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West Desert Basin

Fishery and Wildlife

14.1 INTRODUCTION

This section describes the West Desert Basin's fish and wildlife resources, discusses existing and potential needs, and presents recommendations. It also describes associated problems and presents alternatives to improve this resource.

All forms of wildlife are dependent upon the availability of water, and are impacted by the quality of the basin's water supply. Clearly, the fisheries are dependent upon the quality of the aquatic habitat. But also, the quality of the riparian zone impacts amphibians, birds, mammals, leeches, mollusks and insects. Riparian vegetation provides food, cover, nesting sites for wildlife and impacts the stream's water temperature and other water quality parameters such as the nutrient load. Consequently, the health of the riparian zone impacts the aquatic zone and influences fish species, composition, population and size. Water development for various uses impacts the hydrologic regimes and associated riparian communities which affects fisheries and wildlife resources. For these reasons, it is important to understand the relationship of fisheries and wildlife to other water related uses.

14.2 SETTING

This is a typical high desert basin, which despite the relatively dry conditions supports a wide and abundant variety of desert wildlife. For the most part the basin is sparsely populated owing primarily to the limited water supply. Recreation has also been limited throughout the basin primarily due to the lack of water and the

remoteness. While the relatively small number of humans living in the basin have limited the impact upon the native environment and the native wildlife, it does not imply that there is not the potential for more significant impacts. The natural environment of the desert basin is a fragile one with the potential for significant impacts from only marginal changes in the environment.

Despite the dry nature of the West Desert Basin, wildlife is common throughout the basin especially along rivers, creeks, wetlands, wooded areas, and within the canyon and mountain areas.

14.2.1 Wildlife Species

Buffalo once grazed the grassier valleys of the eastern and northern portions of the basin. Today a buffalo herd is managed by the state on Antelope Island but the mule deer is now the principal big game animal in terms of numbers in the basin. Mule deer reside primarily in the foothills and mountains above 5,500 feet in elevation. Several antelope herds range in the valleys and plains of the central and western portions of the basin. Elk are well established in the Deep Creek Range and are in the Stansbury Range as well. A few black bears have survived in the mountain areas, and although cougars and bobcats were on the decrease during the first half of the century, it now appears that they are quite plentiful, along with a

significant coyote population. Beavers are rare but marsh areas provide favorable habitat for muskrat. Upland areas support skunks, badgers, and fox. Jack rabbits inhabit range lands and cottontails are common on ranges and around farms. Common rodents include porcupines, ground squirrels, prairie dogs, chipmunks, and pack and kangaroo rats.

Thousands of birds are found in the marshes, in fresh water reservoirs and along the shorelines of the Great Salt Lake. Many migrating waterfowl stop here to rest, to feed or to nest and raise their young. Among the birds found in these waters are: Canadian and snow geese, whistling swans, green-winged teals, pintails, canvasbacks, and mallards. Hat and Carrington Islands and the marshes along the shoreline of the Great Salt Lake provide homes for thousands of gulls, egrets, ibis, comorants, avocets and numerous shorebirds.

There are several species of upland game birds found in the basin, including: mourning dove, sage grouse, blue grouse, ruffled grouse, and chukar. Quail and ringnecked pheasant are found only in localized areas. The native mourning doves are found in considerable numbers. Birds of prey include eagles, hawks, and owls. Scavengers include gulls, hawks, vultures, crows, magpies and jays. Among the numerous songbirds are robins, meadowlarks, sparrows, hummingbirds, warblers and woodpeckers. Snakes are common and include the garter snake, rattlesnake and the gopher snake. Amphibians include toads and frogs which can be found in ponds and streams.

14.2.2 Fisheries

Trout can be found in some of the mountain streams in the Stansbury Mountains, Pilot Mountains, and Deep Creek Mountains. Trout can also be found in Goose Creek and the Raft River. Bonneville cutthroat trout are found in streams on the Deep Creek Mountains and Lahontan cutthroat trout are found in streams in the Pilot Mountains. Bonneville cutthroat trout

and Lahontan cutthroat trout are both listed by the State of Utah as species of special concern. The Division of Wildlife Resources has an active management program for these species that is based on a Conservation Agreement and Strategy prepared in cooperation with the U.S. Fish and Wildlife Service. Rainbow trout are stocked annually into Ophir Creek, South Willow Creek, Clover Creek, Locomotive Springs, Grantsville Reservoir, Settlement Canyon Reservoir, and Vernon Reservoir. Bass have been introduced into the area in a few upland reservoirs and can be found in some valley ponds. Carp can be found in low lying ponds associated with the springs and marshlands. The least chub, a native fish species with state species of special concern status, is found in some springs. The Utah chub and speckled dace are two native fish species which are also found in the basin.

14.2.3 Wildlife Habitat

Protection of flows in perennial and intermittent streams is not only important to native and sport fish, but is also important for maintaining healthy riparian areas. Riparian areas provide crucial habitat and migratory corridors for most species of wildlife that inhabit or pass through the West Desert. Riparian areas also help maintain water quality, moderate temperatures, and provide nutrient input for fish and other aquatic life.



Fish Springs

Wildlife habitat has been classified for a variety of key species according to a relative value system. For each species, four categories have been established. These are: Critical, high priority, substantial-value and limited-value. Distribution maps showing the various habitat classifications have been prepared for mule deer, antelope, elk, chukar partridge, forest grouse, sage grouse and cougar. Golden eagle nest sites have also been identified throughout the West Desert.

Mitigation goals vary with habitat value, wildlife species and project plans. There are several approaches to mitigation. These are listed below in order of importance:

- Avoiding the impact altogether by not taking a certain action.
- Minimizing impacts by limiting the magnitude of an action or its implementation.
- Rectifying the impact by repairing, rehabilitating or restoring the affected environment.
- Compensating for the impact by replacing or providing substitute resources or environment within the same area.

The West Desert provides winter habitat for a variety of raptor species. Bald eagles, rough-legged hawks and peregrine falcons are among the species that migrate into the West Desert valleys during the winter months, and golden eagles and red-tailed hawks are among the year-round residents. The ferruginous hawk, a state threatened species, nests in the West Desert and is particularly sensitive to human disturbance.

Wetlands are limited in the West Desert and provide critical habitat for wildlife. Several areas (Fish Springs, Gandy Marsh, and Leland Harris Marsh) support populations of least chub and western spotted frog, both listed by the State of Utah as species of special concern and are managed under conservation agreements.

The expansive wetlands associated with the Great Salt Lake and many other spring areas found in the basin are utilized heavily by shorebirds and waterfowl for resting, nesting and brood rearing throughout the year. As such, the wetted and surrounding riparian and terrestrial areas are a very important waterbird habitat.

14.3 Organizations and Regulations

The Division of Wildlife Resources has responsibility for the management, protection, propagation and conservation of the state's wildlife resources. Some federal agencies have limited authority for wildlife management on lands which they administer. U.S. Fish and Wildlife Service has authority over management of threatened and endangered species on all lands.

14.3.1 Local

Local irrigation companies control most of the water facilities affecting fish and wildlife. The impact may be either direct or indirect. Early irrigation rights holders were not required to leave water in the streams during times of low flow. Consequently there are no instream flow rights in the basin.

14.3.2 State

The Division of Wildlife Resources has general responsibility for the protection and management of resident fish and wildlife. Prior to 1973, wildlife management in Utah was almost entirely directed toward game species. In 1973, the Division of Wildlife Resources began a nongame wildlife program. Early focus was on raising funds for research and management. In 1975, the Utah State legislature funded a nongame biologist position and Utah became the first western state and only the seventeenth state in the nation with a nongame specialist. The present urban wildlife program has grown out of these nongame activities.

The Division of Wildlife Resources has the lead role in determining potential impacts

(positive and negative) to wildlife resources from water development projects. The role of the Division of Wildlife Resources in water planning is to:

1. Assess water development plans and specifically:
 - a. Identify potential benefits to wildlife and their habitats,
 - b. Identify potential adverse impacts to wildlife and their habitats,
 - c. Recommend a course of action to mitigate project impacts to wildlife and their habitat for the public interest, and
 - d. Recommend termination if mitigation is not feasible or possible.
2. Provide factual information to decision makers regarding consequences of unmitigated and mitigated impacts to wildlife resources.

The Division of Wildlife Resources has prepared a Wildlife Habitat Conservation Plan to guide the actions of citizens, elected officials and the state's governmental agencies. The proposed plan was prepared from satellite photographs of existing vegetation and land use patterns in the counties. These images were processed by computer and field checked for accuracy. The habitat value of each area or "patch" was evaluated according to established criteria. The criteria used to determine habitat value included: size of vegetated patches, diversity of vegetation, level of disturbance, presence or proximity of water, and known use of the patch by wildlife.

The Division of Forestry, Fire and State Lands has the responsibility to manage state lands. Since the state owns all navigable waterways which do not fall under federal jurisdiction, the Division of Forestry, Fire and State Lands has management responsibility for the Great Salt Lake. The division also manages scattered

tracts of land in the basin, some of which support fish and wildlife populations.

14.3.3 Federal

Primary federal responsibility for the protection and management of fish and wildlife populations rests with the U.S. Fish and Wildlife Service. This agency administers the requirements of federal acts relating to fish and wildlife, such as the Endangered Species Act of 1973. Federal Acts relating to fish and wildlife include the Migratory Bird Treaty Act, the Eagle Protection Act, and the Fish and Wildlife Coordination Act.

Some of the basin's fish and wildlife are within national forest and public domain land, managed by the Forest Service and Bureau of Land Management. These areas cover 5,661,560 acres or about 48 percent of the basin (See Figure 3-3).

The Corps of Engineers can also participate in improvement and restoration of fish and wildlife habitat through wetland and river meander restoration, restoration of riparian areas, and stabilization of riverbanks and beds. These efforts are accomplished through the Ecosystem Restoration Authorities and are cost shared with a local sponsor.

14.4 PROBLEMS AND NEEDS

There are not a lot of wildlife problems and needs in the basin. But the problems that do exist are important and are described as follows.

14.4.1 Great Salt Lake Management Plan

At the present time the biggest water-related wildlife problem in the West Desert Basin is the need to establish a comprehensive Great Salt Lake Management Plan that adequately addresses the wildlife issues associated with the Great Salt Lake and the surrounding wetlands. It is estimated that there are approximately 250,000 acres of wetlands surrounding the Great Salt Lake. This is a significant portion of the

state's wetlands. At the same time, the Great Salt Lake is the ultimate receiving waters for storm runoff and wastewater treatment plant effluent from the million plus residents of the Wasatch Front and the Bear River Basin. For years storm runoff has carried toxic pollutants into the lake and wastewater treatment plant effluent has conveyed high nutrient loads into the lake. But there has been only limited scientific analysis of the impact these loads have had upon the Great Salt Lake.

In 1959, when the railroad constructed a causeway to replace the original wooden trestle the north arm of the lake was isolated from the rest of the lake. The resulting effect was the creation of two lakes instead of one. The north arm, isolated from fresh water inflow, has increased in salinity and is now at saturation while the south arm of the lake has freshened up to about 8 percent. Meanwhile, the lake's brine shrimp, which seem to do best at salinities between 13 and 19 percent, are on the decline. The declining brine shrimp population not only affects the brine shrimp industry but impacts wildlife that feed upon the brine shrimp.



Harvesting Brine Shrimp on the Great Salt Lake

14.4.2 Minimum Flows

Many of the streams in the basin are intermittent, exhibiting little or no flow for much of the year particularly in the late summer. Consequently irrigators have never been required to leave water in the channel in times of

low flow. The absence of any minimum stream flow requirements has resulted in several small mountain streams having had most of their flow appropriated for uses outside the stream channel; thus, limiting the existence of aquatic species and reducing riparian corridors.

Some springs and seeps have also been developed in such a way as to preclude their use by the wildlife that had previously relied upon the water. While it may be necessary to develop culinary water sources in such a manner, agricultural or other uses should be developed so they do not deprive the existing wildlife of a necessary water source.

14.4.3 Wetlands and Riparian areas

Protection of marsh and riparian areas is vital in this basin. The scarcity of wetlands and riparian habitat in the West Desert basin makes these lands very valuable. For many wildlife and plant species, these areas are the only habitats where conditions permit their existence. Destruction of habitat is one reason plants and animals become classified as species of special concern.

Data collected over the years indicate the flow from the Locomotive Springs area is being reduced. This may be a natural occurring phenomena or it may be as a result of upstream diversion and development in Curlew valley. The Locomotive Springs area is considered a vital wetlands habitat area. The loss of flow there has the potential of becoming a very important issue. A study should be undertaken to quantify and qualify this problem and make recommendation.

14.5 ISSUES AND RECOMMENDATIONS

14.5.1 Maintaining wildlife watering sources

Issue - Maintenance of surface water sources, for wildlife, may be needed in areas where springs and seeps have been developed and

piped for irrigation, culinary use, or livestock watering.

Discussion - This is a controversial issue. Wildlife managers believe the development of spring water sources has reduced water available for wildlife, and that critical wildlife habitat associated with seeps and springs is lost, as water is developed for other uses. Local farmers on the other hand insist that development of springs and seeps in the area has increased the availability of water for wildlife as well as livestock. They maintain that development of springs and seeps has reduced losses to evaporation, and extends the period of time the source produces water, to the benefit of wildlife as well as livestock.

Recommendation - Where springs and seeps have been developed, landowners and wildlife managers should work together to leave a minimal amount of water available for wildlife use.

14.5.2 Instream flows

Issue - Maintenance of existing flows in streams that currently support Bonneville or Lahontan cutthroat trout.

Discussion - Trout habitat is currently restricted to stream sections above the points of diversion. In most cases, the diversions are located at the mouths of the canyons, as on the Deep Creek and Pilot Mountains. Water development plans that call for moving a diversion upstream would

have a significant impact on the resident trout populations. The movement of a diversion requires the submittal of a change application to the Division of Water Rights. For streams that support a state sensitive trout species, the Division of Wildlife Resources will view the proposal to move a diversion upstream as a significant impact to the natural stream environment.

Recommendation - Where state sensitive trout species habitat are adversely affected applications to move diversion points upstream should be carefully considered.

14.5.3 Wetlands and riparian habitat

Issue - Protection of spring flows which provide water to many small wetland complexes throughout the area.

Discussion - It appears that some springs may be affected by increasing groundwater withdrawal. Reduced flows are changing or have changed the value of prior and existing wetlands for wildlife and some plant species.

Recommendation - Studies need to be undertaken to ensure that groundwater withdrawals are not adversely affecting spring flows nor impairing water rights associated with the existing wetlands. Where the spotted frog and least chub habitat are adversely affected, proposed groundwater withdrawals should not be approved. Current stream diversions and groundwater withdrawals should be assessed.