



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road – Suite 308
Cheyenne, Wyoming 82009

In Reply Refer To:

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FEB 23 2007

Mr. Paul Michalak
Uranium Recovery and Licensing Branch
Decommissioning and Uranium Recovery
Licensing Directorate
Division of Waste Management and
Environmental Protection
Office of Federal and State Materials and
Environmental Management Programs
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-001

Dear Mr. Michalak:

Thank you for your letter dated January 25, 2007 requesting information on federally-listed threatened and endangered species and critical habitat for the North Butte *In Situ* Leach Satellite Project located in Campbell County, approximately 35 miles southwest of Gillette, Wyoming. We are providing the following information in accordance with the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*), Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703, Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668, Fish and Wildlife Coordination Act, 48 Stat. 401, as amended, 16 U.S.C. 661 *et seq.*, Fish and Wildlife Act of 1956, as amended, 70 Stat. 1119, 16 U.S.C. 742a-742j and Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act.

Federal Agency Responsibilities

The Service has responsibility, under a number of federal laws, treaties, Executive Orders, and memoranda of agreement, for the conservation and management of fish and wildlife resources. Some of these same authorities also require other federal agencies to consider, avoid, or prevent adverse impacts to fish, wildlife, and wetland resources. To ensure resources are afforded adequate consideration and protection, federal agencies are often required to consult with the Service regarding potential impacts their actions may have on fish and wildlife resources. In the event that this project may be funded, permitted or authorized by a federal agency, that agency and their non-federal representatives should work with the Service in developing surveys, impact minimization measures, and conservation measures for all federally listed species. If the proposed

project may affect a listed species, consultation with the Service pursuant to section 7(a)(2) of the Act will be required. Section 7 (a)(1) of the Act directs federal agencies to utilize their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation and recovery of listed species.

In accordance with section 7(c) of the Act, my staff has determined that the following listed species may be present in or near the project area. We would appreciate receiving information as to the current status of each of these species within the project area.

SPECIES	STATUS	HABITAT
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Threatened	Found throughout state
Black-footed ferret (<i>Mustela nigripes</i>)	Endangered	Prairie dog towns
Ute ladies'-tresses (<i>Spiranthes diluvialis</i>)	Threatened	Seasonally moist soils and wet meadows of drainages below 7000 feet elevation

Bald eagle: While habitat loss and human disturbance remains a threat to the bald eagle's full recovery, most experts agree that its recovery to date is encouraging. Bald eagles often return to use the same nest and winter roost year after year. Because bald eagles are particularly sensitive to human disturbance at their nests and communal roosts, protective buffers should be implemented around these areas [Buehler et al. 1991, Greater Yellowstone Bald Eagle Working Group (GYBEWG) 1996, Montana Bald Eagle Working Group (MBEWG) 1994, Stalmaster and Newman 1978, U.S. Fish and Wildlife Service (USFWS) 1986].

In Wyoming, bald eagle nest buffer recommendations include avoiding project-related disturbance and habitat alteration within 1 mile of bald eagle nests. The nesting season generally occurs from February 1 to August 15 and bald eagle nest buffers should receive maximum protection during this time period. For some activities a home range protective buffer may include potential foraging habitat within 2.5 miles from the nest (GYBEWG 1996). We recommend that you contact the Service to determine the potential impact of your activity to nesting bald eagles if your project will cause disturbance within one of these nest buffer areas.

A communal roost is defined as an area where six or more eagles spend the night within 100 meters (328 feet) of each other (GYBEWG 1996). We recommend that disturbance be restricted within 1 mile of known communal winter roosts during the period of November 1 to April 1. Additionally, we recommend avoiding disturbance and habitat alteration within 0.5 mile of active roost sites year round.

Disturbance sensitivity of roosting and nesting bald eagles may vary between individual eagles, topography, density of vegetation and intensity of activities. The buffers and

timing stipulations, as described above, should be implemented unless site-specific information indicates otherwise (Stalmaster and Newman 1978, USFWS 1986). Modification of buffer sizes may be permitted where biologically supported and in coordination with the Service.

Black-footed ferret: Black-footed ferrets may be affected if prairie dog towns are impacted. Please be aware that black-footed ferret surveys are no longer recommended in black-tailed prairie dog towns statewide or white-tailed prairie dog towns except those noted in our enclosed February 2, 2004, letter. However, we encourage the project proponent to protect all prairie dog towns for their value to the prairie ecosystem and the myriad of species that rely on them. We further encourage you to analyze potentially disturbed prairie dog towns for their value to future black-footed ferret reintroduction. If a field check indicates that prairie dog towns may be affected, you should contact this office for guidance on ferret surveys.

Ute ladies'-tresses: Ute ladies'-tresses is a perennial, terrestrial orchid, 8 to 20 inches tall, with white or ivory flowers clustered into a spike arrangement at the top of the stem. Ute ladies'-tresses typically blooms from late July through August; however, depending on location and climatic conditions, it may bloom in early July or still be in flower as late as early October. Ute ladies'-tresses is endemic to moist soils near wetland meadows, springs, lakes, and perennial streams where it colonizes early successional point bars or sandy edges. The elevation range of known occurrences is 4,200 to 7,000 feet in alluvial substrates along riparian edges, gravel bars, old oxbows, and moist to wet meadows. Soils where Ute ladies'-tresses have been found typically range from fine silt/sand, to gravels and cobbles, as well as to highly organic and peaty soil types. Ute ladies'-tresses is not found in heavy or tight clay soils or in extremely saline or alkaline soils. Ute ladies'-tresses seems intolerant of shade and small scattered groups are found primarily in areas where vegetation is relatively open. Surveys should be conducted by knowledgeable botanists trained in conducting rare plant surveys. Ute ladies'-tresses is difficult to survey for primarily due to its unpredictability of emergence of flowering parts and subsequent rapid desiccation of specimens. The Service does not maintain a list of qualified surveyors but can refer those wishing to become familiar with the orchid to experts who can provide training or services.

Migratory Birds

The project proponent should recognize their obligation to protect the many species of migratory birds, including eagles and other raptors protected under the MBTA and BGEPA. The MBTA, prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations and does not require intent to be proven. Section 703 of the MBTA states, "Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means or in any manner, to ... take, capture, kill, attempt to take, capture, or kill, or possess ... any migratory bird, any part, nest, or eggs of any such bird..." The BGEPA, prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing.

Work that could lead to the take of a migratory bird including an eagle, their young, eggs, or nests should be coordinated with our office before any actions are taken. Removal or destruction of such nests or causing abandonment of a nest could constitute violation of one or both of the above statutes. Removal of any active migratory bird nest or nest tree is prohibited. For golden eagles, inactive nest permits are limited to activities involving resource extraction or human health and safety. Mitigation, as determined by the local Service field office, may be required for loss of these nests. No permits will be issued for an active nest of any migratory bird species, unless removal of an active nest is necessary for reasons of human health and safety.

In the event that this project may be funded, permitted or authorized by a federal agency the Service recommends that they implement those strategies outlined within the Memorandum of Understanding directed by the President of the U.S. under the Executive Order 13186, where possible to promote the conservation of migratory bird populations and their habitats.

Species of Concern

The Service has determined that the greater sage-grouse (*Centrocercus urophasianus*) is unwarranted for listing at this time. However, we continue to have concerns regarding sage-grouse population status, trends and threats, as well as concerns for other sagebrush obligates. The following information is provided for your use in the evaluation of proposed actions and their potential effects to the sage-grouse.

Habitat loss and degradation, as well as loss of population connectivity have been identified as important factors contributing to the decline of greater sage-grouse populations rangewide (Braun 1998, Wisdom et al. 2002). Therefore, any activities that result in loss or degradation of sagebrush habitats that are important to this species should be closely evaluated for their impacts to sage-grouse. If important breeding habitat (leks, nesting or brood rearing habitat) is present in the project area, the Service recommends no project-related disturbance March 1 through June 30, annually. Minimization of disturbance during lek activity, nesting, and brood rearing is critical to sage-grouse persistence within these areas. Likewise, if important winter habitats are present, we recommend no project-related disturbance November 15 through March 14.

We recommend you contact the Wyoming Game and Fish Department to identify important greater sage-grouse habitats within the project area, and appropriate mitigative measures to minimize potential impacts from the proposed project. The Service recommends surveys and mapping of important greater sage-grouse habitats where local information is not available. The results of these surveys should be used in project planning, to minimize potential impacts to this species. No project activities that may exacerbate habitat loss or degradation should be permitted in important habitats.

Additionally, unless site-specific information is available, greater sage-grouse habitat should be managed following the guidelines by Connelly *et al.* 2000 (also known as the WAFWA guidelines).

Wetlands/Riparian Areas

The Service recommends measures be taken to avoid and minimize wetland losses in accordance with Section 404 of the Clean Water Act, Executive Order 11990 (wetland protection) and Executive Order 11988 (floodplain management) as well as the goal of "no net loss of wetlands." If wetlands may be destroyed or degraded by the project, those wetlands in the project area should be inventoried and fully described in terms of their functions and values. Acreage of wetlands, by type, should be disclosed and specific actions should be outlined to avoid, minimize, and compensate for all unavoidable wetland impacts.

Riparian or streamside areas are a valuable natural resource and impacts to these areas should be avoided whenever possible. In view of their importance and relative scarcity, impacts to riparian areas should be avoided. Any potential, unavoidable encroachment into these areas should be further avoided and minimized. Unavoidable impacts to streams should be assessed in terms of their functions and values, linear feet and vegetation type lost, potential effects on wildlife, and potential effects on bank stability and water quality. Measures to compensate for unavoidable losses of riparian areas should be developed and implemented as part of the project.

Plans for mitigating unavoidable impacts to wetland and riparian areas should include mitigation goals and objectives, methodologies, best management practices, time frames for implementation, success criteria, and monitoring to determine if the mitigation is successful. The mitigation plan should also include a contingency plan to be implemented should the mitigation not be successful. In addition, wetland restoration, creation, enhancement, and/or preservation does not compensate for loss of stream habitat; streams and wetlands have different functions and provide different habitat values for fish and wildlife resources.

Contaminants Associated with *In Situ* Uranium Mining

High selenium concentrations can occur in wastewater from *in situ* mining of uranium ore as uranium-bearing formations are usually associated with seleniferous strata (Boon 1989). Boon (1989) reported that uranium deposits in the southern Powder River Basin in Converse County, Wyoming can contain up to 4,500 µg/g (ppm) of selenium. The leaching solution dissolves selenium present in the formation. The disposal of this wastewater can expose migratory birds to selenium which is known to cause impaired reproduction and mortality in sensitive species of birds such as waterfowl.

The *in situ* mining wastewater is typically disposed of through deep-well injection or discharge into large evaporation ponds. One mining operation in Converse County disposes of the wastewater through land application using center-pivot irrigation after treatment for removal of uranium and radium.

In 1998, the Service conducted a study of a grassland irrigated with wastewater from an *in situ* uranium mine and found that selenium was mobilized into the food chain and bioaccumulated by grasshoppers and songbirds (Ramirez and Rogers 2002). Disposal of the *in situ* wastewater through irrigation is not recommended by the Service due to the

potential for selenium bioaccumulation in the food chain and adverse effects to migratory birds. Additionally, land application may result in the contamination of groundwater and eventually seep out and reach surface waters. Additionally, the selenium-contaminated groundwater could seep into low areas or basins in upland sites and create wetlands which would attract migratory birds and other wildlife.

The Service is also concerned with the potential for elevated selenium in evaporation ponds receiving *in situ* wastewater. Waterborne selenium concentrations $\geq 2 \mu\text{g/L}$ are considered hazardous to the health and long-term survival of fish and wildlife (Lemly 1996). Additionally, water with more than $20 \mu\text{g/L}$ is considered hazardous to aquatic birds (Skorupa and Ohlendorf 1991). Chronic effects of selenium manifest themselves in immune suppression to birds (Fairbrother et al. 1994) which can make affected birds more susceptible to disease and predation. Selenium toxicity will also cause embryonic deformities and mortality (See et al. 1992, Skorupa and Ohlendorf 1991, Ohlendorf 2002)

If submerged aquatic vegetation and/or aquatic invertebrates are present in evaporation ponds with high waterborne selenium concentrations, extremely high dietary levels of this contaminant can be available to aquatic migratory birds. Ramirez and Rogers (2000) documented selenium concentrations ranging from 434 to 508 $\mu\text{g/g}$ in pondweed (*Potamogeton vaginatus*) collected from a uranium mine wastewater storage reservoir that had waterborne selenium concentrations ranging from 260 to 350 $\mu\text{g/L}$.

The potential for selenium and other contaminants to impact migratory birds should be assessed if the proposed facility will use ponds to store or dispose of the wastewater or if the wastewater will be disposed of in such a manner as to potentially expose migratory birds or other wildlife to contaminants.

We appreciate your efforts to ensure the conservation of endangered and threatened species, migratory birds and species of concern. If you have further questions regarding our comments or your responsibilities under the authorities listed above, please contact Pedro 'Pete' Ramirez of my staff at the letterhead address or phone (307)772-2374, extension 236.

Sincerely,



Brian T. Kelly
Field Supervisor
Wyoming Field Office

cc: WGFD, Non-Game Coordinator, Lander (B. Oakleaf)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne (V. Stelter)

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