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30 CFR, PART 784.21 FISH AND WILDLIFE PLAN
SAGE POINT-DUGOUT CANYON PROJECT

Utah Division of Wildlife Resources provides the following recommendations in order to secure required baseline data and to minimize disturbances and impacts on wildlife and their habitats that could be impacted during mining and reclamation operations at Eureka Energy's Sage Point-Dugout Canyon Project. The recommendations also address how enhancement of the wildlife resource and their habitats as discussed in 30 CFR, 783. 20 can be achieved. These are consistent with the performance standards of 30 CFR, 817.97. In instances where it would be necessary to restore or could be beneficial to enhance high value habitats for fish and wildlife (30 CFR, part 817.97 d 4 and 817.97 d 5); or that the primary or secondary postmining land use will be for wildlife habitat (30 CFR, part 817.97 d 9) and rangeland seedings are to be used, recommended seed lists and rates of application are provided (30 CFR, parts 817.111 through 817.117; note 817.116 a, 817.116 b 3 IV and 817.117 c 2).

The mine plan and adjacent areas are inhabited on occasion and during different seasons of the year by about 354 species of vertebrate wildlife. Use areas for the "high interest" species from this group of wildlife have been ranked into four levels of importance. The most valuable to an individual species or ecological assemblage are the crucial-critical areas followed in respective importance by high-priority,

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limited value use areas. Each type of use area requires various and specific levels of protection from man's activities. Additionally due to the variability of vegetation communities in each use area, various and specific technologies in reclamation will need to be evaluated for possible enhancements of wildland habitats or the required level of reclamation.

It is recommended that the company make significant effort to educate all employees associated with their mine operation of the intricate values of the wildlife resource associated with the mine plan area, adjacent areas and the local area. Each employee should be advised not to unnecessarily or without proper permits harass or take any wildlife. (Apprehension of wildlife violators has increased by nearly 250 percent during recent years in the region). It is especially important that wildlife not be harrassed during winter periods, breeding seasons and early in the rearing process. Exploration should be limited as much as possible during these crucial-critical periods.

During winter wildlife are always in a depleted condition. Unnecessary disturbance by man causes them to use up critical and limited energy reserves which, often times, results in mortality. In less severe cases, the fetus being carried by mammals may be aborted or absorbed by the animal, thus reducing reproductive success of a population.

During breeding seasons disturbance by man can negatively affect the number of breeding territories for some species of wildlife.

Disturbance can also interrupt courtship displays and preclude timely interactions between breeding animals. This could result in reduced reproductive success and ultimate reductions in population levels.

Early in the rearing process young animals need the peace and tranquility normally afforded by remote wildlands. It is also during this period that young animals gain the strength and ability to elude man and other predators. This allows the young animal to develop in relatively unstressed situations and to utilize habitats that are secure from predators. Disturbance by man can compromise this situation and result in abandonment of the young by the female, increased accidents that result in mortality to young animals or increased natural predation. It is recommended that employees be cautioned against disturbing young animals or females with young if accidentally located.

Employees associated with mining operations should be instructed that when wildlife are encountered during routine work that they not stop vehicles for viewing purposes. Moving traffic is less disturbing to wildlife than traffic that stops or results in out of the vehicle activities. If viewing is desirable, the vehicle should only be slowed, but not stopped.

There are no recommendations for a wildlife plan that would enhance any game fisheries associated with the company's mining operation. It is recommended that if waters of suitable quality for use by non-game fishes or other wildlife are developed through the mining operation that appropriate permits be secured and the water discharged into local drainages.

If mine operations occur that physically or chemically damages any perennial stream (class 1 through 5 waters) beyond the impact of mere crossings, detailed reclamation plans will be required. Since no game fish or threatened or endangered fish species inhabit the company's mine plan or adjacent areas, reclamation plans need not address macroinvertebrates or macophytes. In order to achieve reclamation, the company would have to provide for measurement of the physical characters of the stream prior to disturbance--surface water information required in 30 CFR, part 779.16, data on stream velocity, gradient, width, depth, pool-riffle ratio and substrate types.

Reclamation that would achieve development of a stream channel similar in character to the channel that existed prior to mining would allow for natural re-establishment of macroinvertebrates, macrophytes and the non-game fish population. This would adequately mitigate for disturbance and temporary loss of those resources. There would be no mitigation for displacement and possible loss of other wildlife species dependent upon the non-game fishes as a prey source. It is believed that impacts on these species would not be significant.

It is also recommended that adequate precautions be taken to keep all forms of coal from being inadvertently deposited in perennial stream channels or other drainages that would allow coal to be transported to a perennial stream during periods of run-off. This would include blow coal from haulage trucks, railroads or other transportation systems or storage piles along with larger particles from similar and other sources. If needed to control blow coal, haulage systems should be covered, or the surface of the coal appropriately sprayed in order to solidify it against wind movement or travel speeds reduced so that no coal is allowed to blow from the transportation system.

Utah Division of Wildlife Resources reaffirms all of the recommendations in 30 CFR, parts 817.44, 817.57 and 817.126 for protection of stream channels and their associated riparian and wetland zones. It is recommended that all natural wetlands and riparian vegetation along streams, drainage bottoms, or around seeps and springs be maintained. Roads and other facility developments should not destroy these limited, highly productive and specialized habitats. Roads crossing through those areas should do so in a manner that is least damaging to the habitat. Wetlands and riparian habitats are ranked as crucial-critical habitats and are the most productive sites in terms of herbage and biota produced as compared to other local habitat types. It is probable that a majority of the vertebrate wildlife that inhabit the mine plan area make some use of riparian or wetland areas.

It is important to note that roads and other surface facilities to be constructed should as far as practicable be placed at sites where they will not compromise wildlife or their use areas. Also, surface facilities, including roads, should be screened if possible from wildlife use areas by vegetation or terrain.

It is important that any use or storage of coal on the mine plan area be done in such a way that it will not be allowed to enter any perennial stream courses. The impacts of coal on aquatic ecosystems are many and varied; therefore, coal must be kept out of aquatic ecosystems.

There are no specific recommendations for enhancement of habitats for amphibians and reptiles. However, any enhancement of habitat which provides a greater diversity of vegetation will also benefit amphibians and reptiles. It is important to note that all of these species are protected by Utah law. It is urged that individual specimens not be destroyed. This is especially true for snakes which are a valuable component of the ecosystem.

Snake dens are ranked as being crucial-critical to the population and are protected by law. If a den is located, it should be reported to the Utah Division of Wildlife Resources. Snake dens can be moved but only with intensive efforts that may take a year or more (snakes are caught and removed in the spring and fall). Thus, construction of

facility developments may take place in denning locations if there is sufficient lead-time to relocate the occupants. To date, no snake dens have been identified at locations that will be impacted by the company's project.

*Survey for
snake dens?*

Several species of grouse and the chukar inhabit the project area. No recommendations to lessen impacts on these species can be made other than those suggestions made earlier and recommended reclamation that will be discussed later.

No studies concerning upland game birds are recommended for purposes of determining mitigation, enhancement projects or reclamation techniques.

It is recognizable that development and operation of a mining project will in some cases negatively impact many wildlife species through physical destruction of habitats and continual disturbance that makes other habitats unavailable or less desirable to an individual animal. It is also true that impacts that are negative to one species may be beneficial to another species. In the instance of avifauna it is recommended that the company plant native and/or ornamental berry producing shrubs around surface facilities. This will provide food and cover for many of the smaller species of birds, resulting in enhancement of their substantial value and high-priority habitats. This action would also mitigate for disturbances and destruction of avifauna habitats at other sites on the mine plan and adjacent areas.

No studies concerning small birds, mourning doves or waterfowl are recommended for purposes of determining mitigation, enhancement projects or reclamation techniques.

It is important to note that the nests of all birds (except the house sparrow, starling and ferral pigeon) when active and their eggs are protected by federal (Federal Migratory Bird Treaty Act) or state laws (Utah Code 23-17-1 and 23-17-2).

Several species of raptors inhabit the mine plan area. A list would include cliff nesting falcons, golden eagles (year-around resident) and bald eagles (winter resident--November 15 to March 15). To date, location of most raptor nests and other parameters concerning their populations in the project area are not known. As a result the company must provide for a one-season, intensive inventory of raptor breeding territories and identification of aerie sites. This inventory should not extend beyond a one-mile radius of proposed portal facilities, load-out sites or any other facility development that will result in continual or significant disturbances during the raptor breeding season (February through June). It is suggested that this study be conducted prior to any development and that the services of a qualified raptor biologist be secured. A helicopter could be utilized for satisfactory identification and verification of active aerie sites. Breeding territories can be determined from ground reconnaissance.

raptor survey

If located, nests when active should not be disturbed and abandoned stick nests of raptors are never to be damaged during inactive periods. Every effort should be made to eliminate man's disturbance within visual sight or one-fourth mile of an active raptor nest. This effort is demanded in the instance of golden eagles and cliff nesting falcons since they are sensitive to disturbance and could abandon the nest. Termination of man's use of a site would not be required if eagles or falcons constructed the nest after mining had been initiated, since it would demonstrate the birds willingness to tolerate mining activities and the associated disturbance by man. Disturbance that would come from above and within view of a raptor nest should be precluded if possible for a distance of at least one-half mile.

Roost trees for eagles, if located, must not be disturbed.

As a general comment, whenever active raptor nests are observed or roose trees located, they should be reported to the Utah Division of Wildlife Resources and the U.S. Fish and Wildlife Service.

Design and construction of all electrical power lines and other transmission facilities shall be designed in accordance with guidelines set forth in "Environmental Criteria for Electric Transmission System" published by the USDI and USDA in 1970 and/or the REA Bulletin 61-10 "Powerline Contacts by Eagles and Other Large Birds".

*Give
copies
of each*

Several species of big game and small game animals inhabit the project area. Other than for mule deer, there are no recommendations to

lessen impacts except those suggestions made earlier and recommended reclamation that will be discussed later.

No studies concerning game animals other than mule deer are recommended for purposes of determining mitigations, enhancement projects or reclamation techniques.

In the instance of mule deer there is serious concern in regards to their migrations between high-priority summer and high-priority and/or crucial-critical winter ranges in relation to a proposed coal conveyor on the mine plan area. 30 CFR, part 816.97 (c) (2) specifically states that "no new barriers shall be created in known and important wildlife migration routes". Without proper planning this conveyor would represent a barrier to mule deer movement. It is recommended that the company provide for intensive studies along the proposed conveyor route in order to determine patterns of deer movement. This information can then be utilized in conjunction with other known techniques so that deer crossing structures can be designed and properly placed in coordination with construction of the conveyor. The economic burden of the structures will be the responsibility of the company. Such a study for initial placement of crossing structures would require a minimum of two winter periods and should be initiated during the 1979-80 winter. Additionally, follow-up studies must continue for at least two additional winters in order to determine effectiveness and need, if any, for additional crossing structures.

The agricultural lands that lie on the mine plan and adjacent areas attract significant use during the winter and spring periods by mule deer. In the past this use by deer has caused depredation complaints by the landowners and resulted in extraordinary, but unsuccessful attempts to herd the deer from the fields. Depredation payments have also been necessitated to off-set loss of crops to the landowner.

It is recommended that since the company now owns those lands that they arrange for no depredation complaints to be made in the future.] ?

Allowing the deer to feed on the croplands will mitigate for disturbance and loss of their crucial-critical and high-priority habitats that will be occupied by facility developments associated with the project. This will also serve as mitigation for the myriad of negative impacts that will be experienced by local wildlife from the total project.

The mine plan and adjacent areas provide habitats for several of Utah's furbearers and a multitude of non-game animals. For all of these species other than the black-footed ferret there are no recommendations to lessen impacts except those suggestions made earlier and recommended reclamation that will be discussed later.

It is recommended that destruction of any prairie dog colonies be avoided since they could serve as the primary source of prey for potential black-footed ferrets in the area.

No studies concerning furbearers and non-game animals are recommended for purposes of determining mitigations, enhancement projects or reclamation techniques. However, if prairie dog colonies are to be destroyed, the company must provide for a determination of whether or not black-footed ferrets are present. The U.S. Fish and Wildlife Service would be the agency of authority for such a determination. The level of study could become extreme if an intensive survey of colonies to be impacted disclosed physical evidences indicating the presence of black-footed ferrets. If no evidence of black-footed ferrets could be found then it should be recommended that development of the project be allowed.

In situations where wildland habitats have been or will be disturbed, reclamation is required. Also, there are sites where enhancement of wildland habitats through ~~vegetation treatments and/or seedings and~~ transplants of seedlings could benefit wildlife. The attached tables (1 through 10) depict recommended seed lists for several vegetative associations and application rates for rangeland seedings that would benefit wildlife. If seed for a plant species is not available, suitable alternates are also listed. For some vegetation associations, plant species are recommended that will assist in erosion control of special sites such as roadbanks. Seedling transplants from nursery stock or nearby rangelands would also be acceptable for enhancement or

reclamation of wildlands. In either instance, tables 1 through 10 provide lists of vegetation species by habitat association that would benefit wildlife.

Temporary control of rodents may be required to ensure a successful rangeland treatment. It is recommended that the county agent be consulted in this area of concern. Poisoned oats are the most common and acceptable method for rodent control, however, only licensed persons may apply the treatment.

Currently, there are some new concepts in methodology for revegetation that are being successfully implemented in other parts of the nation and world. One promising method is a procedure where a large scoop removes, from a natural and stabilized site, a small area of earth intact with vegetation and subsurface soils for placement on a site to be reclaimed. This same procedure can be utilized when disturbing pristine sites, except that the native vegetation is stored for use in latent reclamation. Another meritorius method for stimulating natural revegetation, in combination with other reclamation techniques, is to plan facility developments so that islands of natural, native vegetation remain. This will allow for natural vegetation to spread from the islands. These techniques can also be useful for enhancement of poor quality sites that currently exist on the mine plan area.

Encapsulation of seed and fertilizer for several releases over a period of years after a single application is a new and possibly advantageous procedure. This technique along with soil stabilizing structures has been successfully used in South Africa. Dr. J. Van Wyk in the Department of Botany at Potchefstroom University in South Africa could provide additional information on this new technique.

There are also new specialized techniques coming to the forefront for stabilization of problem sites such as roadbanks and steep slopes. It is important that these sites be promptly and permanently revegetated in order to reduce siltation into local riverine systems. This will mitigate for damage to aquatic wildlife populations and habitats from siltation. Enhancement of existing problems, sites or reclamation of disturbed sites can mitigate for salt loading of local river systems. It is believed that natural, nonpoint sources represent 50 percent of the salinity in the upper basin of the Colorado River system into which this mine plan area drains.

It is recommended the company make numerous contacts with appropriate agencies, institutions and persons to ensure that enhancement or reclamation projects achieve the required degree of permanency, plant diversity, extent of cover and capability of regeneration to ensure plant succession. Generally speaking, seeding should be accomplished as late in the fall as possible. Seedling transplants need to be coordinated

with local soil moisture conditions. It is paramount that suitable vegetation be maintained and/or reestablished if the life requirements of wildlife are to be satisfied in the postmining period. Success in this area of concern along with cessation of man's disturbances will likely result in a natural reinvasion and the resultant inhabitation by most wildlife species of an impacted site.

It is important to note that enhancement or reclamation projects that are to benefit wildlife must be properly designed so that all the life requirements of the target species are considered in conjunction with forage. Water must be provided or be present and thermal cover along with escape and hiding cover has to be in abundance. Loafing areas and travelways between the many types of use areas must also be provided. In order to meet these goals a considerable degree of consultation will be required between the company and Utah Division of Wildlife Resources.

In instances where revegetation projects are to be planned over coal waste areas, heavy metal uptake by the plants must be evaluated. It is recommended that the company initiate an appropriate long term monitoring program to determine the magnitude and resolutions, if needed, for this problem.

heavy
metal
uptake

There is also some concern for the effects that subsidence may have on sources of water that support existing wildlife populations and their habitats. If hydrologic monitoring shows a significant reduction or total loss of

ground and/or surface waters, the company should immediately consult the Division of Wildlife Resources and the U.S. Fish and Wildlife Service on emergency procedures if needed. A significant local loss of water may demand temporary or permanent alternative sources of water to be established by the company for use by wildlife.

It is recommended that persistent pesticides not be utilized on the mine plan area. Other alternate pesticides or forms of control should be utilized. Additionally, all hazards associated with the mine operation should be fenced or covered to preclude use by wildlife; of special concern would be toxic materials.

Hunting and other state and federal wildlife regulations must be adhered to by sportsmen utilizing the mine plan area.