DESERT TORTOISE HABITAT MANAGEMENT IN SOUTHERN NEVADA

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Abstract: Recent planning and management efforts by the Bureau of Land Management have emphasized desert tortoise (Gopherus agassizii) habitat needs. The current status of the desert tortoise in Nevada is examined and existing management decisions, stipulations and mitigation measures to protect this species are discussed. Current management is serving to maintain the species as a viable component of Nevada's Mojave Desert ecosystem. Management implications for the resource manager are discussed, with recommendations and further research topics suggested.

The desert tortoise (Gopherus agassizii) is a unique terrestrial reptile that inhabits the southwestern desert regions of California, Nevada, Utah, and Arizona in the U.S. and Sonora and Sinaloa in Mexico. In Nevada, the desert tortoise occurs in the Mojave Desert regions of Clark, southern Nye, and Lincoln Counties.

All of Nevada's desert tortoise habitat occurs within the Bureau of Land Management's (BLM) 7.3 million acre Las Vegas District. About 144 square miles of this habitat support densities of 40 or more animals per square mile (Table 1). Estimates put the mean tortoise population at approximately 93,720 individuals. Most population numbers were derived using 30-day census techniques which result in very conservative estimates. Historic information on tortoise distribution in Nevada is limited primarily to personal communication with local residents and a small number of literature citations (e.g. Grant 1936) and museum collections. Starting in 1977, the BLM has contracted numerous inventory efforts to determine distribution and relative densities of the desert tortoise in southern Nevada (Karl 1980a,b,c). Such data collected in 1979 and 1980 were incorporated into BLM's planning for Clark County.

In 1983, a tortoise die-off was identified in Piute Valley in a Nevada Department of Wildlife (NDOW) study by Paul Schneider. BLM and NDOW biologists studied the shell remains of 109 carcasses and concluded that the principal mortality occurred during the late summer or early fall of 1981 and was limited primarily to a relatively small area of the Crescent Peak grazing allotment. Mortimore and Schneider (1983) suggest that the die-off was due in part to the drought of 1981 and that habitat had been adversely impacted by the long-term grazing intensity in the area. In 1985, BLM initiated ephemeral forage production studies for desert tortoise. Transect data for three allotments in Piute Valley indicated a wide range of dry ephemeral forage production (11-303 lbs/ac) depending upon the season and location.

AGENCY POSITIONS

On 14 September 1984, the U.S. Fish and Wildlife Service (USFWS) was petitioned by Defenders of Wildlife, the Environmental Defense Fund, and the Natural Resources Defense Council to list the desert tortoise as an endangered species throughout its remaining range in Arizona, California, and Nevada. The tortoise population in the Beaver Dam Slope area of Utah was federally listed as threatened by the USFWS in 1980. Input was provided to the USFWS by the BLM, NDOW, and other agencies, groups and individuals concerning the status of this species. Berry et al. (1984) submitted an extensive report to the USFWS by the Desert Tortoise Council, a group organized in 1975 to assure continued survival of desert tortoise throughout its existing range. In October 1985, the Nevada State Board of Wildlife Commissioners stated that "data does not support the listing of the desert tortoise as an endangered or threatened species in Nevada" (NDOW 1985). The Endangered Species Act of 1973, as amended, defines an "endangered species" as any species which is in danger of extinction throughout all or a significant portion of its range. A "threatened species" is one that is not in imminent danger of extinction but is likely to become endangered within the foreseeable future. On 26 October 1985, the Commissioners stated that desert tortoise should continue to receive priority management consideration on public lands in concert with the multiple use management concept and that NDOW should continue to work with land management agencies to minimize existing and potential problems.

The BLM and NDOW recognize the desert tortoise as a sensitive species, because its range is fairly restricted and any appreciable reduction of populations,

Table 1. Tortoise densities and population estimates in Nevada.

Tortoise density (per sq mi)	Total area (sq mi)	Population estimate	
		Minimum	Maximum
Under 20	6,015	6,015	120,300
20-40	637	12,740	25,480
40-90	113	4,520	10,170
90-175	31	2,790	5,425
Total	6,796	26,065	161,375

extant habitat, or deterioration of habitat condition could necessitate threatened or endangered listing. BLM's fundamental objective is to maintain or increase current population levels of this sensitive animal through early habitat protection and enhancement.

On 18 September 1985, the USFWS in Washington issued a finding (Federal Register 50(234), 5 December 1985) that listing of the desert tortoise throughout its range is warranted, but precluded by other pending proposals of higher priority. Additional data are being gathered, existing data are being further evaluated, and expeditious progress is being made to list or delist species. When presently available data need supplementation, the species receives a lower priority for listing than a species with complete data, depending on the degree of threat facing a species. The USFWS feels a "warranted but precluded" finding is appropriate for the desert tortoise while developing the data necessary to support a proposal.

HABITAT MANAGEMENT ACTIONS

Because the desert tortoise is distributed on creosote and blackbrush-dominated flats, valleys, and bajadas below 4,500 ft. in Nevada, many man-induced activities have the potential to adversely impact this species' habitat. The BLM manages wildlife habitat values to ensure their consideration in land use planning and decision-making. Wildlife benefits are often realized by incorporating special wildlife provisions in other program management plans, developing stipulations and mitigative measures for wildlife, and where necessary, providing habitat rehabilitation following development. Protective mechanisms are in place to prevent deterioration of desert tortoise habitat on the Las Vegas District, and special consideration is being given desert tortoise to prevent the species from becoming threatened or endangered.

Off-Road Vehicle (ORV) Use

Coordinated Resource Management and Planning (CRMP) was used to recommend the ORV designations for the 3,097,131 acre Stateline-Virgin Valley Planning Area of the Las Vegas District. CRMP is a resource planning and problem-solving process based upon the philosophy that resource conflicts can best be solved on a local level by direct communication among interest groups and individuals. The eight-month CRMP effort culminated in issuance of ORV designations for Clark County in September 1984. Depending upon the area, ORV use is limited in 629,726 acres of crucial desert tortoise habitat to: (1) designated roads, (2) non-speed competitive and non-competitive use, (3) non-competitive use solely, or (4) existing roads, trails, courses, and sand washes. Limitations were also imposed in these areas on season of use, type of use or number of laps, number of entrants, and location of pitting areas. Off-road vehicle designations for the 3,416,393 acre Caliente Planning Area of the Las Vegas District were issued in December 1984. ORV use is restricted to existing roads and trails within 51,360 acres of crucial desert tortoise habitat.

Lands and Minerals Actions

In 1982, inventories to identify and mitigate impacts of powerline construction on desert tortoise led to development of mitigation measures for the species. Stipulations have been incorporated into right-of-way grants, mining plans, and mineral leases. For example, desert tortoise stipulations for the Intermountain Powerline Project transmission line project were developed which provide for: (1) availability of an experienced tortoise biologist during new road construction and tower site clearing and at pulling and tensioning sites, (2) locating, flagging, and avoiding tortoise burrows prior to initiation of surface disturbing activities, (3) proper handling and moving of tortoises encountered, and (4) briefings for construction personnel on the status and laws pertaining to the tortoise.

Range Management

The northern limit of desert tortoise in Nevada is within the Las Vegas District's Caliente Resource Area. The Final Caliente Livestock Grazing Management Environmental Impact Statement, issued in

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