverse effects to the primary and secondary habitats of the western boreal toad. A small proportion of these habitats occur on lands administered by BLM. The implementation of integrated mitigation measures limit surface disturbing activities in a variety of environmental conditions, including conditions suitable for primary and secondary toad habitats. As a result, actions related to land management that are authorized by BLM are not expected to directly affect boreal toad habitats.

Determination

Implementation of land management actions, as prescribed in the RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the application of measures intended to minimize effects or transfer of habitats that may support unique conditions for wildlife, including the boreal toad. Retention and acquisition of non-BLM lands of suitable toad habitats may benefit this species. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Livestock Grazing Management

Management Action

Grazing leases will be managed on 1,422,753 acres of public land (100 percent of FO) (BLM 1985). Allotment management plans, cooperative management agreements, and coordinated management plans will be initiated as necessary on priority allotments. Existing weed and pest control practices will continue. The Casper Mountain-Muddy Mountain-Jackson Canyon RMU contains several grazing allotments. These allotments are all located outside of areas identified as western boreal toad habitat. A total of 18 grazing allotments are located within the Bates Hole RMU. Portions of these allotments may

include areas identified as western boreal toad habitat. Grazing within the Laramie Range Foothills RMU is minimal.

Effects Analysis

Within the Bates Hole RMU, Laramie Range Foothills RMU, and Casper Mountain-Muddy Mountain-Jackson Canyon RMU, trampling and over-grazing could result in disturbance or destruction of suitable toad habitats and could cause direct injury or death to toads that may be present. Effects caused by over-grazing are unlikely to occur because livestock monitoring efforts are expected to identify and minimize the effects of potential over-grazing. Potential indirect effects from livestock grazing may include soil compaction, damage to vegetation, and introduction of noxious weeds, which could impact the suitability of boreal toad habitats.

Determination

Implementation of livestock grazing management actions, as prescribed in the RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the potential to disturb suitable boreal toad habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Recreation Management

Management Action

Recreation area management plans (RAMPs) will be completed and implemented according to management objectives and decisions established for each recreation area. Recreation areas include Muddy Mountain, Goldeneye Wildlife and Recreation Area, Middle Fork Management Area, and North Platte River. Recreation management will also consider environmental education areas and management of visual resources. The Casper Mountain-Muddy Mountain-Jackson Canyon RMU and Laramie Range Foothills RMU encourage dispersed recreation with minimal regulatory constraint. The Bates Hole RMU also puts minimal regulatory constraint on recreational activities, but does restrict off-road vehicle use to existing roads and vehicle routes. No specific requirements or guidelines that are applicable to western boreal toad mitigation are included for this resource in the RMP.

Effects Analysis

Primary or secondary habitat located on BLM lands could be affected by recreation activities, especially those lands located within the Laramie Range Foothills RMU. These areas do not include regulatory constraints on recreational activities. As a result, ORV use may disturb or destroy suitable boreal toad habitats. It is likely that ORV use in this RMU would be limited in these habitats because of their relative scarcity in the RMU and the availability other areas open to recreation.

Determination

Implementation of recreation management, as prescribed in the RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the potential to disturb suitable boreal toad habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the

species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Soil, Water, and Air Management

Management Action

The Bates Hole watershed plan for southwestern Natrona County will identify sources of heavy sediment loads in the North Platte River. Short-term, intermediate, and long-term stream monitoring surveys will continue on several streams, including Stinking Creek, Elk Creek, Red Creek, Bear Creek, and Bolton Creek. Surface development will be prohibited within ¼ mile of the North Platte River, within 500 feet of live streams, lakes, reservoirs, and canals associated with riparian habitat, and within 500 feet of water wells, springs, or artesian and flowing wells. No intensive management is planned or will be required for soil, water, air in the Casper Mountain, Muddy Mountain, Jackson Canyon RMU. Because public land is limited in the Laramie Range Foothills RMU (where primary and secondary western boreal toad habitat is delineated), actions will be taken as needed to support other programs such as forestry and recreation.

Surface development is restricted during certain periods to prevent excessive soil erosion and to protect surface water quality. No specific requirements or guidelines that are applicable to western boreal toad conservation are included for this resource in the RMP.

Effects Analysis

The majority of western boreal toad breeding sites are located within 500 feet of surface water or are located within riparian areas. Some potential western boreal toad habitat is located within areas that have saturated soils. As a result, surface disturbances are prohibited in most areas identified as primary and secondary western boreal toad habitat. Impacts from activities such as transmission line, pipeline, and road construction could impact western boreal toads and their habitat. These types of activities would pass through western boreal toad habitat and cause surface disturbance and impacts to boreal toads and their habitat.

Determination

Implementation of soil, water, and air management, as prescribed in the RMP, **may impact, but is not likely to contribute to the need for federal listing** of the western boreal toad. This determination is based on the potential to disturb suitable boreal toad habitats. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Wildlife Management

Management Action

Three wildlife management areas, Table Mountain, Springer/Bump-Sullivan, and Jackson Canyon (management plan had not been completed at the time the RMP was published), are included in the Casper FO. The Casper RMP also states that HMPs will be developed for nine additional areas. These additional areas include Bates Creek Reservoir, Bates Creek aquatic habitat, Upper Laramie River, Teal Marsh Reservoir, Thirty-three mile reservoir, Rawhide Unit, Medicine Bow, Bolton Creek, and Stinking Creek. Specific objectives are described for various species management areas (such as antelope, deer,

sage grouse, and elk). No specific requirements or guidelines that are applicable to western boreal toad conservation are included for this resource in the RMP.

Effects Analysis

Isolated areas of primary and secondary western boreal toad habitat are located adjacent to habitat management units, including Bates Creek Reservoir. These habitats may benefit indirectly from wildlife management actions that are implemented within those areas. However, these potential benefits will likely be limited because relatively small areas of habitat are located adjacent to these areas and management actions are not specific to the needs of the western boreal toad.

Determination

Implementation of wildlife management, as prescribed in the RMP, **may impact, but is not likely to contribute to the need for federal listing (beneficial)** of the western boreal toad. This determination is based on the emphasis of these actions for other species and habitats. Actions identified in specific HMPs would minimize adverse effects to suitable boreal toad habitats and may improve conditions for new boreal toad populations. While some of these actions may impact individuals, the implementation of the Conservation Strategies of Section 4.0 of this document will serve to protect the species sufficiently to ensure that no actions authorized, funded, or carried out by the BLM will contribute to the need for this species to become listed.

Special Designations Management

Management Action – Areas of Critical Environmental Concern (ACECs)

There are seven special designations identified within the Casper FO. These ACECs include Pterodactyl Creek, Red Wall, Salt Creek, Jackson Canyon, Muddy Mountain Environmental Education Area, Casper Sand Dunes, and a general category of Natural Landmarks. No ACECs in this FO are specifically designated for western boreal toads. No specific requirements or guidelines that are applicable to western boreal toad mitigation are included for this resource in the RMP. There is no primary or secondary western boreal toad habitat located in any ACEC in the Casper FO area.

Effects Analysis

Primary and secondary habitat areas will not be affected by management actions implemented in the ACECs. No beneficial effects are expected because relatively small areas of habitat are located adjacent to these areas and management actions are not specific to the western boreal toad.

Determination

Implementation of ACEC special designation management, as prescribed in the RMP, will have **no impact**, on the western boreal toad or its habitat. This determination is based on the lack of primary and secondary western boreal toad habitat located in any ACEC in the Casper FO area.

Management Action – Wild and Scenic Rivers (WSRs)

There are six waterways in the Casper FO that have been determined as eligible for Wild and Scenic River (WSR) status under the Wild and Scenic Rivers Act (WSRA) of 1968, as amended. Those waterways include: the Badwater Creek unit, Upper Buffalo Creek unit, Buffalo Creek (lower section),

Deer Creek, E.K. Creek, and the North Platte River. The public lands portions managed by the BLM on all six waterways were determined not to be suitable for WSR status. Western boreal toads are not known to occur in any of the public land portions of the six segments.

Effects Analysis

No primary or secondary habitat areas have been identified on any of the six WSR segments so management actions resulting from WSR designation would not have any affect on western boreal toads or their habitat.

Determination

Implementation of WSR special designation management will have **no impact** on western boreal toads or their habitats. The basis for the determination is because no suitable portions of waterways within the Casper FO have been recommended as suitable for WSR designation and no western boreal toads have been documented in, nor does any boreal toad habitat (primary or secondary) exist in any eligible waterway segment that was considered for WSR designation within the Casper FO area.

Management Action – Wilderness Study Areas (WSAs)

The BLM has not recommended any wilderness study areas (WSAs) in the Casper FO to Congress for wilderness designation.

Effects Analysis

As no WSAs occur in the Casper FO, no further analysis will be conducted.

Determination

As there are no WSAs within the Casper FO, there will be **no impact** to western boreal toads or their habitat.

Summary of Determinations

Table 4 is a summary of the effects determinations developed for each of the Casper RMP management actions.

TABLE 4
SUMMARY OF DETERMINATIONS
FOR THE CASPER RMP

Resource	Determination
Cultural Resources Management	May Impact
Energy and Minerals Management	May Impact
Fire Management	May Impact
Forest Management	May Impact
Lands Management	May Impact
Livestock Grazing Management	May Impact
Recreation Management	May Impact
Soil, Water, and Air Management	May Impact
Wildlife Management	May Impact (b)
Special Designation Management - ACECs	No Impact
Special Designation Management - WSRs	No Impact
Special Designation Management - WSAs	No Impact

NOTE: May Impact = May Impact, but is not likely to contribute to the need for federal listing (b=beneficial).

Cumulative Effects

Cumulative effects are effects resulting from non-federal actions, including state, local, and private land actions. No cumulative or project-related effects are expected on known historical breeding sites because of the absence of these sites within the Casper FO. Within the Casper FO, approximately 6,769 acres (88 percent) and 13,485 acres (51 percent) of primary and secondary habitats, respectively, occur on lands administered by private or state entities. Based on the proportion of primary and secondary habitats that occur on non-federal lands within this FO, non-federal actions that may affect these habitats have the potential to be important to local populations of western boreal toad and their habitats. Non-federal actions within this FO are not expected to affect wild populations of western boreal toad because no wild populations of this toad are known to occur within the Casper FO.

Cumulative effects that may occur to primary and secondary habitat located on private lands include habitat loss and habitat fragmentation. Because no critical habitat has been designated by the USFWS for the western boreal toad, there is the potential for habit destruction and fragmentation to occur as private lands are developed. The loss of habitat could be significant because the majority of primary and secondary habitat is located on private lands. Development of private lands would also represent a significant loss of habitat available for future western boreal toad reintroduction efforts.

4.0 CONSERVATION STRATEGIES

Implementation of the following BLM-Committed Conservation Strategies would serve to minimize potential impacts of the management actions provided in the Rawlins and Casper RMPs. In addition to the existing conservation measures in the RMPs (items 1 through 3), the BLM has committed to implement conservation measures 4 through 14. The BLM will also consider implementing best management practices (BMPs) (items 15 through 22). The BMPs will be considered on a case-by-case basis at the project level, and are intended to further protect the species, its habitat, and aid in the recovery of the species.

Existing Protections in the Rawlins and Casper RMPs

1. Special Status/Sensitive Species Management, BLM Manual 6840, directs field office managers to implement special status/sensitive species programs within their area of jurisdiction by: 1) Conducting and maintaining current inventories, including surveys for occupancy, for special status/sensitive species on public lands; 2) Providing for the conservation of special status species in the preparation and implementation of recovery plans with which BLM has concurred, interagency plans and conservation agreements; 3) Ensuring that all actions comply with the ESA, its implementing regulations, and other directives associated with conserving special status/sensitive species; 4) Coordinating field office activities with federal, state, and local groups to ensure the most effective program for special status/sensitive species conservation; 5) Ensuring actions are evaluated to determine if special status/sensitive species objectives are being met; 6) Ensuring all actions authorized, funded, or carried out by BLM follow the interagency consultation procedures as outlined in 50 CFR, Part 402; 7) Ensuring results of formal Section 7 consultations including terms and conditions in incidental take statements are implemented. Implementation will ensure that actions authorized by the BLM do not contribute to the need for a species to become listed.
2. Before any land disposal action can be taken, BLM will consider each individual tract and will include public involvement. The preferred method of disposal or acquisition of lands by BLM will be through exchange (BLM 1990).
3. The BLM will coordinate and cooperate with owners of adjacent properties, interested individuals, organizations, and agencies when preparing plans to implement ORV designations (BLM 1990).

Conservation Measures Committed to by BLM

4. The FO biologists will conduct surveys (following established protocol), or assume species presence, for all likely affected Western boreal toad habitat, or potential habitat prior to authorizing surface disturbing activities. Proposed projects will be designed and locations selected to minimize disturbances to species and habitat and if the avoidance of adverse affects is not possible, the BLM will re-initiate consultation with the USFWS. Projects will not be authorized during critical time periods to reduce impacts to this species.
5. When project proposals are received, BLM will initiate coordination with the WGFD and USFWS at the earliest possible date so that these agencies can advise on project design. This should minimize the need to redesign projects at a later date to include Western boreal toad conservation measures, determined as appropriate by the WGFD and USFWS.
6. The BLM will continue to participate with development of the Southern Rocky Mountain population of the western boreal toad recovery plan in coordination with the WGFD, USFWS and other agencies. Populations and habitat on BLM-administered lands will be monitored to determine if recovery objectives are being met.

7. Roads that have the potential to impact the western boreal toad and are not required for routine operations and maintenance of developed and abandoned projects will be reclaimed as directed by the BLM. As necessary, these roads will be permanently blocked, re-contoured, reclaimed, and re-vegetated to benefit habitat for the western boreal toad.
8. Construction activities located within potential and/or known western boreal toad habitat will be minimized through construction site management by using previously disturbed areas, using existing ROWs, and designating limited equipment/materials storage yards and staging areas. Construction activities located within 500 ft of open water and/or 100 ft of intermittent or ephemeral channels in potential and/or known habitat for the Western boreal toad will be avoided. Stream crossings for roads and pipelines will be constructed during the period of lowest flow (i.e., late summer or fall) and perpendicular to flow. No surface water or shallow ground waters in connection with surface waters will be utilized for proposed projects. Proper erosion control techniques, such as water bars, netting, rip-rap, and mulch would be implemented.
9. Riparian habitats will be maintained, improved or restored to provide wildlife habitat, improve water quality and enhance forage conditions. When planting or seeding vegetation in areas identified as western boreal toad habitat, only native species will be selected.
10. Pesticide applications and biological control agents will be allowed within known western boreal toad habitat on a case-by-case basis. Where possible, biological control of pests would be used rather than chemical control. Where needed, pesticide use would be applied by hand within ¼-mile of habitat and only in cases where insect or weed outbreaks have the potential to degrade area ecological health. Outside the ¼-mile buffer, aerial application of pesticides would be carefully planned to prevent drift. The BLM shall work with the Animal and Plant Health Inspection Service (APHIS) and the USFWS to select a pesticide and method of application that will most effectively manage the infestation and least affect the species.
11. BLM-administered public lands that contain identified habitat for the western boreal toad will not be exchanged or sold, unless it benefits the species.
12. The FO policy for OHV restrictions to existing/designated roads and vehicle routes or closures, if required, will be implemented to protect western boreal toad populations and habitat.
13. BLM personnel and specialists working in habitat for the western boreal toad will use 10 percent bleach solution to clean wading boots or equipment, as appropriate to prevent the spread of chytrid fungus.
14. In the event that a western boreal toad is found, killed, or injured during project activities, or a dead individual is encountered, the USFWS Wyoming Field Office (307-772-2374) and the WGFD Laramie Regional Office (307-745-4046) will be notified as soon as possible after discovery.

Best Management Practices

15. Train and educate resource specialists, rangers, enforcement personnel, and fire crews on protection of the western boreal toad and its habitat, its status, and current threats to its existence.
16. Develop and prioritize management practices through a steering committee and assist WGFD and USFWS with research.
17. Establish monitoring, biological, ecological, and life history studies as funding and staffing allow, such as studies regarding monitoring the success of reintroduction efforts and occurrence of disease in new western boreal toad populations.
18. Monitor primary and secondary western boreal toad habitats for changes in water quality and the presence of chytrid fungus.

19. Linear crossings, such as pipelines, roads, or utility corridors, within potential or known habitat for the western boreal toad, should be considered on a case-by-case basis to eliminate potential barriers to water flow and toad movements. Intensive management should be implemented to protect habitat for the western boreal toad.
20. Timber harvest within known or potential western boreal toad habitat should be evaluated on a case-by-case basis to avoid detrimental impacts to the species that may result in a contribution to the need for federal listing.
21. Grazing practices within riparian areas associated with known or potential habitat for the western boreal toad should be managed at a minimum to meet proper functioning condition (PFC) requirements.
22. Surface-disturbing activities should be avoided in the following areas above 7,500 feet: (a) identified 100-year floodplains; (b) areas within 500 feet from perennial waters, springs, wells, and wetlands; and (c) areas within 100 feet from the inner gorge of ephemeral channels.

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