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Mine file
R. Smith

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE RESOURCES

Norman H. Bangerter
Governor
Dee C. Hansen
Executive Director
Timothy H. Provan
Division Director

Southeastern Region
455 West Railroad Avenue
Price, Utah 84501-2829
801-637-3310

May 9, 1989

Mr. John Niebergall
Ferron District Ranger
Manti LaSal National Forest
P.O. Box 310
Ferron, UT 84523

Ref: UP&L Coal Lease (U-044025)

Attn: Rod Player and Walt Novak

Dear Ira:

In regard to readjustment of Utah Power & Light Company's federal coal lease (U-044025) on East Mountain in the Wilberg/Cottonwood Mine Plan Area, we are concerned about the effects of subsidence on wildlife. As you know, the company has accessed the tract and already removed most of the coal from their existing Wilberg/Cottonwood facilities. Generally speaking, impacts of subsidence on wildlife lie in two general areas: hydrologic ecosystems and terrestrial ecosystems. The following is offered for your information.

Subsidence can result in drying up of impounded water bodies or modification to flows at seeps, springs perennial or even intermittent channels. This can result from the capture in subsidence cracks of water and its resultant migration into other geological strata. Some strata may not allow water to discharge to the surface. Such an impact can have serious consequence to a local area's wildlife in that drinking water may become reduced in value or unavailable to terrestrial animals.

Seeps or springs providing flow during periods when wildlife are present represent a critical valued resource to all of the local area's wildlife. Most wildlife have small and limited home ranges. As a result, when one of these critical valued aquatic resources is lost, the animal does not have the physical capability of "packing his bag" and moving to another area of acceptable habitat. Those few species that have such a physical capability usually find the home ranges in adjoining areas already filled to capacity. It is for that reason that the Division holds firm to the philosophy that each and every spring is a critical resource for wildlife.

In the event that coal mining results in subsidence that impacts the flows at seeps and springs, mitigation is anticipated. An impact would be deemed substantial if the daily flow from a seep or spring was reduced by 50% or

more. Mitigation that would be expected is simply the replacement of the water. Unquestionably, there would be many techniques that could achieve this goal; guzzlers are considered to be the most effective technique. They should be fenced with a 3-rail, pole fence having a maximum height of 42 inches. Clearance between the ground and the bottom pole, as well as space between the top two poles, should be at least 14 inches. This will allow passage of wildlife while disallowing domestic livestock.

Aquatic life, particularly hydrophytes, invertebrates, mollusks and fishes could suffer due to reduced or lost flows. It is even possible that subsidence fractures could expose undesirable mineral deposits to aquatic systems. If such situations were to occur, aquatic and terrestrial animals would either perish or be forced to reduce the size of their use areas. Ultimately, the carrying capacity of the area for wildlife would be reduced.

Increased flows resulting from subsidence that may appear as a benefit could in actuality mean that some other aquatic system has lost flows. However, benefits are possible if subsidence cracks access an isolated hydrologic basin.

Reduced or lost flows in surface water systems and ground water systems can negatively impact terrestrial habitats. Mesic habitats (riparian, wetland and aspen types) associated with those systems could be degraded by the reduction or loss of water. In all ecological situations (desert, submontane and montane) riparian or wetland ecosystems due to their high level of biological productivity, limited acreage and intense use of wildlife, represent a critical valued habitat. Similar comments can be made for the aspen habitat in the montane ecological situation.

Beyond problems associated with aquatic systems, subsidence impacts to terrestrial wildlife and habitats are primarily associated with surface movement of the earth. However, methan gas has been known to travel along subsidence fractures to the surface. The escaping gas affects rhizobium in the soil and can kill adjacent rhizobium dependent vegetation.

The surface cracks alone have little impact on wildlife. It is possible that individual animals could perish in some of these holes or cracks. It has even been suggested that the movement in the earth could collapse the burrows of small rodents, thus trapping and killing them. At this point in time, I doubt whether that is a valid concern in that small rodents are extremely abundant. Since subsidence occurs over such small and limited areas, impacts to rodents would not be of consequence.

Most rodents probably have trouble with their burrows caving at times anyway. Thus, they are adapted to digging around such cave-ins. It is likely that cracks and surface displacement created by subsidence represent escape cover for small animals, and to some degree, access points for burrowing animals.

Subsidence has caused escarpment failures. When raptor nests exist in the escarpments, such failures would be of negative consequence, since raptors typically return to reuse their nests over the years. Where escarpment failure occurs and there are no raptor nests, such failure could create suitable raptor nesting habitat.

Many surface displacement lines from subsidence in Utah's coal mining areas are utilized extensively by big game as travel corridors. These fracture lines, once they become filled, represent a flat trail on which the animals can easily walk around the contours of a mountain or across ridge tops.

It is hoped that the aforementioned information will prove useful to you in coal leasing decisions. If the Division can be of any further service, please don't hesitate to call.

Sincerely,

Larry B. Dalton
Wildlife Program Manager
Resource Analysis/Habitat Protection

LBD/dd

cc: Ralph Miles, DWR
Lowell Braxton, DOGM
CLark Johnson, USFWS
Linda Seibert, BLM