

**2003 WILDLIFE STUDIES,  
JONAH FIELD II  
NATURAL GAS DEVELOPMENT PROJECT**

Prepared for

**U.S. Bureau of Land Management  
Pinedale Field Office  
Pinedale, Wyoming**

and

**Jonah Field II Operators**

By

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**February 2004**

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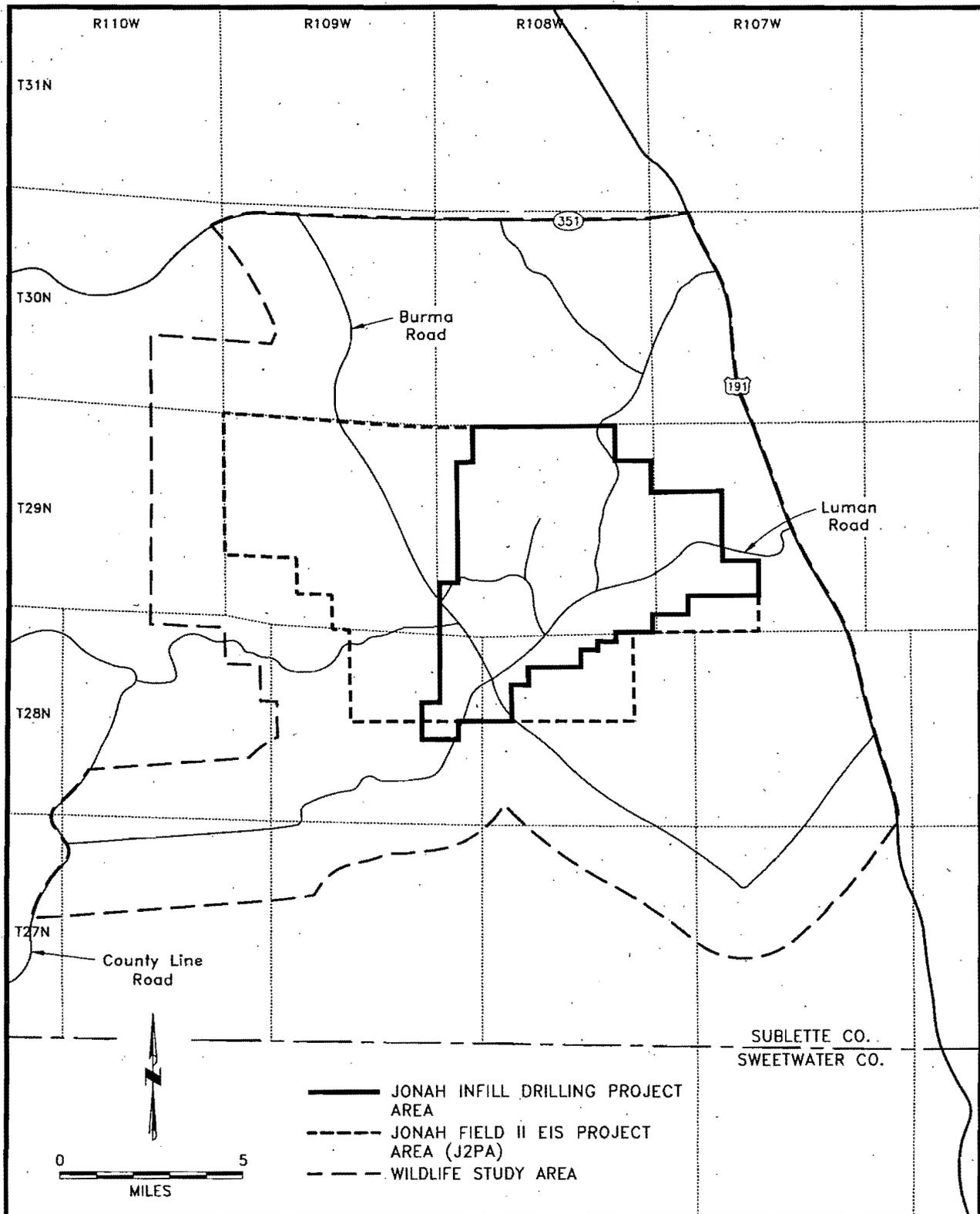


## 1.0 INTRODUCTION

This report was prepared by TRC Mariah Associates Inc. (TRC Mariah) for EnCana Oil & Gas Inc. (U.S.A.), BP America, and other natural gas operators (collectively referred to herein as the Operators), in compliance with the Bureau of Land Management (BLM) Record of Decision (ROD) for the Jonah Field II natural gas project (Appendix D in BLM [1998a]) and the Decision Record (DR) for the Modified Jonah Field II project (BLM 2000a). The goals of the ROD Wildlife Monitoring/Protection Plan (WMPP) and subsequent modifications made in the DR are to monitor wildlife population trends on and adjacent to the Jonah Field II project area (J2PA) and the Modified Jonah Field II project area (MJ2PA) during the course of project development and operations so that adequacy of extant mitigation measures can be evaluated and modifications to existing measures can be made and/or new measures applied, as appropriate, by the BLM. Thus, adverse impacts to wildlife present in project-affected areas can be avoided or minimized. Implementation of the plan, as presented in this report, provides land managers and project personnel opportunities to achieve and maintain wildlife productivity and populations in the project area by minimizing and/or avoiding potential adverse impacts associated with project development. Wildlife monitoring was initiated in 1997 and continued through 2003.

This report presents the methods and results of 2003 wildlife studies, as well as selected summary data from past monitoring studies conducted within the Jonah wildlife study area (WSA), which includes the original J2PA, the MJ2PA, and adjacent areas. Appendix A contains wildlife, wildlife habitat/vegetation, and project features/planning maps of the area. Raptor/Common Raven and General Wildlife Observation Data Sheets are contained in Appendix B. Appendix C is comprised of Raptor Nesting Records for monitored nests within the WSA; Appendix D provides Greater Sage-grouse Lek Records; and Appendix E provides Mountain Plover Survey Forms and results. Appendix F provides results of site-specific winter greater sage-grouse clearance surveys conducted by Wyoming Wildlife Consultants, LLC (WWC) and provided to TRC Mariah by BLM.

An environmental impact statement (EIS) currently is being written to address impacts of additional drilling within the MJ2PA plus an approximately 320-acre extension in the N½ of Section 23, T28N, R109W (i.e., the Jonah Infill Drilling Project Area [JIDPA]) (Map 1.1 and Appendix A). Wildlife data collected from 1997 through 2002 are presented in TRC Mariah (1999, 2001a, 2001b, 2002a). Observational data presented in this report were collected primarily by TRC Mariah, BLM, and Wyoming Game and Fish Department (WGFD) personnel and were supplemented by U.S. Fish and Wildlife Service (USFWS), University of Wyoming Cooperative Wildlife Unit (COOP), Operator, and WWC personnel. Trends across years are noted, where possible. Potential wildlife disturbance sources are identified, and monitoring and protection measures proposed for 2004 are presented. Monitoring and protection measures are consistent with those required in the original ROD (BLM 1998a) and the DR and environmental assessment (EA) for the Modified Jonah Field II project (BLM 2000a, 2000b). Additional BLM- and/or Operator-requested measures are also provided.



Map 1.1 Wildlife Study Area, Jonah Field II Project, 2003.



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## 2.0 METHODS

The wildlife species/categories for which specific inventory and monitoring procedures were applied were developed based on concerns identified during the preparation of the EIS for the Jonah Field II project (BLM 1997, 1998b) and the EA for the Modified Jonah Field II Project (BLM 2000b). Specific inventory and monitoring techniques generally follow the methods presented in the WMPP for this project (Appendix D in BLM [1998a]) and additional methods identified by BLM (2000b). Several additional investigations (i.e., Sand Draw reconnaissance, vegetation/habitat map refinement) were implemented to support the pending Jonah Infill Drilling Project EIS.

### 2.1 RAPTORS

Raptor nest surveys of the WSA were conducted from 1997 through 2003 by helicopter (1997 and 1998) or on the ground (1999 through 2003) to determine the location and activity status of raptor nests in the area (TRC Mariah 1999, 2001a, 2001b, 2002a). All raptor activity and productivity surveys were conducted using procedures that minimize potential adverse effects to nesting raptors as identified in the ROD (Appendix D in BLM [1998a]), including the following measures (Call 1978; Grier and Fyfe 1987).

- Nest visits were conducted as late in the season as possible to collect necessary data without undue disturbance to pairs establishing territories/nests.
- Nests were approached with caution, and the status (i.e., activity, number of nestlings/fledglings) was determined from a distance with binoculars and/or spotting scope.
- Nests were approached, if necessary, tangentially and in an obvious manner so as to avoid startling adults or fledglings.
- Nests were not approached during adverse weather conditions (i.e., extremely hot or cold weather, high winds, precipitation events).
- Visits were kept as brief as possible to avoid or minimize disturbance to nesting birds.

- Inventories were coordinated with biologists in the BLM Pinedale Field Office (PFO).
- The number of visits to each nest was kept to a minimum to avoid repeated disturbance to nesting birds.
- All raptor nest locations will be provided to the BLM PFO and kept confidential. The data are available only to interested parties as deemed appropriate by the BLM.

Raptor nest activity status surveys were conducted on April 7-8 and May 10-14 and 27-28, 2003, by Diane Thomas, Randall Blake, and Chris Keefe of TRC Mariah on the ground using four-wheel-drive vehicles and pedestrian reconnaissance. Burrowing owl nest activity surveys were conducted in conjunction with mountain plover nesting surveys, as well as during raptor activity surveys. All known raptor nests within the WSA were visited at least once during these surveys to determine whether they were being used and, if so, by what species. All nest sites located within 1.0 mi of existing or proposed development areas (see Appendix A, Wildlife Map) and determined occupied in 2003, as well as any other occupied nests for which productivity data were easily obtained in the course of other scheduled monitoring, were revisited to determine productivity. Additional monthly monitoring of some nests within the overlap of the Jonah Field II and Anticline WSAs was conducted by Diane Thomas and Randall Blake, and those data are included herein. In the case of nest failure or abandonment, an attempt was made to identify the causative factor(s). Raptor productivity surveys were conducted by Diane Thomas (June 3, 5, and 29-30), Randall Blake (June 10-12), Chris Keefe (June 11), and Pete Guernsey (July 30), all with TRC Mariah. Productivity surveys were conducted via four-wheel-drive vehicle or on foot, with the exception of several nests checked from the air on June 5 in conjunction with helicopter nest surveys of the Anticline WSA.

An additional effort was made during 2003 raptor surveys to locate and record ferruginous hawk nests in areas that appeared most likely to have previously unrecorded nests, particularly in the southwestern and western portions of the WSA. Photos were taken of all newly recorded nests, as well as any other nest(s) for which photos were not available. In addition, some nests for

which photos were available were rephotographed to provide better documentation of the nest and its location. Global positioning system (GPS) locations were recorded for newly located nests, as well as nests within the WSA for which GPS locations were previously unavailable or unreliable. In prior Jonah wildlife annual reports, GPS data for nests within the WSA were presented using a Conus 1927 datum. However, all GPS data in this report have been transformed to a GCS North American 1983 datum to ensure consistency with BLM and other government agency databases. Thus, UTM's in this report differ from those provided in previous reports; although they represent the same location. All data collected during raptor activity and productivity surveys were recorded on maps, Raptor Observation Data Sheets, and/or Raptor Nesting Records (see Appendix A [Wildlife Map], Appendix B, and Appendix C).

Documentation of known raven nests was initiated in 2001 because common ravens often use nests previously used by raptors and vice versa. Raven nests were recorded on the same data forms as raptor nests (see Appendices B and C); however, only previously recorded raven nests or nests newly observed during the course of scheduled surveys were monitored. No effort was made to document all raven nests in the WSA.

Nesting territory boundaries are difficult to determine, particularly if nesting activity in an area is inconsistent or if the number of years of available nesting data is limited. In past years, the boundary of each ferruginous hawk nesting territory in the WSA was approximated based on the location of known nests in the area and topographic and geographic characteristics of the area. Several ferruginous hawk territory boundaries were amended in 2003 based on the location of newly recorded nests and associated topographic characteristics, and four new territories (i.e., Territories 13-16) were defined (see Appendix A, Wildlife Map). These territory boundaries, while helpful from a management point of view (i.e., to determine current and historical occupancy of an area and to assist in locating potential sites for artificial nest structures [ANSs]), may not reflect the actual ferruginous hawk nesting territories within the Jonah WSA because nesting territories may change from year to year depending on population fluctuations, prey availability, and other ecological factors. No attempts were made to determine the general foraging territories of nesting pairs.

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## 2.2 GREATER SAGE-GROUSE

Monitoring of greater sage-grouse leks was conducted in 2003 to determine the extent of grouse breeding activities within the WSA and to record any newly discovered leks. The locations of known leks are provided on the Wildlife Map in Appendix A. Data on lek attendance and location, survey dates, weather conditions, and other notes are provided on Greater Sage-Grouse Lek Records (see Appendix D). In early spring, WGFD, BLM, and COOP personnel compiled a schedule identifying the agencies and specific individuals who would be responsible for monitoring identified leks. A review of the schedule by TRC Mariah personnel in early April revealed that several known leks within the WSA were not slated for monitoring. At the request of Operators, TRC Mariah initiated limited monitoring of the leks not slated for monitoring so that gaps in coverage would not occur (see Appendix D). However, Lek 19 (slated for monitoring by BLM) and Lek 24 (a satellite of a lek monitored by BLM) ultimately were not monitored. Both of the leks are located >2.0 mi from the JIDPA; however, portions of the 2-mi buffer around Lek 24 are within the WSA, and all of Lek 19 and its associated buffer are within the J2PA.

Greater sage-grouse winter use surveys of the J2PA and surrounding areas have been recommended in previous annual reports (TRC Mariah 1999, 2001a, 2001b, 2002a); however, the surveys conducted to date have been limited to site-specific clearance of areas planned for winter disturbance (personal communication, January 8, 2004, with Keith Andrews, Wildlife Biologist, BLM, PFO). Results of these surveys are available for review at the BLM PFO and are summarized in Section 3.2.1 and Appendix F.

## 2.3 THREATENED, ENDANGERED, PROPOSED, CANDIDATE, AND OTHER BLM WYOMING SPECIES OF CONCERN

Inventory and monitoring of threatened, endangered, proposed, candidate, and other BLM Wyoming species of concern (TEPC&WSC) were conducted in conjunction with the abovementioned surveys for raptors and greater sage-grouse and during prairie dog town mapping and mountain plover nesting surveys. Federally listed or proposed species are

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described below, and the most current list (September 2002) of BLM Wyoming species of concern for the WSA is provided in Table 2.1. Additional species-specific surveys were implemented by the BLM in conjunction with on-site investigations conducted as components of Application for Permit to Drill (APD) and/or right-of-way (ROW) application processes, as deemed necessary by the BLM and in compliance with the biological assessment for the project (Appendix E in BLM [1997]). Data collection methods and results/clearances for TEPC&WSC species associated with APD and ROW application reviews are not included in this report but are available from the BLM PFO in Pinedale, Wyoming.

### **2.3.1 Black-footed Ferret**

Larry DeBrey and Chris Keefe of TRC Mariah remapped and censused prairie dog towns (PDTs) 22 and 23A (see Appendix A, Wildlife Map) during September 2003 to determine overall burrow density, to define areas of high burrow density within the towns, to more accurately define the current size and location of the towns, and to determine whether the towns meet the black-footed ferret habitat criteria of  $\geq 8.0$  burrows per acre established in the USFWS (1989) guidelines. Open burrows deep enough that the below-ground end was not visible and with a diameter  $\geq 7$  cm were censused and their location recorded with a GPS. Burrows were physically marked (i.e., with a footprint or scuff mark) to avoid duplicate counting. The edge of the town was determined in the field to be the point at which no burrows were observed within approximately 0.25 mi of an outlying burrow. Town boundaries were further refined in the office using geographic information system (GIS) data such that burrows along the edge of a town were within at least 660 ft of other burrow(s). High-density areas were defined in the office by review of GIS data on locations of individual burrows.

### **2.3.2 Bald Eagle, Ferruginous Hawk, and Golden Eagle**

Inventory and monitoring protocols for bald eagle, ferruginous hawk, and golden eagle were implemented as described in Section 2.1.

Table 2.1 BLM Wyoming Animal Species of Concern Documented or Potentially Occurring on or in the Vicinity of the Jonah Field II Wildlife Study Area, 2003.<sup>1</sup>

| Species  |                                  | Other Designation and Ranking <sup>2</sup>                                  | Documented on or in Vicinity of the JIDPA? <sup>3</sup> | Habitat Type(s) <sup>4</sup> |
|--|----------------------------------|---|---|------------------------------|
| Common Name                                      | Scientific Name                  |   |   |                              |
| Long-eared myotis                                | <i>Myotis evotis</i>             | G5/S1B, S1?N, NSS2  | Yes   | FT                           |
| Whitetail prairie dog                            | <i>Cynomys leucurus</i>          | G4/S2S3, NSS3 (Petitioned 7/11/2002)  | Yes <sup>5,6</sup>                                      | UB                           |
| Idaho pocket gopher                              | <i>Thomomys idahoensis</i>       | G4/S2?, NSS3, IUCN-LR (nt)  | Yes <sup>5</sup>  | BS, P/R                      |
| Pygmy rabbit                                     | <i>Brachylagus idahoensis</i>    | G4/S2, NSS3, IUCN-LR (nt)   | Yes <sup>6,7</sup>                                      | BS, P/R                      |
| White-faced ibis                                 | <i>Plegadis chihi</i>            | G5/S1B, SZN, FSR2, NSS3   | Yes <sup>5</sup>  | FT, P/R                      |
| Trumpeter swan                                   | <i>Cygnus buccinator</i>         | G4/S1B, S2N, FSR2, FSR4, NSS2   | Yes   | FT                           |
| Northern goshawk                                 | <i>Accipiter gentilis</i>        | G5/S23B, S4N, FSR2, FSR4, NSS4  | Yes <sup>5</sup>  | FT                           |
| Ferruginous hawk                                 | <i>Buteo regalis</i>             | G4/S3B, S3N, FSR2, NSS3   | Yes <sup>5,6</sup>                                      | UB                           |
| Peregrine falcon                                 | <i>Falco peregrinus</i>          | G4/T3/S1B, S2N, FSR2, NSS3 (Removed from federal endangered list 8/25/1999) | Yes <sup>5</sup>  | FT                           |
| Greater sage-grouse                              | <i>Centrocercus urophasianus</i> | G5/S3 (Petitioned 6/8/2002)   | Yes <sup>5,6</sup>                                      | UB                           |
| Long-billed curlew                               | <i>Numenius americanus</i>       | G5/S3B, SZN, FSR2, NSS3   | Yes <sup>5</sup>  | P/R, FT                      |
| Mountain plover                                  | <i>Charadrius montanus</i>       | G2/S2B, SZN (Proposed listing withdrawn 9/2003)                             | Yes <sup>5,6</sup>                                      | CP                           |
| Yellow-billed cuckoo                             | <i>Coccyzus americanus</i>       | G5/S2B, SZN, FSR2, NSS2, (Petitioned 7/25/2001)                             | No  | FT                           |
| Burrowing owl                                    | <i>Athene cunicularia</i>        | G4/S3B, SZN, FSR2, NSS4   | Yes <sup>5,6</sup>                                      | BS, SB, CP                   |
| Sage thrasher                                    | <i>Oreoscoptes montanus</i>      | G5/S3B, SZN, PIF Priority   | Yes <sup>5,6</sup>                                      | UB                           |
| Loggerhead shrike                                | <i>Lanius ludovicianus</i>       | G5/S4B, SZN, FSR2   | Yes <sup>5,6</sup>                                      | UB                           |
| Brewer's sparrow                                 | <i>Spizella breweri</i>          | G5/S3B, SZN, PIF Priority   | Yes <sup>5,6</sup>                                      | UB                           |
| Sage sparrow                                     | <i>Amphispiza billineata</i>     | G5/S3B, SZN, PIF Priority   | Yes <sup>5,6</sup>                                      | UB                           |
| Northern leopard frog                            | <i>Rana pipiens</i>              | G5/S3, FSR2, NSS4   | Yes   | P/R                          |
| Boreal toad (northern Rocky Mountain population) | <i>Bufo boreas boreas</i>        | G4T4/S2, FSR2, FSR4, NSS2   | Yes   | P/R                          |
| Spotted frog                                     | <i>Rana pretiosa</i>             | G4/S2S3, FSR2, FSR4, NSS4   | Yes   | P/R                          |

<sup>1</sup> From Wyoming BLM State Director's Sensitive Species List (Animals and Plants), September 20, 2002.

<sup>2</sup> Rankings:

**Wyoming Natural Heritage Program**

Uses a standardized system developed by The Nature Conservancy's Natural Heritage Network to assess the global and state-wide conservation status of each plant and animal species, subspecies, and variety. Each taxon is ranked on a scale of 1-5, from highest conservation concern to lowest. Codes are as follows:

G = Global rank: rank refers to the range wide status of a species.

T = Trinomial rank: rank refers to the range wide status of a subspecies or variety.

Table 2.1 (Continued)

- S = State rank: rank refers to the status of the taxon (species or subspecies) in Wyoming. State ranks differ from state to state.
- ZN = Taxa that are not of significant concern in Wyoming during non-breeding seasons.
- 1 = Critically imperiled because of extreme rarity (often known from five or fewer extant occurrences or very few remaining individuals) or because some factor of a species' life history makes it vulnerable to extinction.
- 2 = Imperiled because of rarity (often known from 6-20 occurrences) or because of factors demonstrably making a species vulnerable to extinction.
- 3 = Rare, or local, throughout its range or found locally in a restricted range (usually from 21-100 occurrences).
- 4 = Apparently secure, although the species may be quite rare in parts of its range, especially at the periphery.
- 5 = Demonstrably secure, although the species may be rare in parts of its range, especially at the periphery.
- B = Breeding rank: a state-rank modifier indicating the status of a migratory species during the breeding season (used mostly for migratory birds and bats).
- N = Nonbreeding rank: a state-rank modifier indicating the status of a migratory species during the nonbreeding season (used mostly for migratory birds and bats) ZN or ZB. Taxa that are not of significant concern in Wyoming during breeding (ZB) or non-breeding (ZN) seasons. Such taxa often are not encountered in the same locations from year to year.
- ? = Questions exist regarding the assigned G, T, or S rank of a taxon.

**U.S. Forest Service**

- FSR2 = Region 2, Rocky Mountain Region.
- FSR4 = Region 4, Intermountain Region.

**Wyoming Game and Fish Department**

The Wyoming Game and Fish Department has developed a matrix of habitat and population variables to determine the conservation priority of all native, breeding bird and mammal species in the state. Six classes of native status species (NSS) are recognized, of which classes 1, 2, and 3 are considered to be high priorities for conservation attention.

These classes can be defined as follows:

- NSS1 = Includes species with on-going significant loss of habitat and with populations that are greatly restricted or declining (extirpation appears possible).
- NSS2 = Species in which (1) habitat is restricted or vulnerable (but no recent or significant loss has occurred) and populations are greatly restricted or declining; or (2) species with on-going significant loss of habitat and populations that are declining or restricted in numbers and distribution (but extirpation is not imminent).
- NSS3 = Species in which (1) habitat is not restricted, but populations are greatly restricted or declining (extirpation appears possible); or (2) habitat is restricted or vulnerable (but no recent or significant loss has occurred) and populations are declining or restricted in numbers or distribution (but extirpation is not imminent); or (3) significant habitat loss is on-going but the species is widely distributed and population trends are thought to be stable.
- NSS4 = *EITHER* Populations are either declining or restricted in number or distribution. Extirpation is not imminent. Habitat is not restricted but is vulnerable; however, no known significant loss has occurred. Species is not sensitive to human disturbance. *OR* Species is widely distributed. Population status and trends are unknown but suspected to be stable. Habitat is restricted or vulnerable, but no recent or ongoing significant loss has occurred. Species may be sensitive to human disturbance.

**IUCN - International Union for Conservation of Nature Rodent Specialist Group, North American Red List**

LR = Lower Risk. A taxon is Lower Risk when it has been evaluated, does not satisfy the criteria for any of the categories Critically Endangered, Endangered, or Vulnerable. Taxa included in the Lower Risk category can be separated into three subcategories:

- nt = Near Threatened. Taxa which do not qualify for Conservation Dependent, but which are close to qualifying for Vulnerable.

**Partners in Flight (PIF)**

A coalition of federal, state, and provincial agencies, private groups, corporations, and individuals dedicated to neotropical migratory bird conservation.

- <sup>3</sup> Indicates documentation of amphibian, reptile, or bird species in Sublette County (Baxter and Stone 1980; Fertig 1997; WGFD 1999); documentation of bird species within latitude 42°, longitude 109° (Dorn and Dorn 1999; WGFD 1996, 1999); and/or documentation of mammal species within latitude 42°, longitude 109° (WGFD 1996, 1999) or within Sublette County (Fertig 1997).
- <sup>4</sup> BS = big sagebrush, CP = cushion plant, FT = fly through, P/R = pond/riparian, SB = saltbush, UB = ubiquitous.
- <sup>5</sup> Species has been documented breeding within latitude 42°, longitude 109° (Dorn and Dorn 1999; WGFD 1999).
- <sup>6</sup> Species or its sign documented during wildlife monitoring of the JIDPA (TRC Mariah [1999, 2001a, 2001b, 2002a, 2002b, 2003] and Appendix B of this document).
- <sup>7</sup> Species occurred historically within latitude 42°, longitude 109° (WGFD 1999).

### **2.3.3 Mountain Plover**

All suitable mountain plover breeding habitat (i.e., active prairie dog colonies and/or relatively flat areas with low-growing vegetation less than 4-6 inches in height indicative of cushion plant and Gardner's saltbush communities) within the JIDPA and a 0.5-mi buffer was surveyed three times during 2003 to determine the presence or absence of breeding mountain plover.

Surveys were conducted in accordance with 2002 USFWS guidelines (USFWS 2002), as follows.

- Surveys were conducted during early courtship and territory establishment.
- Surveys were conducted from sunrise to 10:00 a.m. and/or from 5:30 p.m. to sunset
- Surveys were conducted from four-wheel-drive vehicles or, where access was problematic and/or no visual observations were made from vehicles, all-terrain vehicles were used.
- Surveyors remained in or close to vehicles when scanning with binoculars.
- Suitable habitat was surveyed three times during the survey window (May 1- June 15), with each survey separated by at least 14 days.
- Surveys were not conducted in inclement weather (e.g., poor visibility).
- Surveys focused on locating displaying or calling males.
- GPS locations of nests (post-nesting) and individuals, if present, were taken; and activity, number of individuals, and other pertinent data were recorded.

All data collected during surveys, including location, surveyor, weather conditions, habitat characteristics, and results, were recorded on Mountain Plover Survey Forms (see Appendix E).

Additional surveys within 0.25 mi of proposed well locations or 300 ft of proposed roads may have been conducted by the BLM prior to disturbance in association with APD and ROW application field reviews. Data from those investigations, if conducted, are available for review at the BLM PFO in Pinedale, Wyoming.

#### **2.3.4 Western Burrowing Owl**

Prairie dog colonies and other suitable burrowing owl nesting habitat on the JIDPA were searched during late spring and summer 2003 by TRC Mariah personnel in association with mountain plover nesting surveys and raptor nesting activity and productivity monitoring to determine the extent of burrowing owl nesting. Additional monitoring of some burrowing owl nests within the overlap of the Jonah and Anticline WSAs was conducted by Diane Thomas, Randall Blake, and Chris Keefe of TRC Mariah. The number and location of active nests in the area were identified, and efforts were made to determine fledgling success for active nests.

#### **2.3.5 Other TEPC&WSC Species**

Formal surveys for TEPC&WSC were not conducted during 2003. However, site-specific investigations were implemented by the BLM in areas of potential habitat within 0.5 mi of proposed disturbance during on-site reviews conducted in conjunction with APD and ROW application review processes. This information is available for review at the BLM PFO. In addition, a pedestrian reconnaissance of Sand Draw and portions of Granite Wash was conducted to determine the potential presence of pygmy rabbits (see Section 2.4).

### **2.4 HABITAT MAP REFINEMENT AND SAND DRAW INVESTIGATION**

TRC Mariah biologists mapped habitat types within the MJ2PA (i.e., the JIDPA minus an approximately 320-acre parcel in the N½ of Section 23, T28N, R109W) in August 2000 to facilitate an analysis of greater sage-grouse habitat quality and quantity. Four habitat types were identified based on an ocular interpretation of relative sagebrush cover and density: 1) dense sagebrush, 2) moderately dense sagebrush, 3) basin sagebrush, and 4) scattered/no sagebrush (TRC Mariah 2001a). The boundaries of the mapped units within the MJ2PA were confirmed and/or refined in September 2003 using a combination of GPS and hand-mapping of type boundaries. In conjunction with this effort, the entire length of Sand Draw across the JIDPA and the portion of Granite Wash in the vicinity Wild Horse Reservoir were investigated

(pedestrian reconnaissance) by Mr. Pete Guernsey of TRC Mariah to support annual wildlife studies and an EIS currently being implemented in the area. The investigation focused on determining the approximate width of basin big sagebrush habitat occurring along the channels; identifying drainage channel characteristics; determining the potential presence of pygmy rabbits; and documenting the presence of all wildlife species encountered, including the presence of greater sage-grouse winter use areas. Drainage channel habitat characteristics were entered into a GIS database (see Appendix A, Wildlife Habitat/Vegetation Map), and all wildlife observations were recorded on General Wildlife Observation Data Sheets (see Appendix B).

## **2.5 GENERAL WILDLIFE**

Observations of general wildlife were recorded during species-specific investigations, vegetation mapping of the JIDPA, the pedestrian reconnaissance of Granite Wash and Sand Draw (see Section 2.4), and other in-field activities associated with the Jonah and Anticline wildlife monitoring studies and the preparation of the Jonah Infill EIS. Results are presented in Appendix B (General Wildlife Observation Data Sheets). Additional observations were made by BLM personnel during on-site investigations conducted during APD and ROW application review processes, and this information may be reviewed at the BLM PFO. No formal surveys for pronghorn antelope or other species/wildlife categories were conducted during 2003.

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### 3.0 RESULTS AND PROPOSED MONITORING/PROTECTION MEASURES

With the submission of the 2002 annual wildlife monitoring report, the Operators completed 5 years of wildlife monitoring in compliance with the BLM ROD for the Jonah Field II natural gas project (Appendix D in BLM [1998a]) and the DR for the Modified Jonah Field II project (BLM 2000a). However, because operations continue in the JIDPA, the Operators voluntarily committed to a continuation of annual wildlife monitoring in 2003, with an annual report to be provided to the Pinedale BLM field office in early 2004. The Operators also agreed to continue wildlife monitoring in 2004, with an annual report provided to the Pinedale BLM field office in January of 2005. This chapter presents the results of 2003 wildlife investigations on the WSA and identifies the proposed monitoring/protection measures that would be implemented by the BLM, WGFD, and/or an Operator-financed BLM-approved wildlife biologist in 2004.

The proposed wildlife protection measures were developed specifically for potentially impacted wildlife resources on and adjacent to the JIDPA and J2PA. The principal protection measure proposed for most wildlife species is avoidance of sensitive/crucial habitats (e.g., raptor nests, greater sage-grouse leks), where practical. However, numerous other species-specific measures have been identified.

In past wildlife monitoring reports, proposed facilities within no surface occupancy, seasonal restriction, and other protective buffers and sensitive areas in the JIDPA were identified so that the facilities could be relocated to avoid impacts to wildlife and wildlife habitat. However, all wells authorized under existing *National Environmental Protection Act* (NEPA) documents have been developed, and future development is pending the results of the Jonah Infill Drilling Project EIS currently in progress. Thus, only existing wells, roads, and project facilities as obtained from best available data (i.e., from the Operators, the Wyoming Oil and Gas Conservation Commission database, and a BLM-provided May 2003 digital orthophoto) are shown within the JIDPA on the Project Features/Planning Map in Appendix A. Once the EIS process has been completed, Operators may utilize the Project Features/Planning Map to site and

schedule potential future project-related construction and drilling so as to minimize impacts to wildlife and meet mitigation/avoidance requirements.

### **3.1 RAPTORS**

#### **3.1.1 Results**

Table 3.1 provides information on the location, recent history, and activity status of known raptor/raven nests on the WSA. For the purposes of development planning, an active nest is defined as one that has been used by raptors (not ravens) in at least one of the past 3 years. An "unknown" activity status is assigned to nests for which a complete history of use over the past 3 years is not available (i.e., the nest was not checked or not located in one or more of the past 3 years or the nest was newly recorded). Any nest newly recorded within the last 2 years has an unknown activity status because nest history for the past 3 years is incomplete.

Information on productivity, nearby project features, and proposed protection measures at active and unknown activity status nest sites within project-affected areas is presented in Table 3.2. Nest sites with unknown activity status are included in Table 3.2 because not enough information is available for these sites to confirm an inactive status (i.e., no seasonal or surface occupancy stipulations required).

Thirty-two raptor/raven nests were newly recorded in 2003: two American kestrel nests (AK146 and 147); two burrowing owl nests (BO159 and 166); eight common raven nests (CR144, 145, 151, 155, 162, 169, 172, and 173); 17 ferruginous hawk nests (FH148, 152-154, 156-157, 161, 164-165, 167-168, 170-171, and 174-177); one osprey nest (OS158); one prairie falcon nest (PF163); and one red-tailed hawk nest (RT160) (see Table 3.1).

Forty-three previously recorded nests have been delisted as of the end of the season in 2003. Ten of the 43 were unknown raptor nests obtained from BLM overlays that have never been located; three were duplicate codes for currently monitored nests; one (FH175) was a newly

Table 3.1 Raptor Nest Locations and Activity Status, Jonah Field II Wildlife Study Area, 2003.

| Nest No. <sup>2,3</sup> | Activity Status <sup>4</sup> | Activity by Year <sup>1,2</sup> |                |      | Most Recent Activity | Legal Location | UTM Coordinates <sup>5</sup> |
|-------------------------|------------------------------|---------------------------------|----------------|------|----------------------|----------------|------------------------------|
|                         |                              | 2003                            | 2002           | 2001 |                      |                |                              |
| AK16                    | A <sup>6</sup>               | A                               | a <sup>6</sup> | I    | 2003                 | [REDACTED]     | [REDACTED]                   |
| AK17                    | A <sup>6</sup>               | I                               | a <sup>6</sup> | I    | 2002                 | [REDACTED]     | [REDACTED]                   |
| AK18                    | A                            | A                               | a              | I    | 2003                 | [REDACTED]     | [REDACTED]                   |
| AK30                    | A                            | a                               | I              | I    | 2003                 | [REDACTED]     | [REDACTED]                   |
| AK39                    | A                            | I                               | a              | I    | 2002                 | [REDACTED]     | [REDACTED]                   |
| AK50 <sup>7,8</sup>     | A                            | A                               | I              | A    | 2003                 | [REDACTED]     | [REDACTED]                   |
| AK52                    | A                            | I                               | a              | I    | 2002                 | [REDACTED]     | [REDACTED]                   |
| AK80                    | I                            | I                               | I              | I    | Pre-1999             | [REDACTED]     | [REDACTED]                   |
| AK88                    | A                            | A                               | a              | a    | 2003                 | [REDACTED]     | [REDACTED]                   |
| AK92                    | A                            | a                               | I              | U    | 2003                 | [REDACTED]     | [REDACTED]                   |
| AK97                    | A                            | A                               | I              | I    | 2003                 | [REDACTED]     | [REDACTED]                   |
| AK142                   | A <sup>6</sup>               | I                               | a <sup>6</sup> | NR   | 2002                 | [REDACTED]     | [REDACTED]                   |
| AK143                   | A <sup>6</sup>               | I                               | a <sup>6</sup> | NR   | 2002                 | [REDACTED]     | [REDACTED]                   |
| AK146                   | U                            | I                               | NR             | NR   | Pre-2003             | [REDACTED]     | [REDACTED]                   |
| AK147                   | U                            | I                               | NR             | NR   | Pre-2003             | [REDACTED]     | [REDACTED]                   |
| BO19                    | I                            | I                               | I              | I    | 1997 <sup>9</sup>    | [REDACTED]     | [REDACTED]                   |
| BO76                    | I                            | I                               | I              | I    | 1998 <sup>9</sup>    | [REDACTED]     | [REDACTED]                   |
| BO77                    | I                            | I                               | I              | I    | 2000                 | [REDACTED]     | [REDACTED]                   |
| BO86                    | A                            | I                               | A              | A    | 2002                 | [REDACTED]     | [REDACTED]                   |
| BO117                   | A                            | I                               | I              | A    | 2001                 | [REDACTED]     | [REDACTED]                   |
| BO124                   | A                            | I                               | I              | a    | 2001                 | [REDACTED]     | [REDACTED]                   |

Table 3.1 (Continued)

| Nest No. <sup>2,3</sup> | Activity Status <sup>4</sup> | Activity by Year <sup>1,2</sup> |      |      | Most Recent Activity | Legal Location | UTM Coordinates <sup>5</sup> |
|-------------------------|------------------------------|---------------------------------|------|------|----------------------|----------------|------------------------------|
|                         |                              | 2003                            | 2002 | 2001 |                      |                |                              |
| BO136                   | A                            | I                               | a    | NR   | 2002                 | [REDACTED]     | [REDACTED]                   |
| BO140                   | A                            | I                               | a    | NR   | 2002                 | [REDACTED]     | [REDACTED]                   |
| BO159                   | A                            | A                               | NR   | NR   | 2003                 | [REDACTED]     | [REDACTED]                   |
| BO166                   | A                            | a <sup>10</sup>                 | NR   | NR   | U                    | [REDACTED]     | [REDACTED]                   |
| CR105                   | A-R                          | A-R                             | I    | A-R  | 2003                 | [REDACTED]     | [REDACTED]                   |
| CR106                   | A-R                          | A-R                             | I    | A-R  | 2003                 | [REDACTED]     | [REDACTED]                   |
| CR107                   | A-R                          | U                               | NC   | A-R  | 2001 <sup>9</sup>    | [REDACTED]     | [REDACTED]                   |
| CR108<br>(2 nests)      | A-R                          | A-R                             | A-R  | A-R  | 2003                 | [REDACTED]     | [REDACTED]                   |
| CR116                   | A-R                          | A-R                             | I    | A-R  | 2003                 | [REDACTED]     | [REDACTED]                   |
| CR125                   | A-R                          | I                               | A-R  | I    | 2002                 | [REDACTED]     | [REDACTED]                   |
| CR131                   | A-R                          | I                               | A-R  | NR   | 2002                 | [REDACTED]     | [REDACTED]                   |
| CR144                   | U                            | I                               | NR   | NR   | Pre-2003             | [REDACTED]     | [REDACTED]                   |
| CR145                   | A-R                          | A-R                             | NR   | NR   | 2003                 | [REDACTED]     | [REDACTED]                   |
| CR151                   | A-R                          | A-R                             | NR   | NR   | 2003                 | [REDACTED]     | [REDACTED]                   |
| CR155                   | A-R                          | A-R                             | NR   | NR   | 2003                 | [REDACTED]     | [REDACTED]                   |
| CR162                   | A-R                          | A-R                             | NR   | NR   | 2003                 | [REDACTED]     | [REDACTED]                   |
| CR169                   | U                            | U <sup>10</sup>                 | NR   | NR   | U                    | [REDACTED]     | [REDACTED]                   |
| CR172                   | U                            | U <sup>10</sup>                 | NR   | NR   | U                    | [REDACTED]     | [REDACTED]                   |
| CR173                   | U                            | U <sup>10</sup>                 | NR   | NR   | U                    | [REDACTED]     | [REDACTED]                   |
| FH1<br>(2 nests)        | I                            | I                               | I    | I    | Pre-1998             | [REDACTED]     | [REDACTED]                   |
| FH2<br>(2 nests)        | I                            | I                               | I    | I    | Pre-1998             | [REDACTED]     | [REDACTED]                   |

Table 3.1 (Continued)

| Nest No. <sup>2,3</sup> | Activity Status <sup>4</sup> | Activity by Year <sup>1,2</sup> |                |           | Most Recent Activity | Legal Location | UTM Coordinates <sup>5</sup> |
|-------------------------|------------------------------|---------------------------------|----------------|-----------|----------------------|----------------|------------------------------|
|                         |                              | 2003                            | 2002           | 2001      |                      |                |                              |
| FH4                     | I                            | I                               | I              | I         | 2000                 |                |                              |
| FH5                     | I                            | I                               | I              | I         | Pre-1996             |                |                              |
| FH8                     | I                            | I                               | I              | I         | 1996                 |                |                              |
| FH9                     | I                            | I                               | I              | I         | Pre-1998             |                |                              |
| FH10                    | I                            | I                               | I              | I         | Pre-1998             |                |                              |
| FH11                    | I                            | I                               | I              | I         | Pre-1996             |                |                              |
| FH12<br>(2 nests)       | I                            | I                               | I              | I         | Pre-1997             |                |                              |
| FH14                    | A                            | A                               | A              | I         | 2003                 |                |                              |
| FH21                    | I                            | I                               | I              | I         | Pre-1997             |                |                              |
| FH25                    | I                            | I                               | I              | I         | Pre-1998             |                |                              |
| FH26                    | I                            | I                               | I              | I         | 2000                 |                |                              |
| FH28                    | U                            | I                               | U              | I         | U                    |                |                              |
| FH37<br>(2 nests)       | A <sup>6</sup>               | I                               | a <sup>6</sup> | A<br>(RT) | 2002                 |                |                              |
| FH38                    | A <sup>6</sup>               | I                               | a <sup>6</sup> | I         | 2002                 |                |                              |
| FH42                    | I                            | I                               | I              | I         | Pre-1998             |                |                              |
| FH43<br>(2 nests)       | I                            | I                               | I              | I         | Pre-1998             |                |                              |
| FH53                    | I                            | I                               | I              | I         | 1998                 |                |                              |
| FH54<br>(2 nests)       | I                            | I                               | I              | I         | Pre-1998             |                |                              |
| FH55                    | I                            | I                               | I              | I         | Pre-1998             |                |                              |
| FH56                    | I                            | I                               | I              | I         | Pre-1997             |                |                              |
| FH57<br>(2 nests)       | I                            | I                               | I              | I         | Pre-1997             |                |                              |

Table 3.1 (Continued)

| Nest No. <sup>2,3</sup> | Activity Status <sup>4</sup> | Activity by Year <sup>1,2</sup> |           |      | Most Recent Activity | Legal Location | UTM Coordinates <sup>5</sup> |
|-------------------------|------------------------------|---------------------------------|-----------|------|----------------------|----------------|------------------------------|
|                         |                              | 2003                            | 2002      | 2001 |                      |                |                              |
| FH59<br>(3 nests)       | I                            | I                               | I         | I    | Pre-1997             | [REDACTED]     | [REDACTED]                   |
| FH60                    | I                            | I                               | I         | I    | Pre-1997             | [REDACTED]     | [REDACTED]                   |
| FH62                    | I                            | I                               | I         | I    | Pre-1997             | [REDACTED]     | [REDACTED]                   |
| FH67                    | I                            | I                               | I         | I    | Pre-1998             | [REDACTED]     | [REDACTED]                   |
| FH68                    | I                            | I                               | I         | I    | Pre-1997             | [REDACTED]     | [REDACTED]                   |
| FH69                    | I                            | I                               | I         | I    | 2000                 | [REDACTED]     | [REDACTED]                   |
| FH71                    | I                            | I                               | I         | I    | 1997                 | [REDACTED]     | [REDACTED]                   |
| FH73                    | I                            | I                               | I         | I    | Pre-1996             | [REDACTED]     | [REDACTED]                   |
| FH78                    | I                            | I                               | I         | I    | Pre-1999             | [REDACTED]     | [REDACTED]                   |
| FH82                    | I                            | I                               | I         | I    | U                    | [REDACTED]     | [REDACTED]                   |
| FH87<br>(2 nests)       | A                            | A<br>(GE)                       | A<br>(GE) | I    | 2003                 | [REDACTED]     | [REDACTED]                   |
| FH90                    | I                            | I                               | I         | I    | Pre-2000             | [REDACTED]     | [REDACTED]                   |
| FH93                    | I                            | I                               | I         | I    | Pre-2000             | [REDACTED]     | [REDACTED]                   |
| FH94 <sup>11</sup>      | I                            | I                               | I         | I    | Pre-2000             | [REDACTED]     | [REDACTED]                   |
| FH95                    | I                            | I                               | I         | I    | pre-2000             | [REDACTED]     | [REDACTED]                   |
| FH96                    | I                            | I                               | I         | I    | Pre-1999             | [REDACTED]     | [REDACTED]                   |
| FH98                    | I                            | I                               | I         | I    | Pre-2001             | [REDACTED]     | [REDACTED]                   |
| FH99                    | I                            | I                               | I         | I    | Pre-2001             | [REDACTED]     | [REDACTED]                   |
| FH102                   | I                            | I                               | I         | I    | Pre-2001             | [REDACTED]     | [REDACTED]                   |
| FH103<br>(2 nests)      | A                            | A                               | I         | I    | 2003                 | [REDACTED]     | [REDACTED]                   |
| FH104                   | I                            | I                               | I         | I    | Pre-1997             | [REDACTED]     | [REDACTED]                   |

Table 3.1 (Continued)

| Nest No. <sup>2,3</sup> | Activity Status <sup>4</sup> | Activity by Year <sup>1,2</sup> |      |                   | Most Recent Activity | Legal Location | UTM Coordinates <sup>5</sup> |
|-------------------------|------------------------------|---------------------------------|------|-------------------|----------------------|----------------|------------------------------|
|                         |                              | 2003                            | 2002 | 2001              |                      |                |                              |
| FH109                   | I                            | I                               | I    | I                 | Pre-2001             | [REDACTED]     | [REDACTED]                   |
| FH112                   | I                            | I                               | I    | I                 | Pre-2001             | [REDACTED]     | [REDACTED]                   |
| FH115                   | I                            | I                               | I    | I                 | Pre-2001             | [REDACTED]     | [REDACTED]                   |
| FH118                   | I                            | I                               | I    | I                 | Pre-2001             | [REDACTED]     | [REDACTED]                   |
| FH126 (ANS)             | n/a <sup>12</sup>            | I                               | I    | n/a <sup>12</sup> | n/a <sup>12</sup>    | [REDACTED]     | [REDACTED]                   |
| FH128 (ANS)             | n/a <sup>12</sup>            | I                               | I    | n/a <sup>12</sup> | n/a <sup>12</sup>    | [REDACTED]     | [REDACTED]                   |
| FH129                   | U                            | I                               | I    | NR                | Pre-2002             | [REDACTED]     | [REDACTED]                   |
| FH132                   | U                            | I                               | I    | NR                | Pre-2002             | [REDACTED]     | [REDACTED]                   |
| FH135                   | U                            | I                               | I    | NR                | Pre-2002             | [REDACTED]     | [REDACTED]                   |
| FH138                   | U                            | I                               | I    | NR                | Pre-2002             | [REDACTED]     | [REDACTED]                   |
| FH141                   | U                            | I                               | I    | NR                | Pre-2002             | [REDACTED]     | [REDACTED]                   |
| FH148                   | U                            | I                               | NR   | NR                | Pre-2003             | [REDACTED]     | [REDACTED]                   |
| FH152                   | A                            | A                               | NR   | NR                | 2003                 | [REDACTED]     | [REDACTED]                   |
| FH153                   | U                            | I                               | NR   | NR                | Pre-2003             | [REDACTED]     | [REDACTED]                   |
| FH154                   | U                            | I                               | NR   | NR                | Pre-2003             | [REDACTED]     | [REDACTED]                   |
| FH156                   | U                            | I                               | NR   | NR                | Pre-2003             | [REDACTED]     | [REDACTED]                   |
| FH157                   | U                            | I                               | NR   | NR                | Pre-2003             | [REDACTED]     | [REDACTED]                   |
| FH161                   | U                            | I                               | NR   | NR                | Pre-2003             | [REDACTED]     | [REDACTED]                   |
| FH164                   | U                            | I                               | NR   | NR                | Pre-2003             | [REDACTED]     | [REDACTED]                   |
| FH165                   | U                            | U                               | NR   | NR                | U                    | [REDACTED]     | [REDACTED]                   |
| FH167                   | U                            | U <sup>10</sup>                 | NR   | NR                | U                    | [REDACTED]     | [REDACTED]                   |

Table 3.1 (Continued)

| Nest No. <sup>2,3</sup> | Activity Status <sup>4</sup> | Activity by Year <sup>1,2</sup> |      |                 | Most Recent Activity | Legal Location | UTM Coordinates <sup>5</sup> |
|-------------------------|------------------------------|---------------------------------|------|-----------------|----------------------|----------------|------------------------------|
|                         |                              | 2003                            | 2002 | 2001            |                      |                |                              |
| FH168                   | U                            | U <sup>10</sup>                 | NR   | NR              | U                    | [REDACTED]     | [REDACTED]                   |
| FH170                   | U                            | U <sup>10</sup>                 | NR   | NR              | U                    | [REDACTED]     | [REDACTED]                   |
| FH171                   | U                            | U <sup>10</sup>                 | NR   | NR              | U                    | [REDACTED]     | [REDACTED]                   |
| FH174                   | U                            | U <sup>10</sup>                 | NR   | NR              | U                    | [REDACTED]     | [REDACTED]                   |
| FH176                   | U                            | U <sup>10</sup>                 | NR   | NR              | U                    | [REDACTED]     | [REDACTED]                   |
| FH177                   | U                            | U <sup>10</sup>                 | NR   | NR              | U                    | [REDACTED]     | [REDACTED]                   |
| GE36                    | A                            | I                               | A    | I               | 2002                 | [REDACTED]     | [REDACTED]                   |
| GE47                    | A                            | A                               | A    | A               | 2003                 | [REDACTED]     | [REDACTED]                   |
| GE48                    | I                            | I                               | I    | I               | Pre-1996             | [REDACTED]     | [REDACTED]                   |
| GE51                    | A                            | A                               | I    | a               | 2003                 | [REDACTED]     | [REDACTED]                   |
| GE72                    | I                            | I                               | I    | I               | Pre-1998             | [REDACTED]     | [REDACTED]                   |
| GE74 <sup>13</sup>      | A                            | I                               | A    | I               | 2002                 | [REDACTED]     | [REDACTED]                   |
| ME100 <sup>14</sup>     | U <sup>15</sup>              | I                               | I    | U <sup>15</sup> | U <sup>15</sup>      | [REDACTED]     | [REDACTED]                   |
| ME120 <sup>14</sup>     | U <sup>15</sup>              | I                               | I    | U <sup>15</sup> | U <sup>15</sup>      | [REDACTED]     | [REDACTED]                   |
| ME121 <sup>14</sup>     | U <sup>15</sup>              | I                               | I    | U <sup>15</sup> | U <sup>15</sup>      | [REDACTED]     | [REDACTED]                   |
| ME122 <sup>14</sup>     | U <sup>15</sup>              | I                               | I    | U <sup>15</sup> | U <sup>15</sup>      | [REDACTED]     | [REDACTED]                   |
| ME134                   | A                            | I                               | A    | NR              | 2002                 | [REDACTED]     | [REDACTED]                   |
| OS158                   | A                            | A                               | NR   | NR              | 2003                 | [REDACTED]     | [REDACTED]                   |
| PF27                    | I                            | I                               | I    | I               | 1997 <sup>9</sup>    | [REDACTED]     | [REDACTED]                   |
| PF41                    | I                            | I                               | I    | I               | 1998 <sup>9</sup>    | [REDACTED]     | [REDACTED]                   |
| PF61                    | I                            | I                               | I    | I               | 1997                 | [REDACTED]     | [REDACTED]                   |

Table 3.1 (Continued)

| Nest No. <sup>2,3</sup> | Activity Status <sup>4</sup> | Activity by Year <sup>1,2</sup> |      |      | Most Recent Activity | Legal Location | UTM Coordinates <sup>5</sup> |
|-------------------------|------------------------------|---------------------------------|------|------|----------------------|----------------|------------------------------|
|                         |                              | 2003                            | 2002 | 2001 |                      |                |                              |
| PF63                    | I                            | I                               | I    | I    | Pre-1998             |                |                              |
| PF79                    | I                            | I                               | I    | I    | 1999                 |                |                              |
| PF81                    | A                            | A                               | A    | I    | 2003                 |                |                              |
| PF113                   | A                            | I                               | I    | A    | 2001                 |                |                              |
| PF123                   | I                            | I                               | I    | I    | Pre-2001             |                |                              |
| PF163                   | A                            | A                               | NR   | NR   | 2003                 |                |                              |
| RT160                   | A                            | A                               | NR   | NR   | 2003                 |                |                              |
| UN133                   | U                            | I                               | U    | U    | U                    |                |                              |

<sup>1</sup> A = active; A-R = used by ravens; a = likely active; I = inactive; NC = not checked/not located; NR = nest had not yet been recorded; U = unknown. Species codes in parentheses indicate the nest was used by a species other than that designated in the nest code.

<sup>2</sup> AK = American kestrel; BO = burrowing owl; CR = common raven; FH = ferruginous hawk; GE = golden eagle; ME = merlin; OS = osprey; PF = prairie falcon; RT = red-tailed hawk; UN = unknown species.

<sup>3</sup> Information for nests that have been removed from monitoring is provided in Table 3.3.

<sup>4</sup> Overall activity status is based on the BLM definition of an active nest as one which has been used by raptors in at least 1 of the past 3 years. For overall activity status, nests for which activity was likely, but not confirmed, were considered active (A). Nests which were assigned an unknown activity status (U) lack a conclusive activity determination for at least 1 of the past 3 years and/or were newly recorded and have not been monitored for 3 consecutive years. Nests confirmed inactive in all of the past 3 years are deemed inactive (I). Nests designated A-R were used by ravens in at least one of the past 3 years but were not used by raptors and, thus, are not considered active for planning and development purposes.

<sup>5</sup> 1983 NAD (Zone 12); E = easting; N = northing.

<sup>6</sup> One of the two nests (i.e., AK16 or AK17; AK142 or AK143, and FH37 or FH38) was likely active in 2002.

<sup>7</sup> Redesignated as AK from UN in 2001.

<sup>8</sup> Possibly used by great horned owl or prairie falcon in 1999.

<sup>9</sup> Date is of last confirmed activity, but activity status was unknown in at least one of the years since the last known activity; thus, more recent activity may have occurred.

<sup>10</sup> Nest newly recorded in the fall of 2003; thus, activity for that year is unknown.

<sup>11</sup> Redesignated from PF to FH in 2001.

<sup>12</sup> Artificial nest structure erected in September 2001. No prior nest history exists.

<sup>13</sup> Redesignated from UN to GE in 2002.

<sup>14</sup> Redesignated from SS (sharp-shinned hawk) to ME in 2002.

<sup>15</sup> One of the four existing ME nests (ME100, ME120, ME121, ME122) was active in 2001, but the exact nest was undetermined.

Table 3.2 Summary of Active Raptor Nests and Nests with Unknown Activity Within 0.5 Mile (1.0 Mile for Ferruginous Hawks) of the Jonah Field II Wildlife Study Area.

| Species/<br>Nest<br>No. <sup>1,2</sup> | Activity <sup>3</sup> | Legal Location | Nest<br>Condition <sup>4</sup> | Seasonal<br>Buffer<br>Radius | Most Recent Nest Production <sup>5</sup> |             |             | Nearby<br>Project<br>Features <sup>6</sup>  | Mitigation/<br>Actions <sup>7</sup>                  |
|--|-----------------------|----------------|--------------------------------|------------------------------|--|-------------|-------------|---|--|
|  |                       |                |                                |                              | Eggs                                     | Nestlings   | Fledglings  |   |  |
| AK16                                   | A <sup>8</sup>        | [REDACTED]     | U,<br>2003                     | 0.5 mi                       | U,<br>2003                               | U,<br>2003  | U,<br>2003  | Four existing wells and associated roads and pipelines within 0.5 mi  | Continue activity status and productivity monitoring |
| AK17                                   | A <sup>8</sup>        | [REDACTED]     | U,<br>2003                     | 0.5 mi                       | U, 2002                                  | U,<br>2002  | U,<br>2002  | One existing well and associated roads within 0.5 mi  | Continue activity status and productivity monitoring |
| AK18                                   | A                     | [REDACTED]     | U,<br>2003                     | 0.5 mi                       | U, 2003                                  | U,<br>2003  | U,<br>2003  | Existing road and pipeline within 0.5 mi  | Continue activity status and productivity monitoring |
| AK142                                  | A <sup>8</sup>        | [REDACTED]     | Excellent,<br>2003             | 0.5 mi                       | U, 2002                                  | U,<br>2002  | U,<br>2002  | Three existing wells and associated roads within 0.5 mi   | Continue activity status and productivity monitoring |
| AK143                                  | A <sup>8</sup>        | [REDACTED]     | Excellent,<br>2003             | 0.5 mi                       | U, 2002                                  | U,<br>2002  | U,<br>2002  | Three existing wells and associated roads within 0.5 mi   | Continue activity status and productivity monitoring |
| AK146                                  | U                     | [REDACTED]     | Excellent,<br>2003             | 0.5 mi                       | U  | U           | U           | One existing well and associated roads within 0.5 mi  | Continue activity status and productivity monitoring |
| AK147                                  | U                     | [REDACTED]     | Excellent,<br>2003             | 0.5 mi                       | U  | U           | U           | Two existing wells and associated roads within 0.5 mi   | Continue activity status and productivity monitoring |
| BO117                                  | A                     | [REDACTED]     | U,<br>2003                     | 0.5 mi                       | 1+,<br>2001                              | 1+,<br>2001 | 1+,<br>2001 | Two wells, associated resource roads and a collector road within 825 ft; an additional 10 wells within 0.5 mi | Continue activity status and productivity monitoring |

Table 3.2 (Continued)

| Species/<br>Nest<br>No. <sup>1,2</sup> | Activity <sup>3</sup> | Legal Location | Nest<br>Condition <sup>4</sup> | Seasonal<br>Buffer<br>Radius | Most Recent Nest Production <sup>5</sup> |           |            | Nearby<br>Project<br>Features <sup>6</sup>  | Mitigation/<br>Actions <sup>7</sup>   |
|--|-----------------------|----------------|--------------------------------|------------------------------|--|-----------|------------|---|---|
|  |                       |                |                                |                              | Eggs                                     | Nestlings | Fledglings |   |   |
| BO166                                  | U <sup>9</sup>        | [REDACTED]     | U, 2003                        | 0.5 mi                       | U  | U         | U          | Existing resource roads within 825 ft; three existing wells and associated resource and collector roads within 0.5 mi | Continue activity status and productivity monitoring  |
| FH14 <sup>10</sup>                     | A                     | [REDACTED]     | Excellent, 2003                | 1.0 mi                       | 1-2, 2003                                | 0, 2003   | 0, 2003    | Numerous existing project features within 1.0 mi; limited alternative nest sites available in Territory 5             | Continue activity status and productivity monitoring; if Territory 5 is inactive in 2004, potential development of ANS(s) |
| FH141                                  | U                     | [REDACTED]     | Poor, 2003                     | 1.0 mi                       | U  | U         | U          | Numerous existing project features within 1.0 mi  | Continue monitoring the nest structure for activity   |
| FH165                                  | U <sup>9</sup>        | [REDACTED]     | Poor, 2003                     | 1.0 mi                       | U  | U         | U          | One existing well and several existing roads within 1.0 mi  | Continue monitoring the nest structure for activity   |

<sup>1</sup> See Appendix A, Wildlife Map, for nest locations.

<sup>2</sup> AK = American kestrel; BO = burrowing owl; FH = ferruginous hawk.

<sup>3</sup> Active nests (A) are defined by activity or likely activity in at least one of the past three nesting seasons. Nests for which overall activity status cannot be determined because data are lacking in at least one of the past 3 years (e.g., nests which were newly recorded within the last two years) are assigned an unknown (U) activity status. See Appendix C, Raptor Nesting Records, for further detail.

<sup>4</sup> Most recently recorded nest condition; year is indicated. U = unknown (i.e., either not recorded, or in the case of cavity and burrow nesters, not discernable).

<sup>5</sup> Presents number of items and year for most recent activity in the past 3 years. U = unknown.

<sup>6</sup> See Appendix A, Project Features/Planning Map. Map was developed from best current data available from the Operators, Wyoming Oil and Gas Conservation Commission database, and a May 2003 BLM digital orthophoto of the vicinity.

<sup>7</sup> Seasonal and standard avoidance measures are not included since they would be applied as necessary for all active nests.

<sup>8</sup> Either AK16 or AK17 was active in 2002, but probably not both and either AK142 or AK143 was active in 2002, but probably not both.

<sup>9</sup> Nest newly recorded in the fall of 2003; thus, activity for that year is unknown.

<sup>10</sup> Used by golden eagle in 1999.

recorded nest in September 2003 that has fallen to the ground; and the remaining 29 are nests that have deteriorated or no longer exist. The delisted nests are depicted with red labels on the Wildlife Map in Appendix A and are listed in Table 3.3. Once a nest is delisted, it is no longer automatically monitored; however, many of these nests/nest sites are easily observed in the course of ongoing surveys, and monitoring generally is continued in case the nest is rebuilt or a new nest is constructed nearby.

One hundred thirty-four intact nests/nest sites were recorded in the WSA in 2003 (see Table 3.1). Thirteen (9.7%) of the 134 nests (i.e., BO166; FH165, 167-168, 170-171, and 174-177; and CR169 and 172-173) were newly recorded in September; therefore, activity for those nests cannot be confirmed. However, based on nest condition and the presence of mutes and fouling indicative of recent nesting activity, it appears likely that two of the nests were used in 2003. CR173 was heavily fouled and likely fledged at least one young, and current year's mutes at the burrow entrances to BO166 indicate likely use of that nest site as well. None of the nine ferruginous hawk nests recorded in September appeared to have hatched eggs or contained young, based on lack of eggshell fragments and mutes; however, it is unknown if the nests were occupied early in the season and failed before egg-laying or clutch completion.

Based on the above assumptions, 19 (14%) of 134 known raptor/common raven nests on and adjacent to the WSA were used by raptors, compared with 17 (13%) of 129 in 2002. Nine (7%) additional nests were used by common ravens, more than doubling the four occupied raven nests observed in 2002 (see Table 3.1 and Appendices B and C). Because ravens are neither raptors nor a species of special concern, their nests were not checked for productivity in 2003 unless the nests were easily observed during the course of scheduled surveys. A number of active raptor nests in the area occur at distances greater than the seasonal restriction buffer (i.e., 1.0 mi for ferruginous hawks and 0.5 mi for all other raptor species) from project activities (i.e., where raptor productivity monitoring is not required); thus, productivity data for those nests may not be available (see Appendix C).

Table 3.3 Raptor Nest Locations Removed from Inventory, Jonah Field II Wildlife Study Area, 2003.

| Nest Number <sup>1</sup> | Most Recent Activity | Legal Location | UTM Coordinates <sup>2</sup> | Comments   |
|--------------------------|----------------------|----------------|------------------------------|--|
| BO23                     | 1997 <sup>3</sup>    | [REDACTED]     | [REDACTED]                   | Area fairly disturbed; burrow not located for several years; delisted in 2003            |
| BO75                     | 1998                 | [REDACTED]     | [REDACTED]                   | Exact location never mapped; pipeline ROW constructed through the area; delisted in 2002 |
| CR111                    | 2001                 | [REDACTED]     | [REDACTED]                   | Nest gone and delisted in 2002   |
| CR114                    | 2001                 | [REDACTED]     | [REDACTED]                   | Nest gone and delisted in 2002   |
| CR127                    | 2001                 | [REDACTED]     | [REDACTED]                   | Nest gone and delisted in 2002   |
| CR139                    | 2002                 | [REDACTED]     | [REDACTED]                   | Nest gone in late summer of 2002; delisted the same year                                 |
| CR149                    | pre-2003             | [REDACTED]     | [REDACTED]                   | Nest removed in midsummer of 2003; delisted the same year                                |
| CR150                    | pre-2003             | [REDACTED]     | [REDACTED]                   | Nest removed in midsummer of 2003; delisted the same year                                |
| FH3                      | U                    | [REDACTED]     | n/a                          | Not found 1999-2000; nest gone and delisted in 2001                                      |
| FH6                      | pre-1998             | [REDACTED]     | [REDACTED]                   | Nest in very poor condition and delisted in 2003   |
| FH7                      | pre-1998             | [REDACTED]     | [REDACTED]                   | Nest in very poor condition and delisted in 2003   |
| FH13                     | U                    | [REDACTED]     | [REDACTED]                   | Nest gone and delisted in 2002   |
| FH15                     | 1999                 | [REDACTED]     | [REDACTED]                   | Nest gone and delisted in 2002   |
| FH20                     | U                    | [REDACTED]     | [REDACTED]                   | Nest gone in 2001; delisted in 2002  |
| FH22                     | U                    | [REDACTED]     | [REDACTED]                   | Nest in very poor condition and delisted in 2003   |
| FH24                     | 2000                 | [REDACTED]     | [REDACTED]                   | Nest gone in 2001; delisted in 2003  |
| FH29                     | U                    | [REDACTED]     | n/a                          | Nest gone and delisted in 2001   |
| FH58                     | U                    | [REDACTED]     | [REDACTED]                   | Nest is the same as FH56; only the FH58 nest code has been delisted                      |
| FH64                     | pre-1997             | [REDACTED]     | [REDACTED]                   | Nest gone and delisted in 2003   |
| FH65                     | U                    | [REDACTED]     | [REDACTED]                   | Nest gone and delisted in 2002   |
| FH66<br>(2 nests)        | pre-1997             | [REDACTED]     | [REDACTED]                   | Nest in very poor condition and delisted in 2003   |
| FH70                     | pre-1998             | [REDACTED]     | [REDACTED]                   | Nest gone and delisted in 2003   |

Table 3.3 (Continued)

| Nest Number <sup>1</sup> | Most Recent Activity | Legal Location   | UTM Coordinates <sup>2</sup> | Comments   |
|--------------------------|----------------------|------------------|------------------------------|--|
| FH83                     | U                    | [REDACTED]       | [REDACTED]                   | Nest gone and delisted in 2002                                       |
| FH84                     | pre-1999             | [REDACTED]       | [REDACTED]                   | Nest in very poor condition and delisted in 2003                     |
| FH85                     | U                    | [REDACTED]       | [REDACTED]                   | Nest gone and delisted in 2002                                       |
| FH89                     | pre-2000             | [REDACTED]       | [REDACTED]                   | Nest in very poor condition and delisted in 2003                     |
| FH91                     | 2002                 | [REDACTED]       | [REDACTED]                   | Nest is the same as GE74; only the FH91 nest code has been delisted  |
| FH101                    | pre-2001             | [REDACTED]       | [REDACTED]                   | Only a few sticks left in 2003; delisted the same year               |
| FH110                    | pre-1998             | [REDACTED]       | [REDACTED]                   | Nest in very poor condition in 2002; delisted in 2003                |
| FH119                    | U                    | [REDACTED]       | [REDACTED]                   | Nest is the same as FH96; only the FH119 nest code has been delisted |
| FH130                    | pre-2002             | [REDACTED]       | [REDACTED]                   | Nest in very poor condition and delisted in 2003.                    |
| FH137                    | pre-2002             | [REDACTED]       | [REDACTED]                   | Nest in very poor condition and delisted in 2003                     |
| FH175                    | U                    | [REDACTED]       | [REDACTED]                   | Nest on ground and delisted in 2003.                                 |
| UN31                     | U                    | n/a <sup>4</sup> | n/a                          | Nest obtained from BLM overlays, never located                       |
| UN32                     | U                    | n/a <sup>4</sup> | n/a                          | Nest obtained from BLM overlays, never located                       |
| UN33                     | U                    | n/a <sup>4</sup> | n/a                          | Nest obtained from BLM overlays, never located                       |
| UN34                     | U                    | n/a <sup>4</sup> | n/a                          | Nest obtained from BLM overlays, never located                       |
| UN35                     | U                    | n/a <sup>4</sup> | n/a                          | Nest obtained from BLM overlays, never located                       |
| UN40                     | U                    | n/a <sup>4</sup> | n/a                          | Nest obtained from BLM overlays, never located                       |
| UN44                     | U                    | n/a <sup>4</sup> | n/a                          | Nest obtained from BLM overlays, never located                       |
| UN45                     | U                    | n/a <sup>4</sup> | n/a                          | Nest obtained from BLM overlays, never located                       |
| UN46                     | U                    | n/a <sup>4</sup> | n/a                          | Nest obtained from BLM overlays, never located                       |
| UN49                     | U                    | n/a <sup>4</sup> | n/a                          | Nest obtained from BLM overlays, never located                       |

<sup>1</sup> BO = burrowing owl; CR = common raven; FH = ferruginous hawk; UN = unknown species.

<sup>2</sup> 1983 NAD (Zone 12); E = easting; N = northing; n/a = not available.

<sup>3</sup> Date is of last confirmed activity; but activity status was unknown in at least one of the years since the last known activity; thus, more recent activity may have occurred.

<sup>4</sup> Original location data from BLM overlays could not be field-verified and may have been incorrect.

The addition of the 17 newly recorded ferruginous hawk nests in 2003 resulted in the addition of four new ferruginous hawk nesting territories, bringing to 16 the number of nesting territories defined within the WSA (see Appendix A, Wildlife Map). Four (25%) territories have been occupied by ferruginous hawks at least once during the last 3 years (2001-2003) (Table 3.4). Territory 5 has been active and failed in each of the past two years; Territory 10 was likely active in 2002 and apparently failed early; and Territories 11 and 13 were both active in 2003, producing two and one fledgling(s), respectively. Overall activity status for six additional territories is unknown because complete data for the past three years are not available for at least some of the nests in each of those territories (i.e., either the nests were not checked in at least 1 of the last 3 years or the nests were newly recorded and do not yet have 3 years of nest history). FH24, 89, 165, 167, and 168 are isolated nests that have not been assigned territories. FH24 was used by ferruginous hawks in 2000. FH89 has been inactive the past 3 years, and FH165, 167, and 168 were newly recorded in the fall of 2003, so no nest history is yet available for those nests.

Ferruginous hawk nests also have occasionally been used by other species. Territories 6 and 10 were used by prairie falcons in 2000, and Territory 10 was used by red-tailed hawks in 2001. FH87--an isolated nest that has not been assigned a territory--was used by golden eagles in 2002 and 2003, failing during the incubating or nestling stage both years.

Three (FH14, 103, and 152) of the 71 intact ferruginous hawk nests within the Jonah WSA were occupied by ferruginous hawks in 2003. FH14 failed, with the remains of one or two eggs found below the nest on June 3. FH103 and FH152 fledged two and one young, respectively. Three additional sites (i.e., FH37, 38, and 87) have been used during at least 1 of the past 3 years, whereas 3-year activity status for 21 of the remaining nests is unknown. Only three of the nests with an active or unknown 3-year status (i.e., FH14, 141, and 165) are within 1.0 mi of the JIDPA.

Existing project features proximal to active ferruginous hawk nests and nests with unknown activity status are identified in Table 3.2 and Appendix A. Project features/developments on the

Table 3.4 2000-2003 Activity Status of Ferruginous Hawk Nesting Territories, Jonah Field II Wildlife Study Area.<sup>1</sup>

| Territory | Nests Included in Territory <sup>2</sup>  | Activity Status <sup>3</sup>                   |  |  |
|-----------|---|--|--|--|
|           |   | 2003   | 2002   | 2001   |
| 1         | 68-69, <b>70</b> , 71, 99, 118, 129   | I  | I  | I  |
| 2         | 62, <b>64-66</b> , 67, <b>84-85</b> , 90, 96, <b>101</b> , 102, <b>130</b> , <b>137</b> | I  | I  | U<br>(no record for FH130 and FH137)                   |
| 3         | 56-57, 60, <b>83</b>  | I  | I  | I  |
| 4         | 26, 93-95, 112  | I  | I  | I  |
| 5         | <b>13</b> , 14, <b>15</b> , 141   | A (FH14)<br>(failed)                           | A (FH14)<br>(failed)                           | U<br>(no record for FH141)                             |
| 6         | 2, <b>3</b> , 4-5, <b>6-7</b> , 8-12, 78, 115, 126, 128                                 | I  | I  | I  |
| 7         | <b>20</b> , 21, 22, 73, 98  | I  | I  | I  |
| 8         | 53-55, 82, 109, <b>110</b>  | I  | I  | I  |
| 9         | 42-43, 148, 161   | I  | U<br>(no record for FH148 and FH161)           | U<br>(no record for FH148 and FH161)                   |
| 10        | 37-38, 132  | I  | A (nest unknown)<br>(apparently failed)        | A (FH37) <sup>4</sup><br>(failed)                      |
| 11        | 59, 103-104   | A (FH103)<br>(fledged 2)                       | I  | I  |
| 12        | 1, 138  | I  | I  | U<br>(no record for FH138)                             |
| 13        | <b>28</b> , <b>29</b> , 152, 164  | A (FH152)<br>(fledged 1)                       | U<br>(no record for FH152 and FH164)           | U<br>(no record for FH152 and FH164; FH28 not checked) |
| 14        | 153, 154, 157   | I  | U<br>(no record for FH153, FH154, and FH157)   | U<br>(no record for FH153, FH154, and FH157)           |
| 15        | 135, 156  | I  | U<br>(no record for FH156)                     | U<br>(no record for FH135 and FH156)                   |
| 16        | 25, 170, 171, 174, <b>175</b> , 176, 177  | U<br>(no record for any of the nests but FH25) | U<br>(no record for any of the nests but FH25) | U<br>(no record for any of the nests but FH25)         |

<sup>1</sup> See Appendix A, Wildlife Map, for locations.

<sup>2</sup> Nests in bold type have been delisted and are no longer regularly monitored (see Table 3.3). No nesting territory is established for nests FH24, 87, 89, 165, 167, and 168. Nest FH58 is the same structure as FH56, **FH91** is the same structure as GE74, and **FH119** is the same structure as FH90.

<sup>3</sup> Further detail is provided in Appendix C, Raptor Nesting Records; I = inactive; a = likely active; A = active; U = unknown (not all nests in the territory were checked for activity in the year indicated). Numbers in parentheses indicate which nest in the territory was active.

<sup>4</sup> Used by red-tailed hawk.

JIDPA exist and are further planned proximal to nest Territories 5, 6, and 7. Other activities (e.g., recreational activities/off-road vehicle use, livestock grazing, predator/prey interactions, climate) will continue to occur in these and other territories.

Two ANSs (i.e., FH126 and FH128) were erected in Territory 6 in the fall of 2001. Additional nest material was attached to the platforms in summer of 2002 with the hopes of attracting a nesting pair to the area. To date, no use of these structures has been observed.

Ferruginous hawk nesting Territory 7 was not active during the past 3 years, and all known nest sites in the territory are at suboptimal locations (i.e., on the ground with easy access by predators); therefore, nesting in Territory 7 is unlikely to occur in all but the most active nesting years when all other nearby nesting territories are occupied. It is also possible that nest Territories 5, 6, and 7 and nest sites FH24 and FH89 will remain unused or will have limited success during the life of the Jonah II Field. Mitigation measures as defined in Section 3.1.2 are recommended for Territories 5 and 6 in 2004.

Seven American kestrel nests (i.e., AK16, 18, 30, 50, 88, 92, and 97) were occupied in 2003, compared to six in 2002, but productivity for all seven is unknown. Of the 15 American kestrel nest sites currently in the WSA, 12 (80%) are listed as active, one is listed inactive, and two are listed as unknown. All seven of the kestrel nests with an active status are within 0.5 mi of the JIDPA (see Table 3.2 and Appendix A [Project Features/Planning Map]).

Ten burrowing owl nest sites are currently recorded in the WSA, and two additional sites have been delisted. Of the 10 existing nest sites, two (20%) were occupied in 2003, compared to three (33%) of nine known sites used in 2002. BO159 was confirmed occupied, and a second (BO166) is presumed to have been occupied in 2003 based on a nest visit in September. Productivity at both nests is unknown. Seven burrowing owl nests have been used within the past 3 years, two of which (i.e., BO117 and 166) occur within the JIDPA.

Six golden eagle nests (four active and two inactive) are recorded within the WSA. Two (33%) of the nests (GE47 and GE51) were occupied by golden eagles in 2003, compared to three (50%) in 2002. One golden eagle fledged from GE47, whereas GE51 failed. In addition, FH87 was used by golden eagles in 2003, but the nest failed early. FH87 also was used by golden eagles in 2002 and failed to produce young in that year as well. No active golden eagle nest occurs within 0.5 mi of the JIDPA.

Nine prairie falcon nest sites (three active and six inactive) occur within the WSA. Two of the nests (PF81, which fledged five, and newly recorded PF163, which fledged five or six) were occupied in 2003, compared to one of eight known prairie falcon nests active in 2002. None of the prairie falcon nests is within 0.5 mi of the JIDPA.

Five merlin nests (ME100, 120-122, and 134) representing the territory of one pair are recorded within the WSA, two of which have been used in the past 3 years. The exact nest structure used in 2001 was not determined--ME134 was used in 2002. In 2003, the pair was not observed during either of two visits to the territory, and none of the known nests was active. Given the aggressive defense of active nests displayed in the previous two years, it appears the pair did not nest anywhere in the vicinity in 2003. All five nests are >0.5 mi from the JIDPA.

A new red-tailed hawk nest (RT160) was recorded just outside the WSA in 2003. The nest was active and fledged two juveniles. Although no red-tailed hawks were recorded nesting in the WSA in 2002, data from the Anticline nest surveys indicate that this nest was first recorded by John Dahlke in 1999 and has been used in several of the years since (see TRC 2002b, Appendix B-2, RH16 data sheet). Because of its close proximity to the WSA and the ease with which it can be checked in the course of scheduled monitoring, it was added to the list of monitored nests in 2003. Previously, the only recorded red-tailed hawk nesting in the WSA was by a pair that occupied FH37 in 2001.

One osprey nest was newly recorded in 2003. The nest is just outside the western edge of the Jonah WSA, but because of its close proximity to monitored nests and the ease with which it can

be checked in the course of scheduled surveys, it was added to the list of monitored nests. The nest is a newly erected ANS on private land adjacent to the New Fork River. On May 12, two adults were observed bringing nesting material to the platform and exhibiting defensive behavior towards the observer's vehicle that was stopped on an adjacent road. The pair had abandoned the nest by June 5 and the nest material had blown off the platform.

One nest of an undetermined species (UN133) is known to occur within the WSA (>1.0 mi from the JIDPA). The nest was recorded as inactive in 2002 and was not occupied in 2003.

Fifteen common raven nests were recorded within the WSA in 2003. Twelve (80%) of the 15 have been used by ravens in the past 3 years, whereas the status of the remaining three nests is unknown. Nine (60%) of the nests--CR105, 106, 108, 116, 145, 151, 155, 162, and 173--were occupied by ravens in 2003. The nests produced at least 18 young, with two or more young each produced at CR108 and CR151; three or more each at CR106 and CR155; and four each at CR116 and CR162. CR105 failed with four eggs on the nest. CR145 failed with no eggs or young found and with a dead adult present at the base of the windmill. Productivity at CR173 is unknown.

### 3.1.2 Monitoring/Protection Measures

The primary mitigation measure for raptor species in the WSA is avoidance of active nest locations during the breeding season. Unless excepted by the BLM during APD and ROW application reviews, all surface-disturbing activities will be restricted from February 1 through July 31 within a 0.5-mi radius of active raptor nests, except ferruginous hawk nests, for which the seasonal buffer is 1.0 mi (see Table 3.2). The seasonal buffer distance and exclusion dates may vary depending on factors such as nest activity status, raptor species, prey availability, natural topographic barriers, and line-of-sight distances. In addition, well locations, roads, ancillary facilities, and other surface structures requiring repeated human presence will not be constructed within 825 ft of active raptor nests (2,000 ft for bald eagles), where practical (BLM 1998a). Facility construction in these areas will require specific approval from the BLM.

The Operators have committed to continue monitoring nest activity status and productivity in the WSA as identified in the ROD (BLM 1998a [Appendix E], 2000b) in 2004. Nest activity status will be monitored from the ground, and new nests will be photographed and located with a handheld correctable Trimble GeoExplorer 3 GPS unit. As time allows, efforts to locate new nests will be increased in areas of the WSA that have received less focus during past ground surveys and have the greatest potential for containing suitable nesting habitat (i.e., primarily, the western portion of the WSA), particularly for ferruginous hawks. Identification of new nests in the WSA provides valuable information on raptor nesting trends and spatial use of areas within and adjacent to the JIDPA.

Operators will notify the BLM immediately if raptors or ravens are found nesting on project facilities. If nest manipulation or a situation requiring a "taking" of a nest becomes necessary, a special permit will be obtained from the Denver USFWS Office, Permit Section. Permit acquisition will be coordinated with the Wyoming State USFWS Office in Cheyenne and will be initiated with sufficient lead time to allow for development of mitigation measures. Required corresponding permits will be obtained from the WGFD in Cheyenne. Consultation and coordination with the USFWS and WGFD will be conducted for all mitigation activities relating to raptors.

Because project development is projected to continue on and adjacent to active ferruginous hawk territories 5 and 6, two ANSs were established within Territory 6 in 2001. It is recommended that the erection of two additional ANSs be considered in the vicinity of ferruginous hawk Territory 5 (see Appendix A, Wildlife Map) if that territory is inactive in 2004, assuming that the nest structures can be located such that they are unlikely to be disturbed during future natural gas development. If future development in the area precludes erection of ANSs in the vicinity of the territory, the BLM will be contacted to determine what, if any, alternative locations or mitigation might be recommended. Operators will be responsible for the construction and annual maintenance of ANSs throughout the life-of-project, and all ANSs on public lands will become the property of the BLM upon completion of the project. ANS construction and maintenance activities (if necessary) will be completed between August 1 and

September 15 of each year (Appendix D in BLM [1997]). Additional mitigation for nesting raptors may be required on a site-specific basis, as necessary, in consultation with the BLM, USFWS, and WGFD.

In future years, additional ANSs may be constructed (up to two ANSs for each impacted nest) or existing degraded raptor nests may be upgraded/reinforced to mitigate potential impacts (BLM 1997, 2000a, 2000b). The location of ANSs or nests proposed for upgrading will be identified in annual reports. ANSs will be located within or proximal to potentially affected nesting territories, outside of the line-of-sight or nest buffer of actively nesting raptor pairs, and at sites sufficiently removed from proposed development activities to minimize or avoid potential adverse effects.

In places where existing project features (e.g., well locations) are located within the buffer areas for active raptor nests (see Appendix A, Project Features/Planning Map), no extensive maintenance activities (e.g., workovers) will be allowed between February 1 and July 31 without prior BLM notification and approval (BLM 2000a, 2000b). The seasonal buffer distance and applicable exclusion dates will be determined by the BLM and specified in Conditions of Approval for APD, ROW applications, and/or Sundry Notices and may vary among nests and from year to year depending upon the potentially affected raptor species and variations in weather, nesting chronology, and other factors.

## **3.2 GREATER SAGE-GROUSE**

### **3.2.1 Results**

Table 3.5 presents a summary of greater sage-grouse lek activity on the WSA over the past 3 years, as well as nearby project features and proposed monitoring and other actions (see Appendix D, Greater Sage-Grouse Lek Records, for further detail). Table 3.6 presents information on lek use from 1992 through 2003. Leks 23 and 24 are adjacent to but outside the WSA--Lek 23 is shown on the Wildlife Map (Appendix A), but Lek 24 is outside the mapped

Table 3.5 Summary of Greater Sage-Grouse Lek Use, Potential Impacts, and Proposed Monitoring, Jonah Field II Wildlife Study Area, 2003.<sup>1</sup>

| Lek No. <sup>2</sup> | Approximate Location | Status <sup>3</sup> | Use   | Nearby Project Features <sup>4</sup>  | Monitoring/ Other Actions <sup>5</sup>  |
|----------------------|----------------------|---------------------|---|---|---|
| 1                    | [REDACTED]           | A                   | Consistent use; occupied all 9 years surveyed since 1992  | Four existing wells and associated roads and a BP injection/disposal well within 1.0 mi; numerous additional roads and wells and the Haliburton yard 1.0-2.0 mi from lek    | Monitor attendance three times in 2004  |
| 2                    | [REDACTED]           | A                   | Consistent use; occupied all 8 years surveyed since 1992; not surveyed in 2002; maximum male attendance of six males in 2003                    | Numerous existing wells, pipelines, and roads within 1.0 mi; additional existing wells, pipelines, and roads 1.0-2.0 mi from lek  | Monitor attendance three times and GPS lek perimeter in 2004                            |
| 3                    | [REDACTED]           | A                   | Consistent use; occupied 7 of the 8 years surveyed since 1992; in the one year it was considered unoccupied, only one visit was made to the lek | One existing well and road within 1.0 mi; an additional proposed well and ten existing wells, roads, and pipelines 1.0-2.0 mi from lek                                      | Monitor attendance three times in 2004  |
| 4                    | [REDACTED]           | A                   | Decreasing maximum male attendance since 1996; inactive in 2002; one male observed in 2003  | Numerous existing wells, pipelines, and roads within 1.0 mi; additional existing wells and roads 1.0-2.0 mi from lek  | Monitor attendance three times and GPS lek perimeter in 2004                            |
| 5                    | [REDACTED]           | I                   | No known use in the 4 years surveyed since 1996, but only one lek visit in 1997; not surveyed 2000-2002   | n/a; lek inactive   | n/a; lek inactive   |
| 6                    | [REDACTED]           | I                   | No known use in the 5 years surveyed since 1996, but only one lek visit in 1997; not surveyed 2001-2002   | n/a; lek inactive   | Monitor attendance in 2004 as time allows; GPS lek perimeter if the lek is used in 2004 |
| 7                    | [REDACTED]           | A                   | Consistent use; active 7 of the 8 years surveyed since 1992; not surveyed in 2002; maximum male attendance of at least three in 2003            | One existing well and road within 1.0 mi; numerous existing wells, pipelines, and roads and the Luman and Yellowpoint Compressor Stations 1.0-2.0 mi from lek               | Monitor attendance three times in 2004  |
| 8                    | [REDACTED]           | U                   | No known use in the 6 years surveyed since 1996, but only one lek visit in 1997 and only two visits in 1999                                     | Existing pipeline and collector road within 1.0 mi; numerous existing wells and associated roads and the Luman and Yellowpoint Compressor Stations within 1.0-2.0 mi of lek | Monitor attendance three times and GPS lek perimeter in 2004                            |

Table 3.5 (Continued)

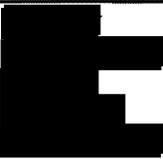
| Lek No. <sup>2</sup> | Approximate Location  | Status <sup>3</sup> | Use  | Nearby Project Features <sup>4</sup>  | Monitoring/ Other Actions <sup>5</sup>  |
|----------------------|---|---------------------|--|---|---|
| 9                    |    | A                   | Consistent use; active all 7 years surveyed since 1992; maximum male attendance of 36 in 2003  | Two existing wells and associated roads within 2.0 mi   | Monitor attendance three times and GPS lek perimeter in 2004  |
| 10                   |    | A                   | Consistent use; active all 7 years surveyed since 1992; maximum male attendance of 25 in 2003  | Five existing and seven proposed wells and associated roads within 1.0 mi; additional existing and proposed wells, roads, and the Falcon Compressor Station 1.0-2.0 mi from lek   | Monitor attendance three times in 2004  |
| 11                   |    | I                   | No known use in the 6 years surveyed between 1992 and 2003   | n/a; lek inactive   | Monitor attendance in 2004 as time allows; GPS lek perimeter if the lek is used in 2004             |
| 12                   |   | A                   | Limited use 1992-2000; not located in 2001 or 2002; lek mismapped prior to 2003; maximum male attendance of one to three individuals in 2003 | One existing and three proposed wells, a resource road and associated pipeline, and Highway 191 within 1.0 mi; an additional 14 existing and six proposed wells, a collector road, and resource roads and pipelines within 2.0 mi | Monitor attendance three times in 2004  |
| 13                   |  | I                   | No known use in the 7 years surveyed between 1992 and 2003; marginal to no suitable lek habitat in the area                                  | n/a; lek inactive   | Monitor attendance in 2004 as time allows; GPS lek perimeter if the lek is used in 2004             |
| 14                   |  | I                   | No known use between 1992 and 2000; not located in 2001 or 2002; not used in 2003  | n/a; lek inactive   | Monitor attendance three times in 2004 as time allows; GPS lek perimeter if the lek is used in 2004 |
| 15                   |  | I                   | No known use in the 5 years surveyed since 1996  | n/a; lek inactive   | n/a; lek inactive   |
| 16                   |  | U                   | Not surveyed 1992-1999; no activity noted in each 2000-2002 but only one lek visit in 2000 and 2001; not used in 2003                        | Highway 191 within 0.25 mi  | Monitor attendance three times and GPS lek perimeter in 2004  |
| 17                   |  | A                   | Consistent limited use from when first recorded in 1999 to 2001; inactive in 2002; checked one time in 2003, with no birds observed          | Twelve existing and six proposed wells and associated roads and pipelines within 1.0 mi; additional proposed and existing wells, roads, and pipelines within 1.0-2.0 mi   | Monitor attendance three times and GPS lek perimeter in 2004  |

Table 3.5 (Continued)

| Lek No. <sup>2</sup> | Approximate Location | Status <sup>3</sup> | Use   | Nearby Project Features <sup>4</sup>   | Monitoring/ Other Actions <sup>5</sup>                       |
|----------------------|----------------------|---------------------|---|--|--|
| 18                   | [REDACTED]           | A                   | Consistent heavy use since first located in 1999; maximum male attendance of 43 in 2003           | Existing collector road within 0.25 mi; seven proposed and numerous existing wells, resource roads, and pipelines within 1.0-2.0 mi  | Monitor attendance three times in 2004                       |
| 19                   | [REDACTED]           | A                   | First located in 2000; active all 3 years surveyed; not surveyed in 2003                          | One collector road within 0.5 mi; an additional road within 2.0 mi   | Monitor attendance three times and GPS lek perimeter in 2004 |
| 20                   | [REDACTED]           | U                   | Unknown; only surveyed 3 years since 1992; no birds observed during those surveys; no use in 2003 | Existing collector road within 0.25 mi; one well and road within 1.0 mi; additional roads within 2.0 mi  | Monitor attendance three times and GPS lek perimeter in 2004 |
| 21                   | [REDACTED]           | A                   | Not surveyed since first recorded in 2000; not located in 2003                                    | Four existing wells and associated roads and a BP injection/disposal well within 1.0 mi; numerous additional existing wells and roads, and the Haliburton yard 1.0-2.0 mi from lek | Monitor attendance three times and GPS lek perimeter in 2004 |
| 22                   | [REDACTED]           | A                   | Surveyed once since first recorded in 2000; not used in 2003                                      | Existing roads and pipelines and Highway 191 within 1.0 mi; additional existing wells, pipelines, and roads within 2.0 mi of lek   | Monitor attendance three times and GPS lek perimeter in 2004 |
| 23                   | [REDACTED]           | U                   | No data from 1992 to 2001; inactive in 2002, but only one lek visit that year                     | Highway 351 within 1.0 mi  | Monitor attendance three times and GPS lek perimeter in 2004 |
| 24                   | [REDACTED]           | A                   | Active in the 3 years surveyed since 1992; not surveyed in 2002 or 2003                           | None within 1.0 mi; Highway 351 within 2.0 mi  | Monitor attendance three times in 2004                       |

<sup>1</sup> See Appendix A, Wildlife Map, and Appendix D, Greater Sage-grouse Lek Records, for additional information.

<sup>2</sup> See Table 3.6 for alternate lek names.

<sup>3</sup> A = active; U = undetermined (insufficient data are available to designate the lek as inactive); I = inactive (not used for at least 3 consecutive years). Status definitions are based on personal communication, January 2004, with Keith Andrews, Wildlife Biologist, BLM Pinedale Field Office. Leks with active or undetermined status are afforded the no surface occupancy and seasonal restrictions protective measures described in Section 3.2.2 of this report.

<sup>4</sup> See Appendix A, Project Features/Planning Map.

<sup>5</sup> Seasonal and standard avoidance measures are not included since they would be applied as necessary for all active leks and leks with an undetermined activity status.

Table 3.6 Greater Sage-Grouse Trends, Jonah Field II Wildlife Study Area, 1992-2003.<sup>1</sup>

| Lek No. | Lek Name(s)                           | Most Recent Activity | History <sup>3</sup> |      |      |      |      |      |      |      |      |                   |                   |      |
|---------|---------------------------------------|----------------------|----------------------|------|------|------|------|------|------|------|------|-------------------|-------------------|------|
|         |                                       |                      | 1992                 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001              | 2002              | 2003 |
| 1       | Stud Horse Butte East/4-2             | 2003                 | NS                   | NS   | 9    | NS   | 26   | 6    | 31   | 25   | 22   | 12                | 10                | 14   |
| 2       | Sand Draw # 3/4-6                     | 2003                 | NS                   | NS   | 2    | NS   | 2    | 17   | 12   | 7    | 14   | 16                | NS                | 6    |
| 3       | Sand Draw Reservoir/<br>Sand Draw # 4 | 2003                 | NS                   | NS   | NS   | NS   | 16   | 0?   | 36   | 26   | 22   | 27                | 17                | 23   |
| 4       | Clay Hill Well/<br>Clay Hill          | 2003                 | NS                   | NS   | 16   | NS   | 15   | 4    | 4    | 0    | 1    | 1                 | 0                 | 1    |
| 5       | Sand Draw # 2/4-8                     | 1996 <sup>3</sup>    | NS                   | NS   | NS   | NS   | 1    | 0?   | 0    | 0    | NS   | NS <sup>4</sup>   | NS <sup>4</sup>   | 0    |
| 6       | Sand Draw # 5/4-9                     | 1996 <sup>3</sup>    | NS                   | NS   | NS   | NS   | 3    | 0?   | 0    | 0    | 0    | NS <sup>4</sup>   | NS <sup>4</sup>   | 0    |
| 7       | Yellowpoint Ridge/4-7                 | 2003                 | NS                   | NS   | 36   | NS   | 0    | 16   | 17   | 11   | 9    | 6                 | NS                | 3+   |
| 8       | Luman Well/4-10                       | 1996 <sup>3</sup>    | NS                   | NS   | NS   | NS   | 2    | 0?   | 0    | 0?   | 0    | NS <sup>4</sup>   | 0                 | 0    |
| 9       | Alkali Draw                           | 2003                 | NS                   | NS   | NS   | NS   | NS   | -50  | 26   | 62   | 47   | 45                | 46                | 36   |
| 10      | The Rocks                             | 2003                 | NS                   | NS   | NS   | NS   | NS   | 60   | 53   | 79   | 64   | 62                | 47                | 25   |
| 11      | Bob/4-5                               | UNK                  | NS                   | NS   | UNK  | NS   | UNK  | NS   | 0    | 0    | 0    | NS <sup>4</sup>   | NS <sup>4</sup>   | 0    |
| 12      | The Rocks Road/<br>3-8                | 2003                 | 1                    | 0    | 0    | 0    | 1    | 4    | 1    | 0+   | 0    | NL <sup>4</sup>   | NL <sup>4</sup>   | 1-3? |
| 13      | Wagon Wheel/3-6                       | UNK                  | NS                   | NS   | NS   | NS   | 0    | 0    | 0    | 0    | 0?   | NS <sup>4</sup>   | 0?                | 0    |
| 14      | Sand Springs Well # 1/3-7             | UNK                  | 0                    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | NL <sup>4,5</sup> | NL <sup>4,5</sup> | 0    |
| 15      | Sand Draw #1/Sand Draw                | 1996 <sup>3</sup>    | NS                   | NS   | NS   | NS   | 1    | 0?   | 0    | 0    | 0    | NS <sup>4</sup>   | NS <sup>4</sup>   | 0    |
| 16      | Long Draw                             | UNK                  | NS                   | NS   | NS   | NS   | NS   | NS   | NS   | NS   | 0?   | 0?                | 0                 | 0    |
| 17      | Buckhorn Well #1                      | 2001 <sup>3</sup>    | NS                   | NS   | NS   | NS   | NS   | NS   | NS   | 5    | 3    | 3                 | 0                 | 0?   |
| 18      | Shelter Cabin Reservoir               | 2003                 | NS                   | NS   | NS   | NS   | NS   | NS   | NS   | 6    | 90   | 73                | 43                | 43   |
| 19      | Prairie Dog Town 5/Prairie Dog        | 2002 <sup>3</sup>    | NS                   | NS   | NS   | NS   | NS   | NS   | NS   | NS   | 9    | 22                | 7                 | NS   |
| 20      | Upper Alkali Creek                    | UNK                  | NS                   | NS   | 0    | NS   | 0    | NS   | NS   | NS   | NS   | NS                | NS                | 0    |
| 21      | South Rocks                           | 2000 <sup>3</sup>    | NS                   | NS   | NS   | NS   | NS   | NS   | NS   | NS   | 10   | NS                | NS                | NL   |
| 22      | Antelope State                        | 2000                 | NS                   | NS   | NS   | NS   | NS   | NS   | NS   | NS   | 9    | 0                 | 0                 | 0    |
| 23      | Drill Pad                             | UNK                  | NS                   | NS   | NS   | NS   | NS   | NS   | NS   | NS   | NS   | NS                | 0?                | 0    |
| 24      | Little Fred Satellite                 | 2001 <sup>3</sup>    | UNK                  | UNK  | UNK  | UNK  | UNK  | UNK  | 4    | ≥1   | NS   | 5                 | NS                | NS   |

<sup>1</sup> Further detail is provided in Appendix D, Greater Sage-grouse Lek Records.

<sup>2</sup> Numbers refer to maximum male attendance observed; NS = not surveyed; NL = not located- survey was attempted but no birds were observed and exact location of lek could not be confirmed; UNK = unknown; + = unclassified birds observed but not included; ? = no males were observed on the lek, but the lek was visited less than three times during that breeding season.

<sup>3</sup> The lek may have been active more recently than indicated because data are lacking for at least one year since the last known activity.

<sup>4</sup> In the 1999-2000 Jonah Wildlife Studies report (TRC Mariah 2001a), it was recommended that monitoring of these leks be discontinued because of apparent lack of use/abandonment in recent years. In light of the 2002 draft *Wyoming Greater Sage-Grouse Conservation Plan* (WGFD 2002), it is recommended that monitoring of all of these leks except lek 14 be resumed in 2003.

<sup>5</sup> Lek 14 has been determined historical (i.e., inactive in 10 consecutive years) because in 2001 and 2002, it is likely that the lek was not located because the lek was inactive.

area. Available data for these leks are included in Table 3.5. Legal locations for all leks are provided in Table 3.5 and in the Greater Sage-Grouse Lek Records (Appendix D).

The BLM is currently in the process of developing new management guidance for greater sage-grouse, which likely will include new criteria for determining lek activity status; however, in the meantime, a lek is determined inactive if it is not used in 3 consecutive years (personal communication, Keith Andrews, Wildlife Biologist, BLM PFO). Leks that have an undetermined activity status due to lack of monitoring data are presumed active for management purposes until an inactive status can be confirmed.

Fourteen (58%) of the 24 known leks within 2.0 mi of the WSA are considered active based on the above criteria, and an additional four are assigned an undetermined lek status. Leks 1, 2, 3, 7, 9, 10, 18, and 19 have shown consistent use during the years for which monitoring data are available, and no notable declines in use have been identified (Table 3.6 and Appendix D, Greater Sage-Grouse Lek Records). Decreasing attendance has been observed at Lek 4, with maximum male attendance down from 16 in 1994 to one in 2000 and 2001, 0 in 2002, and 1 in 2003. Due to the extent of nearby project development, this lek may continue to have low use or no use throughout the remainder of field development. Leks 21 and 22 were both used in 2000, but there is insufficient data available to comment further on trends in attendance and use of those leks since 1992. Lek 12 (The Rocks Road) has exhibited low to no attendance since 1992, with monitoring data in 2001 and 2002 indicating that the lek was not located those years. In 2003, an extensive search of the area after a fresh snowfall revealed the presence of 1-3 birds (probably males, based on track patterns) several hundred meters north (and out of the line of sight) of the lek as it was mapped. It is possible that previous monitoring of this lek has not detected birds because of the mapping error. Monitoring data for Leks 17 and 24 show relatively consistent low levels of use of these leks since 1999 and 1998, respectively.

Four leks have been assigned an undetermined status--Leks 8, 16, 20, and 23. Generally, a minimum of three visits to a lek within a season is recommended to make a determination that the lek was not used in a given year, as there are a number of reasons why birds might not be

observed on an occupied lek on any given morning (e.g., birds may flush or scatter due to the presence of a predator; the observer may not arrive at the lek before the birds have left for the morning, based on light and weather conditions). Although Leks 8 and 16 appear not to have been used in at least 3 consecutive years (see Table 3.6), monitoring of Lek 8 was limited to one visit in 1997 and two visits in 1999, and Lek 16 was visited one time each in 2000 and 2001; therefore, those leks have been assigned an undetermined activity status. Leks 20 and 23 have been monitored only 3 and 2 of the last 12 years, respectively, and neither has been monitored for 3 consecutive years; therefore, data are insufficient to determine activity status of those leks.

The remaining six leks (i.e., 5, 6, 11, 13, 14, and 15) are considered inactive at this time. Well pads and facilities are located on the Lek 5 and Lek 15 sites, and it is unlikely that birds will return to the leks in the foreseeable future. Thus, no further monitoring of these two lek sites is proposed. The wells and associated facilities within 0.25 mi of the lek locations were permitted based on the inactive status of the leks at the time of development (personal communication, January 16, 2004, with Keith Andrews, Wildlife Biologist, BLM PFO). Lek 6 has been surveyed 6 years since 1992, and birds have been observed in just 1 year (three males in 1996). Although the lek site contains several areas of suitable habitat, it appears to have been abandoned in recent years assuming it ever was an established lek. No attendance has been recorded for Leks 11, 13, or 14 since 1992, with the leks having been monitored 4, 7, and 12 of the past 12 years, respectively. It appears that these sites were never established leks (e.g., possibly an incidental one-time observation of one to several males recorded in the area during the spring) or that the leks have been abandoned. In addition, Lek 13 lacks suitable habitat, as mapped.

No new greater sage-grouse leks were recorded within the WSA in 2003.

Greater sage-grouse winter use studies included 13 site-specific clearance surveys by WWC of areas proposed for disturbance during the winter of 2002-2003 (personal communication, January 2004, with Keith Andrews, Wildlife Biologist, BLM PFO). On December 17, 2002, 50-75 greater sage-grouse were recorded in the SW $\frac{1}{4}$  of Section 14, T30N, R108W.

Tracks of 15-20 grouse were recorded on January 31, 2003, [REDACTED]

[REDACTED] A group of 14 sage-grouse was observed on March 6, 2003, [REDACTED]

[REDACTED] In addition, several winter roost pellet groups and one Year 2002 nest were observed during the surveys. Letter reports and maps are provided in Appendix F, and complete reports with data sheets are available for review at the BLM PFO.

Removal of water development structures proximal to Lek 4 (Clay Hill lek) was recommended in 2000 and 2001 to remove potential raptor perch sites and reduce the use of the area by livestock and humans (TRC Mariah 2001a, 2001b). However, it was subsequently decided that removal of these structures, in light of the recent drought conditions, was not advisable at this time (personal communication, January 2004, with Keith Andrews, Wildlife Biologist, BLM PFO).

### 3.2.2 Monitoring and Protection Measures ?

✓ Leks currently designated active include 1-4, 7, 9-10, 12, 17-19, 21-22, and 24. Insufficient information is available for Leks 8, 16, 20, and 23 to designate them as inactive; thus, their status is undetermined. It is recommended that, for planning purposes, leks with undetermined activity status be afforded the same monitoring and protection measures as active leks. In the following discussion of monitoring and protection measures, the term "active" includes leks of undetermined status.

Monitoring and identification of greater sage-grouse leks on the WSA, as specified in the WMPP (Appendix E in BLM [1998a]) and the EA for the Modified Jonah Field II Project (BLM 2000b), will continue in 2004 as agreed upon by the Operators.

It is recommended that the WGFD and/or BLM continue to implement aerial (fixed-wing) lek inventories of the WSA in 2004 to provide further lek locational data and to identify any new or previously undiscovered leks or lek satellites. Aerial lek surveys would be flown during March/April. The absence/decreased use of Leks 4-6, 8, and 11-16 may indicate that alternate

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lek sites are being used; therefore, it is recommended that aerial and ground observations continue to be made in 2004 in the vicinity of these leks to locate any new unmapped leks.

Monitoring (ground surveys) of the leks in 2004 will be conducted, as needed, by WGFD, BLM, and/or COOP personnel, with limited assistance from TRC Mariah personnel. Because it is not known what new criteria for determining lek activity status may be proposed by BLM, it is recommended that all active leks and leks with undetermined activity status be monitored in 2004 (i.e., a total of 18 leks). The criterion used for determining lek activity status is described in Section 3.2.1. It is further recommended that Leks 6, 11, 13, and 14 be checked, as time allows, to determine if birds are using any area adjacent to those historic lek sites. Gaps in monitoring data are the single biggest problem in determining lek activity status, so it is of the utmost importance that all leks scheduled for monitoring be visited at least three times during the season.

Another problem that may contribute to determining lek activity status is inaccurate mapping of leks. In 2003, it was determined that Lek 12 was mismapped by several hundred meters, which may have resulted in assigning the lek an inactive status in previous years (the actual lek site is downhill and out of sight of the mapped location). Thirteen sage-grouse leks on the Jonah study area lack GPS perimeter data, and data for four additional leks were obtained by non-TRC Mariah personnel prior to 2003. TRC Mariah personnel accompanied by BLM personnel refined the GPS perimeters for seven of the 24 leks in 2003 using handheld correctable GPS units (i.e., Trimble GeoExplorer 3). The resulting GPS files demonstrated that the GPS data obtained prior to 2003 lacked accuracy (leks were often mismapped by several hundred meters). It is important to obtain accurate GPS perimeter data for the 17 leks currently lacking reliable GPS locational data because development plans are affected by seasonal and no surface occupancy stipulations associated with active leks. It is recommended that GPS perimeter data be obtained for as many of the 17 leks as feasible given time and scheduling constraints of BLM and COOP personnel and lek activity. TRC Mariah personnel, in coordination with BLM and/or COOP personnel, will use correctable GPS equipment in 2004 in tandem with the knowledge of the

people who are most familiar with the leks and their boundaries to obtain reliable boundaries for these leks.

The principal protection for greater sage-grouse is avoidance of leks during the breeding season and the avoidance of probable nesting areas during the nesting season. In accordance with the Modified Jonah Field II DR and EA (BLM 2000a, 2000b), the following protection measures will be adhered to unless exempted by the BLM on a case-by-case basis.

All surface-disturbing activities, including pipeline construction, will be avoided within 0.25 mi of active leks. Operators will maintain a 0.5-mi disturbance-free buffer around Leks 7 and 8 south of the JIDPA (BLM 2000b) (see Appendix A, Wildlife Map). In addition, no permanent high profile structures such as buildings and storage tanks (e.g., suitable raptor perches) will be constructed within 0.25 mi of any active lek (BLM 2000b) and within up to 0.5 mi from areas within the line-of-sight of leks as deemed necessary by BLM on a case-by-case basis (BLM 2000a). A 600-ft no-disturbance buffer (i.e., 300 ft on either side of Sand Draw, Alkali Draw, and portions of Granite Wash within the J2PA) (see Appendix A, Project Features/Planning Map) will be maintained (BLM 2000b) to protect nesting grouse. If natural gas reserves beneath the 600-ft no-disturbance buffer or the 0.25-mi active grouse lek buffer are deemed suitable for development, Operators may utilize directional drilling to access these resources.

All construction and drilling activity will be avoided during the strutting period (March 1-May 15) within 1.0 mi of active leks (BLM 2000a, 2000b). In addition, prior to the start of surface-disturbing activities during the nesting season (April 1-July 31) in potential greater sage-grouse nesting habitat within 2.0 mi of an active lek, on-site reviews will be required by the BLM and conducted by a qualified biologist to determine if the area is being used by nesting grouse (BLM 1998a). If nesting grouse are not deemed present, the BLM may grant permission to proceed with surface-disturbing activities in the area. However, if nesting grouse are located, surface-disturbing activities will be delayed until July 31 or until nesting is completed.

Operators have committed to avoiding optimal greater sage-grouse nesting habitat during the nesting period, where practical (BLM 2000b); however, no optimal habitat (as defined in Table 2.1 of TRC Mariah [2001a]) has been identified in the JIDPA (TRC 2001a). Because grouse nesting and brood-rearing is known to occur in the sagebrush-dominated habitats on the area, it is recommended that no disturbance (other than linear crossings) be authorized within the basin big sagebrush vegetation type (this type is currently protected by a 600-ft buffer [i.e., 300 ft on either side of Sand Draw, Alkali Draw, and portions of Granite Wash within the J2PA]) and that new surface disturbance within the dense sagebrush type be avoided during the nesting period, where practical (see Appendix A, Wildlife Project Features/Planning Map).

Aerial greater sage-grouse winter use investigations of the Jonah WSA will be implemented during February 2004 to identify potential grouse wintering areas. All survey data will be provided to the BLM and WGFD and included in the 2004 Jonah Wildlife Studies Report.

### **3.3 THREATENED, ENDANGERED, PROPOSED, CANDIDATE, AND OTHER BLM WYOMING SPECIES OF CONCERN**

#### **3.3.1 Results**

##### **3.3.1.1 Black-footed Ferret**

Whitetail PDTs within the J2PA were initially mapped by Anderson Environmental Consulting (Anderson 1996), and selected towns within the WSA have been remapped and censused between 2001 and 2003 to determine whether they meet the black-footed ferret habitat density criteria (i.e.,  $\geq 8$  burrows per acre) established in the USFWS (1989) guidelines. The most current data on PDTs within the Jonah WSA are presented in Table 3.6. Refined PDT boundaries and high-density areas within towns are presented in Appendix A (Wildlife Map). PDT 26, a PDT identified in 2002 during Anticline wildlife monitoring studies, is newly included in Table 3.7. An additional area of recent prairie dog activity (PDT 2C) was identified

Table 3.7 Whitetail Prairie Dog Towns, Jonah Field II Wildlife Study Area, 2003.

| Prairie Dog Town <sup>1</sup> | Acreage <sup>2</sup> | Number of Open Burrows <sup>2,3</sup>   | Burrow Density (burrows/acre) <sup>2,4</sup> |
|-------------------------------|----------------------|---|--|
| 1                             | 159 (42)             | 586 (370)                               | 3.7 (8.8)                                    |
| 2A                            | 174 (71)             | 646 (522)                               | 3.7 (7.4)                                    |
| 2B                            | 43 (25)              | 159 (137)                               | 3.7 (5.5)                                    |
| 2C                            | UNK                  | NS                                      | UNK  |
| 3A                            | 56                   | 34                                      | 0.6  |
| 3B                            | 47                   | 24                                      | >0.5   |
| 4                             | 903                  | NS                                      | UNK  |
| 5                             | 106                  | NS                                      | UNK  |
| 6                             | 212                  | 1,811                                   | 8.5  |
| 7                             | 800                  | NS                                      | UNK  |
| 8                             | 1,131 (131)          | 5,090 <sup>5</sup> (1,860) <sup>6</sup> | 4.5 (14.2) <sup>6</sup>                      |
| 9A                            | 104 (13)             | 127 (66)                                | 1.22 (5.08)                                  |
| 9B                            | 166 (74)             | 1,011 (847)                             | 6.09 (11.45)                                 |
| 10                            | 39                   | NS                                      | UNK  |
| 11                            | 203                  | NS                                      | UNK  |
| 12                            | 79                   | NS                                      | UNK  |
| 13                            | 86                   | NS                                      | UNK  |
| 14                            | 105                  | NS                                      | UNK  |
| 15                            | 189                  | NS                                      | UNK  |
| 16                            | 214 (52)             | 1,477 <sup>5</sup> (718) <sup>6</sup>   | 6.9 <sup>5</sup> (13.8) <sup>6</sup>         |
| 17                            | 108 (30)             | 702 <sup>5</sup> (468) <sup>6</sup>     | 6.5 <sup>5</sup> (15.6) <sup>6</sup>         |
| 18                            | 328 (55)             | 1,345 <sup>5</sup> (913) <sup>6</sup>   | 4.1 <sup>5</sup> (16.6) <sup>6</sup>         |
| 19                            | 10                   | NS                                      | UNK  |
| 20                            | 9                    | NS                                      | UNK  |
| 21                            | 73                   | 137                                     | 1.9  |
| 22                            | 474                  | 1049                                    | 2.2  |
| 23A                           | 758                  | 6,599 <sup>7</sup>                      | 8.7 <sup>7</sup>                             |
| 23B                           | 14                   | 36                                      | 2.6  |
| 24                            | 2                    | 13                                      | 6.5  |
| 25A                           | 38                   | 372                                     | 9.78   |
| 25B                           | 7                    | 3                                       | 0.4  |
| 25C                           | 2                    | 6                                       | 3.0  |
| 25D                           | <1                   | 4                                       | 5.7  |
| 25E                           | 1                    | 5                                       | 5  |
| 26                            | 38                   | 35                                      | 0.9  |

<sup>1</sup> See Appendix A, Wildlife Map, for location.

<sup>2</sup> Numbers in parentheses are for high-density areas; unless otherwise noted, number of open burrows and burrow density are based on a complete census of burrows in the town. Data for PDT 1, 2A, 2B, 3A, 3B, 6, and 21-25E are from TRC Mariah field data (2001a); data for PDT 9A and 9B are from TRC Mariah (2002a); data for PDT 8, 16, 17, and 18 are from Schlumberger Geco-Prackla (2000); data for PDT 26 are from TRC Mariah (2002b); data for PDT 22 and 23A are from 2003 unpublished field data.

<sup>3</sup> NS = not surveyed.

<sup>4</sup> UNK = unknown.

<sup>5</sup> Estimates based on a sample of up to 5% of the entire PDT (Schlumberger Geco-Prackla 2000).

<sup>6</sup> Estimates based on a sample of approximately 5% of the dense portion of the PDT (Schlumberger Geco-Prackla 2000).

<sup>7</sup> Estimate based on a census of approximately 27% of the PDT (TRC Mariah 2003 unpublished field data).

within the J2PA in 2003. PDT 2C has not been formally mapped or censused, and it is recommended that those actions be undertaken in 2004.

PDT 6, PDT 23A and high-density portions of PDT 1 within the JIDPA contain prairie dog burrow densities suitable for black-footed ferret (i.e.,  $\geq 8.0$  burrows per acre), and black-footed ferret surveys may be required if additional developments are proposed within these towns/areas. In addition, PDT 25A and portions of PDTs 8, 9A, 9B, and 16-18 in the southeastern portion of the WSA have prairie dog burrow densities suitable for black-footed ferret (see Appendix A, Wildlife Map), and black-footed ferret surveys may be required if development is proposed within these towns. Because prairie dog complexes in the JIDPA and vicinity have not been defined and cleared for ferrets, it is recommended that prior to constructing proposed project features in any identified prairie dog town, regardless of burrow density, USFWS be consulted, if deemed necessary by BLM, to determine the need for black-footed ferret surveys (USFWS 1989).

#### 3.3.1.2 Bald Eagle, Ferruginous Hawk, and Golden Eagle

No bald eagles were observed within the WSA during 2003 wildlife investigations. Information on ferruginous hawks and golden eagles is provided in Section 3.1.1.

#### 3.3.1.3 Mountain Plover

Mountain plover have not been observed within the JIDPA since wildlife monitoring was implemented in 1997, but they have been observed within the J2PA in PDT 5 (one individual each in 2000 and 2002) and in the vicinity of PDT 9A and 9B just south of the JIDPA (seven individuals in 2002 and two in 2003). Other locations where plover have been recorded within or adjacent to the WSA include 1) the Alkali Creek area in the western portion of the WSA (14 individuals in 1999 and one each in 2000, 2001 and 2003); 2) PDT 21 (nine individuals in 2001); 3) PDT 23A (one individual in 2001); 4) north of Highway 351 [REDACTED] (two in 2001 and seven in 2002); and 5) north of Highway 351 by the New Fork River crossing (at least eight individuals in 2001). Observations in 2003 were limited to two birds in

the PDT 9 vicinity during formal mountain plover surveys (see Appendix E) and one individual incidentally observed in the Alkali Creek area.

#### 3.3.1.4 Western Burrowing Owl

Results of burrowing owl surveys are presented in Section 3.1.1, Raptors.

#### 3.3.1.5 Other TEPC&WSC

Of the TEPC&WSC listed in Table 2.1 as potentially occurring in the WSA, greater sage-grouse, whitetail prairie dog, western burrowing owl, ferruginous hawk, mountain plover, and pygmy rabbit are discussed elsewhere in this report. Loggerhead shrike, sage thrasher, sage sparrow, and Brewer's sparrow were observed at various locations throughout the JIDPA during on-site investigations and species-specific wildlife monitoring activities (see Appendix B, General Wildlife Observation Data Forms), and these species likely breed in the area. Additional observations of TEPC&WSC may have been recorded during APD and ROW reviews. Those data are available for review at the BLM PFO.

### 3.3.2 Monitoring and Protection

USFWS and/or WGFD consultation and coordination will be conducted as deemed necessary by BLM for all mitigation activities relating to TEPC&WSC and their habitats implemented during 2004.

#### 3.3.2.1 Black-footed Ferret

In PDTs/portions of PDTs of sufficient size and burrow density for black-footed ferret habitat (i.e., PDT 6, PDT 23A, and high-density portions of PDT 1) that are proposed for disturbance, black-footed ferret surveys will be conducted in adherence to USFWS guidelines as established in USFWS (1989). In addition, since prairie dog complexes have not been defined for the

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JIDPA and vicinity, USFWS will be contacted to determine the need for black-footed ferret surveys prior to development within any mapped prairie dog town, regardless of burrow density, if deemed necessary by BLM.

Surveys, if necessary, will be conducted by a USFWS-qualified biologist no more than 1 year prior to proposed disturbance, and reports identifying survey methods and results will be prepared and submitted to the USFWS and BLM in accordance with Section 7 of the *Endangered Species Act of 1973*, as amended, and Interagency Cooperation Regulations. Surveys will be financed by the Operators.

If black-footed ferrets or their sign are found within the J2PA but outside the JIDPA, the USFWS will be notified immediately, and formal consultation will be initiated to develop strategies that ensure no adverse effects to the species (BLM 1997). If black-footed ferrets or their sign are found within the JIDPA, the USFWS will be notified immediately, and no further disturbance will occur to the prairie dog complex in which the black-footed ferret was observed. Before ground-disturbing activities are initiated in black-footed ferret habitat, authorizations to proceed will be required from the BLM in consultation with the USFWS.

#### 3.3.2.2 Bald Eagle, Ferruginous Hawk, and Golden Eagle

Monitoring and protection protocol for bald eagle, ferruginous hawk, and golden eagle in 2004 will be the same as described for raptors (see Section 3.1.2). Additional measures may be applied on a species- or site-specific basis, as deemed necessary by the USFWS and/or BLM, if potential impacts to these species are identified during 2004 APD and ROW application reviews.

#### 3.3.2.3 Mountain Plover

The mountain plover was proposed for listing as a federally threatened species in 1999. The USFWS withdrew the listing in September 2003 because new information indicated that the

threats to mountain plover as identified in the listing were not as significant as initially believed. However, any federally proposed or candidate species withdrawn from USFWS consideration is initially included on BLM's Wyoming sensitive species list (BLM 2002).

It is recommended that formal surveys for plover in 2004 be conducted as in the past, but only in areas within 0.5 mi of the JIDPA where plover have been previously recorded (i.e., occupied mountain plover habitat) (personal communication, January 2004, with Keith Andrews, Wildlife Biologist, BLM PFO). One area within 0.5 mi of the JIDPA (i.e., the vicinity of PDT 9) is considered occupied mountain plover habitat based on this criterion, and that area will be surveyed in 2004.

The following protocol has been modified from that presented in BLM (1998a, Appendix E) to accommodate USFWS changes to mountain plover survey and avoidance protocol. The protocol remains consistent with that presented in BLM (2000b).

During the period of May 1-June 15, 2004, mountain plover surveys will be conducted by an Operator-financed, BLM-approved biologist in accordance with USFWS guidelines (USFWS 2002) on occupied nesting habitat within 0.5 mi of the JIDPA (personal communication, January 2004, with Keith Andrews, Wildlife Biologist, BLM PFO). Survey procedures will be as described in Section 2.3.3.

If breeding birds are observed within 0.25 of proposed surface disturbance, additional surveys will be implemented immediately prior to construction to search for active nest sites. If an active nest is located, a 0.25-mi buffer zone will be established around the nest to prevent direct and indirect nest disturbance and planned activities will be delayed 37 days, or 1 week post-hatching (USFWS 2002). If a brood of flightless chicks is observed, activities will be delayed at least 7 days. In areas where no plover are observed, surface-disturbing activities will occur post-survey completion and as near to completion of surveys as possible. Mountain plover surveys will not be conducted for construction activities planned for the period of July 11 through April 9.

Where access roads and/or well locations have been constructed prior to the mountain plover nesting season (April 10-July 10) and development activities have not been initiated prior to April 10, a BLM-approved biologist will conduct a site investigation of the disturbed area prior to proposed activities to determine whether mountain plover are present. If plover are nesting in the area, the Operators will delay development activities until nesting is complete.

The nest success and productivity of all mountain plover nests found within the JIDPA will be monitored and reported to the BLM and USFWS Wyoming Field Office annually. Survey results will be compared with annual development plans to determine if any proposed surface-disturbing activities will affect occupied mountain plover nesting habitat. Where feasible, development plans will be modified to avoid nesting habitat (e.g., through road re-alignment).

If removal of mountain plover nesting habitat is unavoidable, loss would be minimized by creation of additional nesting habitat; many of the existing and proposed pipeline reclamation areas on the JIDPA likely provide suitable plover breeding habitat. If nesting habitat is disturbed, the area will be reclaimed to approximate original conditions (topography, vegetation, hydrology, etc.) after completion of activities, such that disturbed potential mountain plover breeding habitat is reclaimed to conditions suitable for mountain plover breeding. Operators will minimize road construction and maintenance activities (i.e., grading) in suitable plover habitat from April 10 to July 10.

#### 3.3.2.4 Western Burrowing Owl

Monitoring and avoidance of prairie dog colonies (see Section 3.3.2.1) and avoidance of active raptor nests during the nesting period (see Section 3.1.2) will continue in 2004, and productivity monitoring will be implemented for all active burrowing owl nests on the JIDPA and a surrounding 0.5-mi area. Additional measures may be applied in future years if burrowing owl nesting and/or productivity in the WSA appears to be declining. These potential measures will be identified by the BLM.

### 3.3.2.5 Other TEPC&WSC

No formal surveys for other TEPC&WSC are proposed for 2004; however, since loggerhead shrike, Brewer's sparrow, sage sparrow, and sage thrasher, as well as pygmy rabbit sign, have been observed in the area (see Appendix B, General Wildlife Observation Data Sheets), special attention to these species is recommended for APD and ROW application field reviews. If, during implementation of surveys for other species or during APD and ROW application field reviews, any TEPC&WSC is observed on areas within 0.5 mi of proposed disturbance sites, nests or other crucial features for the observed species will be avoided, and consultation and coordination with the BLM, USFWS, and WGFD will be conducted, as necessary. Construction activities in these areas will be curtailed until there is concurrence among Operators, BLM, USFWS, and WGFD as to what activities can be authorized. Activities will, in most cases, be delayed until such time that no adverse effects would occur (e.g., after fledging). Pygmy rabbits are discussed further in Section 3.4.

No additional protection measures will be required for other sensitive species potentially present on the WSA; however, it is assumed that the protection protocol specified below for general wildlife will benefit TEPC&WSC as well (see Section 3.5.2). In addition, if TEPC&WSC are observed, efforts will be made to determine the activities of the species on the WSA (e.g., breeding, nesting, foraging, hunting). If any management agency (i.e., BLM, WGFD, USFWS) identifies a potential for impacts to any TEPC&WSC additional monitoring and/or protection measures may be implemented as directed by the BLM.

## **3.4 HABITAT MAP REFINEMENT AND SAND DRAW INVESTIGATIONS**

### 3.4.1 Results

A pedestrian reconnaissance of Sand Draw and a small portion of Granite Wash by Wild Horse Reservoir was conducted in the fall of 2003. Desert cottontails occur along much of Sand Draw, and likely pygmy rabbit sign also was observed. Sign characteristics were generally as described

in *Surveying for Pygmy Rabbits* (draft) (Ulmschneider 2003) (i.e., active burrows ranging from 4 to 10 inches in diameter with rabbit scat of 4 to 6 mm in diameter). Probable pygmy rabbit sign was found in three general locations along Sand Draw in the JIDPA (see Appendix A, Wildlife Map).

Numerous other wildlife species and/or their sign were observed in the basin big sagebrush-dominated areas along Sand Draw. The area provides more cover and higher stature vegetation (basin big sagebrush heights were 15 ft at some locations) than adjacent habitats; therefore, it provides unique habitat characteristics (e.g., nesting sites, hiding cover, thermal cover) within the JIDPA. The habitat also likely serves as a corridor for wildlife movement across the JIDPA, since development is precluded in Sand Draw within 300 ft either side of the channel.

Greater sage-grouse individuals and sign were observed during the investigations. Winter roost scat piles were found beneath basin big sagebrush plants at several locations along the corridor, primarily beneath plants occurring at the edge of the basin big sagebrush habitat. It is likely that the tall vegetation along the draw remains exposed even during the most severe winters, thereby affording both winter forage and suitable roost sites for greater sage-grouse during those times.

The basin big sagebrush-dominated areas along Sand Draw in the JIDPA range from less than 5 ft to approximately 150 ft in width, and drainage channel widths range from 5 to 40 ft. No basin big sagebrush habitat occurs along Granite Wash within the JIDPA; however, basin big sagebrush habitat occurs along at least a portion of the remainder of Granite Wash within the J2PA. No riparian/wetland habitat was found along Sand Draw. The only wetland indicators in the area were drift lines within the channel and above the channel banks and the occasional occurrence of a single wetland plant species--*Juncus*--in sloughed bank areas. The most common understory plant species observed during the investigation were western and thickspike wheatgrasses (*Elymus smithii* and *E. lanceolatus*), Sandberg bluegrass (*Poa sandbergii*), and Great Basin wildrye (*E. cinereus*).

### **3.4.2 Monitoring and Protection**

The Sand Draw drainage provides unique wildlife habitat that shelters several sensitive wildlife species, as well as a number of species not observed elsewhere within the JIDPA. In addition, Alkali Draw and portions of Granite Wash provide similar habitat outside of the JIDPA but within the adjacent J2PA. It is recommended that the 600-ft wide protection buffer (300 ft either side of the channel) be maintained along Sand and Alkali Draws and portions of Granite Wash within the J2PA as indicated on the Project Features/Planning Map (Appendix A). This recommendation is based on 1) the unique nature of the basin big sagebrush habitat within the J2PA (i.e., denser and much taller vegetative structure than surrounding areas); 2) the known presence of numerous wildlife species that use the habitat, including a number of BLM-sensitive species (e.g., pygmy rabbit, greater sage-grouse, sage thrasher, sage sparrow); and 3) the extent of existing and potential disturbance in the JIDPA.

It is further recommended that investigations of the Sand Draw drainage channel within the JIDPA (and portions of Granite Wash and Alkali Draw within the J2PA, as time allows) be implemented again in 2004 as a component of sensitive species investigations and to supplement general wildlife observations within the JIDPA and adjacent study area.

## **3.5 GENERAL WILDLIFE**

### **3.5.1 Results**

Limited data on other wildlife species observed on the WSA during 2003 surveys are provided in Appendix B and in APD and ROW application field review data available at the BLM PFO. In addition, Table 3.8 provides a comprehensive list of species observed within the Jonah WSA during wildlife monitoring from 1997 through 2003.

### **3.5.2 Monitoring and Protection**

No formal wildlife monitoring for other wildlife species is recommended during 2004 at this time.

Table 3.8 List of Species Observed Within the Jonah Wildlife Study Area During Wildlife Monitoring, 1997-2003.

| Common Name                           | Scientific Name                  |
|---------------------------------------|----------------------------------|
| <b>Birds</b>                          |                                  |
| Eared grebe                           | <i>Podiceps nigricollis</i>      |
| Great blue heron                      | <i>Ardea herodias</i>            |
| Gadwall                               | <i>Anas strepera</i>             |
| American wigeon                       | <i>Anas americana</i>            |
| Mallard                               | <i>Anas platyrhynchos</i>        |
| Blue-winged teal                      | <i>Anas discors</i>              |
| Northern pintail                      | <i>Anas acuta</i>                |
| Lesser scaup                          | <i>Aythya affinis</i>            |
| Ruddy duck                            | <i>Oxyura jamaicensis</i>        |
| Osprey                                | <i>Pandion haliaetus</i>         |
| Northern harrier                      | <i>Circus cyaneus</i>            |
| Swainson's hawk                       | <i>Buteo swainsonii</i>          |
| Red-tailed hawk                       | <i>Buteo jamaicensis</i>         |
| Ferruginous hawk <sup>1</sup>         | <i>Buteo regalis</i>             |
| Golden eagle                          | <i>Aquila chrysaetos</i>         |
| American kestrel                      | <i>Falco sparverius</i>          |
| Merlin <sup>2</sup>                   | <i>Falco columbarius</i>         |
| Prairie falcon                        | <i>Falco mexicanus</i>           |
| Greater sage-grouse <sup>1</sup>      | <i>Centrocercus urophasianus</i> |
| Sandhill crane                        | <i>Grus canadensis</i>           |
| Killdeer                              | <i>Charadrius vociferus</i>      |
| Mountain plover <sup>1</sup>          | <i>Charadrius montanus</i>       |
| American avocet                       | <i>Recurvirostra americana</i>   |
| Wilson's phalarope                    | <i>Phalaropus tricolor</i>       |
| Mourning dove                         | <i>Zenaida macroura</i>          |
| Burrowing owl <sup>1</sup>            | <i>Athene cunicularia</i>        |
| Short-eared owl                       | <i>Asio flammeus</i>             |
| Common nighthawk                      | <i>Chordeiles minor</i>          |
| Northern flicker                      | <i>Colaptes auratus</i>          |
| Say's phoebe                          | <i>Sayornis saya</i>             |
| Loggerhead shrike <sup>1</sup>        | <i>Lanius ludovicianus</i>       |
| Blue-headed (formerly Solitary) vireo | <i>Vireo solitarius</i>          |
| Clark's nutcracker <sup>2</sup>       | <i>Nucifraga columbiana</i>      |
| Black-billed magpie                   | <i>Pica pica</i>                 |
| American crow                         | <i>Corvus brachyrhynchos</i>     |
| Common raven                          | <i>Corvus corax</i>              |
| Horned lark                           | <i>Eremophila alpestris</i>      |
| Tree swallow                          | <i>Tachycineta bicolor</i>       |
| Violet-green swallow                  | <i>Tachycineta thalassina</i>    |
| Rock wren                             | <i>Salpinctes obsoletus</i>      |

Table 3.8 (Continued)

| Common Name                         | Scientific Name                         |
|-------------------------------------|---|
| Ruby-crowned kinglet <sup>2</sup>   | <i>Regulus calendula</i>                |
| Mountain bluebird                   | <i>Sialia currucoides</i>               |
| Townsend's solitaire                | <i>Myadestes townsendi</i>              |
| Sage thrasher <sup>1</sup>          | <i>Oreoscoptes montanus</i>             |
| Wilson's warbler                    | <i>Wilsonia pusilla</i>                 |
| Green-tailed towhee                 | <i>Pipilo chlorurus</i>                 |
| Chipping sparrow                    | <i>Spizella passerina</i>               |
| Brewer's sparrow <sup>1</sup>       | <i>Spizella breweri</i>                 |
| Vesper sparrow                      | <i>Pooecetes gramineus</i>              |
| Lark sparrow                        | <i>Chondestes grammacus</i>             |
| Sage sparrow <sup>1</sup>           | <i>Amphispiza belli</i>                 |
| Lark bunting                        | <i>Calamospiza melanocorys</i>          |
| Fox sparrow                         | <i>Passerella iliaca</i>                |
| Song sparrow                        | <i>Melospiza melodia</i>                |
| Dark-eyed junco <sup>2</sup>        | <i>Junco hyemalis</i>                   |
| Western meadowlark                  | <i>Sturnella neglecta</i>               |
| Brown-headed cowbird                | <i>Molothrus ater</i>                   |
| Gray-crowned rosy-finch             | <i>Leucosticte tephrocotis</i>          |
| American goldfinch                  | <i>Carduelis tristis</i>                |
| <b>Mammals</b>                      |   |
| Badger                              | <i>Taxidea taxus</i>                    |
| Coyote                              | <i>Canis latrans</i>                    |
| Red fox <sup>3</sup>                | <i>Vulpes vulpes</i>                    |
| Whitetail prairie dog <sup>1</sup>  | <i>Cynomys leucurus</i>                 |
| Wyoming ground squirrel             | <i>Spermophilus elegans elegans</i>     |
| Thirteen-lined ground squirrel      | <i>Spermophilus tridecemlineatus</i>    |
| Least chipmunk                      | <i>Tamias minimus</i>                   |
| Northern pocket gopher <sup>3</sup> | <i>Thomomys talpoides</i>               |
| Deer mouse                          | <i>Peromyscus maniculatus</i>           |
| Whitetail jackrabbit                | <i>Lepus townsendii</i>                 |
| Desert cottontail                   | <i>Sylvilagus auduboni</i>              |
| Pygmy rabbit <sup>1,3</sup>         | <i>Brachylagus idahoensis</i>           |
| Mule deer <sup>3</sup>              | <i>Odocoileus hemionus</i>              |
| Pronghorn                           | <i>Antilocapra americana</i>            |
| <b>Reptiles/Amphibians</b>          |   |
| Eastern short-horned lizard         | <i>Phrynosoma douglassi brevirostre</i> |

<sup>1</sup> BLM Wyoming Animal Species of Concern, September 20, 2002 list (BLM 2002).

<sup>2</sup> Species was observed only on the forested northern side of Ross Ridge outside the JIDPA. This habitat type is found only in this area of the WSA.

<sup>3</sup> Actual individuals not observed; only sign (e.g., tracks, antlers, diggings, scat).

Protection measures primarily designed to minimize impacts to other area resources (e.g., vegetation and surface water resources including wetlands, steep slopes) have been identified by BLM (1998a, 2000b), and these measures provide additional impact mitigation for area wildlife. Well locations, access roads, pipelines, and ancillary facilities will be selected and designed to minimize disturbances to areas of high wildlife habitat value, including wetlands and riparian areas. Areas with high erosion potential and/or rugged topography (i.e., steep slopes, dunes, floodplains, unstable soils) will be avoided, where practical.

Removal or disturbance of vegetation will be minimized through construction site management (e.g., by utilizing previously disturbed areas, using existing ROWs, designating limited equipment/materials storage yards and staging areas, scalping), and Operators will adhere to all reclamation guidelines presented in the Reclamation Plan for this project (see Appendix B in BLM 1997, 1998a, 1998b).

Operators will continue to advise project personnel regarding appropriate speed limits (i.e., 35 mph or less, as posted) in the project area to minimize wildlife mortality due to vehicle collisions. Roads will be reclaimed as soon as possible after they are no longer required. Some existing roads in the area may be closed and reclaimed by Operators as authorized by the BLM. No roads are currently proposed for reclamation.

Project-related travel will be restricted to established project roads to protect plant populations and wildlife habitat. No off-road travel will be allowed except in emergencies.

No road or pipeline ROW fencing is proposed; however, if ROW fencing is required, it will be kept to a minimum, and the fences will consist of four-strand barbed wire that meets BLM and WGFD approval for facilitating wildlife movement. Wildlife-proof fencing will be utilized only to enclose reclaimed areas where it is determined that wildlife species are impeding successful vegetation establishment. No improvements to existing fences on the area are currently proposed.

No new wildlife/livestock water sources are currently proposed for development.

Potential increases in poaching will be minimized through continued employee and contractor education regarding wildlife laws, and Operators will notify all employees (contract and company) that conviction of a major game violation may result in disciplinary action. If violations are discovered, Operators will immediately notify the BLM and WGFD, and if the violation involves an employee or contractor, said employee or contractor will be disciplined and may be dismissed by the Operator and/or prosecuted by the WGFD.

Additional nonspecies-specific wildlife mitigations include the following.

- Reserve, workover, evaporation, and flare pits potentially hazardous to wildlife will be adequately protected by netting and/or fencing as directed by the BLM to prevent access by migratory birds and other wildlife.
- Siphons will be constructed at each reserve pit to collect, as necessary, any undesirable materials that may enter the pits.
- Potential impacts to fisheries will be minimized by using proper erosion control techniques (e.g., water bars, jute netting, rip-rap, mulch). Construction within 500 ft of open water and 100 ft of intermittent or ephemeral channels will be avoided, where possible. Channel crossings for roads and pipelines will be constructed when flows are not expected (i.e., late summer or fall). All necessary crossings will be constructed perpendicular to flow. No surface water or shallow groundwater in connection with surface water will be utilized for the proposed project.
- Firearms and dogs will not be allowed on the J2PA during working hours by BLM or Operator employees or their contractors unless excepted by BLM (e.g., dogs may be allowed to facilitate/conduct greater sage-grouse nest location surveys). Operators will enforce existing drug, alcohol, and firearms policies.
- If injured wildlife are observed within the J2PA, Operator personnel will contact the BLM PFO and/or the WGFD Pinedale Office. Under no circumstances will injured wildlife be approached or handled.
- Wildlife monitoring as specified in the ROD (Appendix E in BLM [1998]) will be continued in 2004.

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