2-21-94-F-531

SUMMARY
BIOLOGICAL OPINION FOR THE BEAVER DAM ACCESS PROJECT

Date of Opinion: 20 December 1994

Action Agency: Bureau of Land Management, Shivwits Resource Area, St. George, Utah

Project: Construction of fences and post and cable barriers, closure and rehabilitation of roads, removal of one cattleguard, installation of one cattleguard, and installation of signs on the Beaver Dam Slope for the purpose of limiting access and increasing protection of desert tortoise habitat.

Listed Species Affected: Mojave population of the desert tortoise (*Gopherus agassizii*), a federally listed threatened species.

Biological Opinion: Non-jeopardy

Incidental Take Statement:

Level of take anticipated: Anticipated take includes no more than one desert tortoise injured or killed as a result of project activities, and no more than ten desert tortoises and two clutches of desert tortoise eggs as a result of excavation of eggs and occupied burrows and moving of animals and eggs out of harm's way.

Reasonable and Prudent Measures: The biological opinion presents three measures for reducing incidental take. Implementation of these measures through the terms and conditions are mandatory.

Terms and Conditions: Twenty-two mandatory terms and conditions are included to implement the reasonable and prudent measures. They include a variety of measures to reduce incidental take of desert tortoises, such as minimization of disturbance to desert tortoise habitat, avoidance of taking individual animals (but moving animals out of harm's way when necessary), education of project employees to be aware of the desert tortoise and the terms and conditions of the biological opinion, on-site biological monitors, a preconstruction survey, and trash abatement.

Conservation Recommendations: The Bureau should monitor any relocated desert tortoises to improve our knowledge of relocation techniques, and work with the landowner to the south of the project area to install a desert tortoise barrier on the existing barbed wire fence that runs east from the cemetery along the boundary between public and private lands.

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December 20, 1994

In Reply Refer To:
AESO/SE
2-21-94-F-531

TO: Area Manager, Shivwits Resource Area, Bureau of Land Management, St. George, Utah

FROM: Acting State Supervisor

SUBJECT: Biological Opinion for the Beaver Dam Access Project

This biological opinion responds to your request for formal consultation with the Fish and Wildlife Service (Service) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request was dated 23 November 1994, and received by us on 28 November 1994. At issue are impacts resulting from proposed construction of fences and gates, installation of signs, and closure and rehabilitation of roads on the Beaver Dam Slope, Mohave County, Arizona, that may affect the Mojave population of the desert tortoise (*Gopherus agassizii*), a federally listed threatened species.

This biological opinion was prepared using information from the following sources: your 23 November 1994 request for consultation; the environmental assessment/biological evaluation for the project [Bureau of Land Management (Bureau) 1994]; informal consultation between our staffs; and our files.

Biological Opinion

It is the opinion of the Service that the proposed action is not likely to jeopardize the continued existence of the desert tortoise and is not likely to destroy or adversely modify desert tortoise critical habitat.

Description of the Proposed Action

The proposed action would redirect access on the southern Beaver Dam Slope for the purpose of preventing illegal dumping, improving public safety by reducing access to hazardous materials sites, and reducing adverse effects to desert tortoises and their habitat (Bureau 1994). Construction would begin upon signature of a decision record

and completion of all environmental analyses, section 7 consultation, and inventories and clearances. The following project features are proposed (Bureau 1994)(Figure 1):

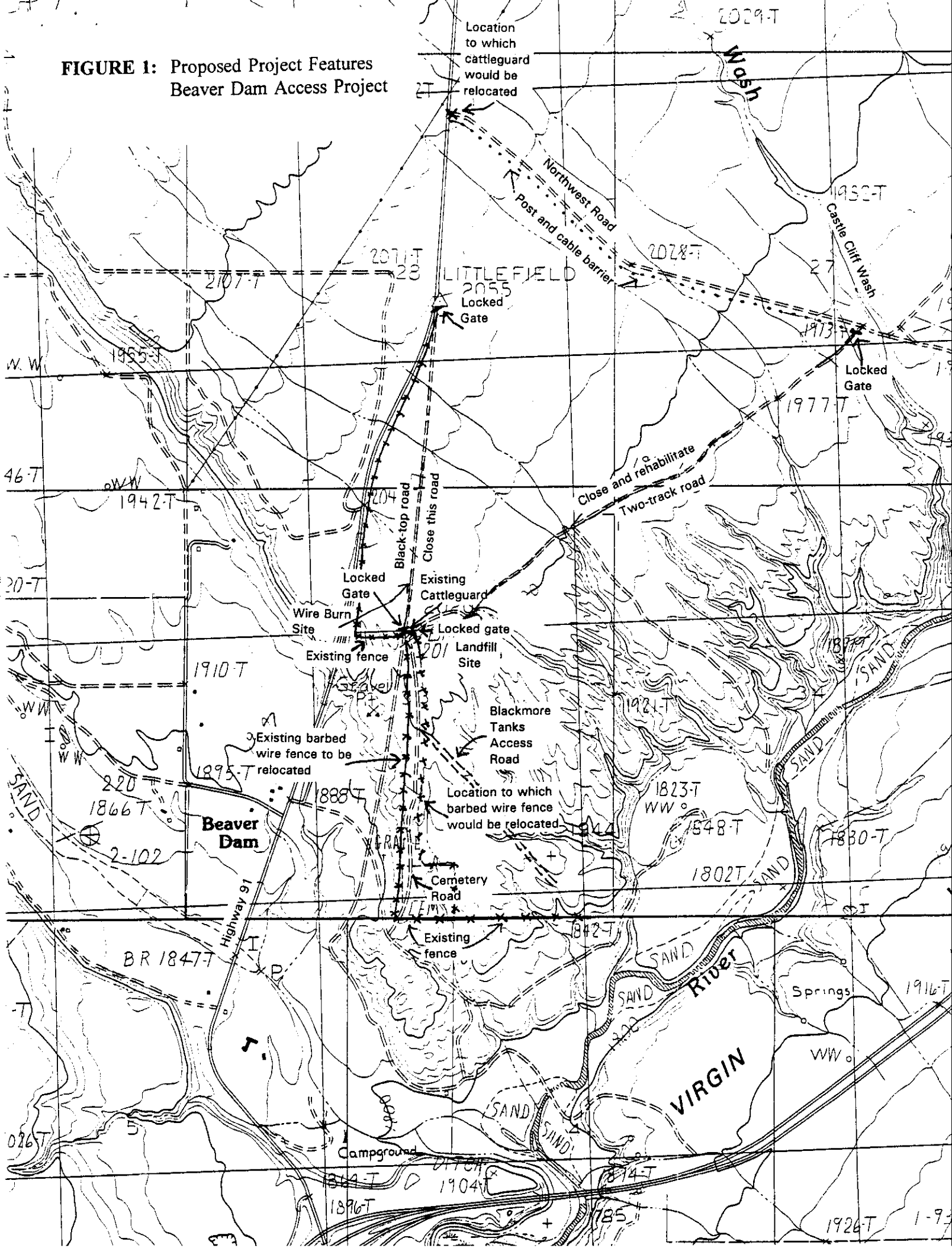
1. **Construction of a six-feet high by 500-feet long chain-link fence with a locking gate north and east of the intersection at the top of the dugway above the Arizona Department of Transportation yard in T41N, R15W, SE1/4NW1/4 of Section 33 (Figure 1).** On the north end, this fence would tie into the existing four-strand barbed wire fence that runs east from Highway 91 to the existing cattleguard at the top of the dugway. The chain link fence would then run north 50 feet, turn east for approximately 100 feet, cutting off the old blacktop road, and then turn south for approximately 300 feet. At the south end, the chain link fence would tie into the relocated barbed wire fence (see project feature #2). A locking gate would be installed across the southern end of the "two-track road" to provide controlled access to the landfill site for hazardous waste cleanup, monitoring, rehabilitation work, and fire suppression. Large tires or rocks would be temporarily placed in front of this gate to further discourage vehicular access. A tortoise-proof barrier would be installed along the bottom of the fence. Stiles or people gates to allow access by foot would be installed at the north and south ends of the fence where it would tie into the barbed wire fences.

2. **Relocation of approximately 3,600 feet of 4-strand barbed wire fence from just west of to just east of the north-south "Cemetery Road" in the center of T41N, R15W, section 33, and construction of a locking gate at the intersection with the Blackmore Tanks Access Road (T41N, R15W, NW1/4SE1/4, section 33)(Figure 1).** The existing fence would be dismantled and installed approximately six to eight feet east of and parallel to the Cemetery Road. The fence would tie into the chain link fence on the north end (see action #1) and into an existing barbed wire fence that runs along the public/private boundary south of the cemetery. A tortoise-proof barrier would be installed along the bottom of the relocated fence.

3. **Closure and rehabilitation of approximately 6,000 feet of two-track dirt road from the landfill site northeast to the West Bank of Castle Cliff Wash, and closure of approximately 4,000 feet of old blacktop road from the existing cattleguard on Figure 1 to its intersection with Highway 91 in T41N, R15W, NW1/4SE1/4 of section 28 (sections of road to be closed are shown in red on Figure 1).** The two-track road would be ripped and bermed to prevent its use, and the ground allowed to return to a natural state. The blacktop road would not be ripped, but a chain link fence (action #1) would prevent access to it on the south. On the north end, a locking gate would be installed to restrict access to authorized personnel, including utility company personnel (for inspection and maintenance of an existing transmission line) and the Bureau.

4. **Construction of up to 6,000 feet of a post and cable barrier along the south edge of the "Northwest Road" in T41N, R15W, sections 27 and 28, from Highway 91 to the 2-track road described in action #3.** The barrier would tie into the 4-strand barbed wire fence on the east side of Highway 91. The purpose of this

FIGURE 1: Proposed Project Features
Beaver Dam Access Project



barrier would be to prevent off-road vehicular use south of the Northwest Road. At a minimum, about 250 feet would be constructed west from Castle Cliff Wash. The remainder would be completed as funding becomes available.

5. **Installation of signs at location A, along the Cemetery Road, and along the Northwest Road.** These signs would include "Road Closed", "Area Closed", "No Off-Road Vehicles", and "Danger - Unauthorized Personnel Keep Out!", as well as interpretive signs describing desert tortoises and the reasons for the access restrictions. Signs would be installed that explain where access to the north bank of the Virgin River and to Beaver Dam Mountains is located. "Road Closed" signs would be installed at each end of the two-track road, on the fence at the blacktop road, on the gate across the south end of the two-track road, and on the gate across the north end of the blacktop road. "Area Closed" and "No Off-Road Vehicles" signs would be attached every 500 feet along the relocated 4-strand barbed wire fence east of the Cemetery Road, and installed on posts every 500 feet along the post and cable barrier along the Northwest Road. "Danger - Unauthorized Personnel Keep Out!" signs would be installed on the gate on the south end of the two-track road, on the gate at the north end of the blacktop road, on the fence across the south end of the blacktop road, and at the people gates or stiles.

6. **Relocation of the existing cattleguard to the intersection of the Northwest Road and Highway 91.** The chain link fence and the relocation of the barbed wire fence along the Cemetery Road would eliminate the need for this cattleguard at its present location. Due to expected increase in traffic along the Northwest Road, the existing gate there would be replaced by the cattleguard. Should the existing cattleguard not be adequate, a new cattleguard could be installed.

Final designs and project locations would be subject to revision in response to public comment and resource clearances. Most work would be accomplished by hand; however, a truck-mounted auger could be used to auger post holes, a backhoe could be used to relocate the cattleguard (action #6), and a front-end loader or grader could be used to rip and berm the two-track road. A cement truck could be used for construction of post footings. Materials would be hauled to the site along existing roads. Maintenance of the facilities would occur as needed.

The Bureau proposes the following measures to reduce the effects of the project on the desert tortoise and its habitat:

1. If a desert tortoise wanders onto the site during this project, all activity will cease until the tortoise wanders out of harm's way on its own volition or a qualified biologist can move it safely.

2. If the project occurs between March 15 and October 15, a desert tortoise biologist will be on-site during construction to ensure that tortoises are not inadvertently harmed. All sheltersites will be flagged and avoided. Any sheltersite that will be destroyed will be excavated by a qualified biologist to ensure that no tortoise is trapped or crushed.

3. A desert tortoise biologist would be responsible for informing all employees working on this project about tortoises (including information provided by the Service and the Bureau on the life history of the tortoise, its status, protocols for dealing with tortoises if and when they are encountered, and the definition of take).

4. Desert tortoises encountered during pre-work clearances or during project activities will be relocated by the qualified biologist a minimum of 150 yards into an off-site burrow on public land. If a burrow is not available, one must be constructed by the biologist.

5. All activity associated with the rehabilitation of the two-track road will occur within the disturbed area. Fence and barrier construction will be restricted to an area within 12 feet of the existing roads.

6. At no time shall equipment fluids be dumped on public lands. All accidental spills must be reported to the Bureau and be cleaned up immediately, using the best available practices according to the requirements of the law. All spills of federally or State-listed hazardous materials that exceed reportable quantities shall be promptly reported to the appropriate State agency and the Arizona Strip District of the Bureau.

7. No surface disturbance shall be authorized that would impact any threatened or endangered species prior to compliance with the Act.

8. Construction-related traffic shall be restricted to routes approved by the authorized officer. New access roads or cross-country travel will not be permitted unless prior written approval is given by the authorized officer. Authorized roads shall be rehabilitated or maintained when construction activities are complete as approved by the authorized officer.

9. Specific sites as identified by the authorized officer (e.g., areas with threatened and endangered species or fragile watersheds) where construction equipment and vehicles shall not be allowed, shall be clearly marked on-site by the holder before any construction or surface disturbing activities begin. Construction personnel shall be well trained to recognize these markers and understand the equipment movement restrictions involved.

10. Construction sites shall be maintained in a sanitary condition at all times. Waste materials at those sites shall be placed in covered receptacles to avoid attracting predators of desert tortoises and disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

11. No dogs will be allowed on-site during construction.

12. No discharge of firearms will be allowed on-site during construction.

Species Account

On 4 August 1989 the Service published an emergency rule listing the Mojave population of the desert tortoise as endangered. In a final rule dated 2 April 1990, the Service determined the Mojave population of the desert tortoise to be threatened. The desert tortoise is a large, herbivorous reptile found in portions of the California, Arizona, Nevada, and Utah deserts, and in Baja California Sur, Sonora, and northern Sinaloa, Mexico (Germano et al. 1994, Crumly and Grismer 1994). The threatened Mojave population is found in California, Nevada, and north of the Colorado River in Arizona and southwestern Utah. In Arizona, desert tortoises of the Mojave population are most active during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and after summer monsoons. Desert tortoises spend the remainder of the year in burrows, escaping the extreme weather conditions of the desert.

The Service recently issued a final recovery plan for the Mojave population of the desert tortoise (Service 1994). This plan proposes the establishment of 14 Desert Wildlife Management Areas (DWMAs) in six recovery units. Land management in DWMAs would target the reduction or elimination of those factors that have caused declines in desert tortoise populations. The boundaries of proposed DWMAs are not precisely defined in the draft plan, but would be established by the Bureau and other land management agencies in coordination with the Service, Arizona Game and Fish Department, and others. The proposed project area will likely be included in the Beaver Dam Slope DWMA in the northeastern Mojave recovery unit.

The Service designated critical habitat for the Mojave population of the desert tortoise in a Federal Register notice dated 8 February 1994 (59 FR 5820-5846 - also see corrections at 59 FR 9032-9036). Project features located in T41N, R15W, sections 27 and 28 are within desert tortoise critical habitat.

Further information on the range, biology, and ecology of the desert tortoise can be found in Burge and Bradley (1976), Luckenbach (1982), Turner et al. (1984), Weinstein et al. (1987), various papers by J.R. Spotila and others in Herpetological Monographs published 30 June 1994, various papers in Bury and Germano (eds.)(1994), and Service (1994).

Environmental Baseline

The project area is located in the northeastern Mojave Desert on the southern end of the Beaver Dam Slope east of Highway 91 and northeast of Beaver Dam, Arizona. Vegetation of the area is typical of the creosote bush series of Mohave desertscrub (Turner 1982). Creosote (*Larrea tridentata*) and bursage (*Ambrosia dumosa*) are the dominant perennial plants. The area has been disturbed by a variety of human uses or human-caused impacts, including grazing, fire, off-highway vehicle use, a closed landfill site, a site where insulation has been burned from insulated copper wire, and illegal dumping.

Project features within sections 27 and 28 of T41N, R15W are in designated critical habitat for the desert tortoise. These lands are also designated as category 1 desert tortoise habitat (Bureau 1994). Category 1 lands are those areas essential to supporting large, viable populations of desert tortoises at medium to high densities (Spang et al. 1988). Monitoring of desert tortoise population numbers, and research into tortoise ecology and physiology has occurred in section 27 (Littlefield study plot). Numbers of tortoises registered on the one-square mile study plot is relatively stable and has varied from 46 to 49 during censuses in 1981, 1989, and 1993 (Corn 1994; T. Duck, Bureau of Land Management, St. George, Utah, pers. comm. 1994). No statistically significant declines have been noted in section 27, but more carcasses than expected have been found recently suggesting increased mortality (Duck and Snider 1988, Brussard et al. 1994).

Project features in sections 33 and 34 of T41N, R15W are not in critical habitat, but are within category 3 desert tortoise habitat. Category 3 habitats are those which contain low to medium densities of desert tortoises, but are not essential to the maintenance of viable populations (Spang et al. 1988).

Recent desert tortoise surveys in the southern half of section 33 and the northern half of T40N, R15W, section 4 indicate densities of tortoises in this area are low (Topham 1994). During these surveys, a single live tortoise was found immediately south of the cemetery and east of the Cemetery Road on private land. Based on limited surveys, the southeastern quarter of section 33 probably supports low to moderate densities of tortoises, while tortoises are probably rare or absent in the southwestern quarter (Topham 1994; T. Duck, pers. comm. 1994). Topham (1994) located scat, burrows, and a tortoise carcass in the southeastern quarter but did not find any tortoise sign in the southwestern quarter. Tortoise habitat in the southwestern quarter of section 33 has

been adversely affected by a variety of human activities such as rural development, road construction, and off-highway vehicle use.

Effects of the Proposed Action on the Listed Species

The Desert Tortoise Recovery Team found that "the most serious problem facing the remaining desert tortoise populations in the Mojave region is the cumulative load of human and disease-related mortality accompanied by habitat destruction, degradation, and fragmentation." Desert tortoises are collected for food and pets (Ditzler 1991, Howland 1989), intentionally or accidentally shot (Berry 1990, as amended), killed or injured by off-highway vehicles (Luckenbach 1975, Berry 1990, as amended), and killed or injured by human-caused fire (T. Esque, National Biological Survey, St. George, Utah, pers. comm. 1994). Release of captive tortoises on the Beaver Dam Slope and elsewhere has been implicated in the spread of upper respiratory tract disease, a very serious chronic disease caused by *Mycoplasma agassizii* that is a major contributing factor in the decline of tortoise populations (Brown et al. 1994, Service 1994). In addition, raven (*Corvus corax*) populations and predation by ravens on desert tortoises is elevated near towns, human habitations, and other areas where refuse and water are available (Knight et al. 1993, Bureau 1990). Many types of human-caused activities, such as off-highway vehicle use, livestock grazing, and fire also cause habitat destruction and degradation that further adversely effect tortoise populations (see Appendix D of Service 1994).

The net effect of implementing the proposed action is beneficial to desert tortoise populations and desert tortoise habitat because closure and gating of the two-track and blacktop roads, construction of a post and cable barrier along the Northwest Road, and relocation of the barbed wire fence to the east side of the Cemetery Road would reduce access to important desert tortoise habitat. Reduced access is expected to result in reduced levels of the human-caused activities and associated effects discussed above that have contributed to the decline of tortoise populations and destruction of habitat.

The project area may be included in the Beaver Dam Slope DWMA. The proposed actions would implement, in part, the following recommended management actions for DWMAs as described in the Desert Tortoise (Mojave Population) Recovery Plan (Service 1994): 2a. (control vehicular access in DWMAs), 2c. (restore disturbed areas), and 2d. (sign and fence DWMAs as needed).

Installation of a tortoise barrier along the relocated barbed wire fence east of the Cemetery Road would restrict movement of tortoises. Habitat to the west of the Cemetery Road is more heavily disturbed than habitat east of the road. Highway 91 and the community of Beaver Dam lie west of the road; and a golf course lies to the south of the cemetery on private lands. Plans exist to enlarge the golf course up to the existing fence on the south side of the cemetery. Although few tortoises are likely to occur west of the Cemetery Road or south of the cemetery (Topham 1994; T. Duck, pers. comm.

1994), these animals are subject to being crushed on the highway, collected, or may be adversely affected by other human activities.

The tortoise barrier along the Cemetery Road would inhibit movement of desert tortoises from the west side of the Cemetery Road to the less-disturbed habitat east of the road. Although no tortoises are known to inhabit the area between the Cemetery Road and Highway 91, the area has not been intensively surveyed. Because of the small size of the area and high levels of human disturbance, any tortoises in this area are not likely to survive for long. With the construction of the tortoise barrier, this area will likely be lost as tortoise habitat. However, the tortoise barrier will likely reduce overall loss of tortoises, because movement of animals from the east side of the Cemetery Road into the Beaver Dam and Highway 91 area, where their chances of survival are low, would be eliminated or much reduced.

The tortoise located by Topham (1994) on private lands just south of the cemetery is near the proposed southern end of the tortoise barrier. This animal could conceivably become trapped on the west side of the barrier where its chances of survival would be low.

Desert tortoises could be encountered during project construction or maintenance. Project activities, such as ripping of the two-track road, fence relocation, and installation of the post and cable barrier, could result in incidental injury or crushing of desert tortoises. Desert tortoises could also be collected by project personnel. Furthermore, refuse left by work crews could attract desert tortoise predators, such as common ravens (*Corvus corax*), and cause elevated mortality in local desert tortoise populations.

Habitat disturbance from construction activities could result in destruction or damage to tortoise cover sites, and crushing of shrubs that are important as tortoise forage and cover. Disturbance of surface soils could also result, causing destruction of cryptogamic crusts, erosion, and adverse effects to the vegetation community (see Appendix D of Service 1994).

The Bureau has proposed a worker education program, relocation of tortoises that are in harm's way, strict control of waste materials and hazardous materials, an on-site biologist during project activities scheduled for the period between March 15 and October 15, and other measures that should minimize take of desert tortoises.

The Service believes the effects described above are neither likely to jeopardize the continued existence of the desert tortoise nor likely to cause adverse modification or destruction of critical habitat. We present this conclusion for the following reasons:

1. The Bureau's proposed action is consistent with recommendations of the Desert Tortoise (Mojave Population) Recovery Plan and should have a net beneficial effect on tortoise populations and habitat quality in the southern Beaver Dam Slope area.

2. The Bureau's project description includes features to minimize take of desert tortoises and mitigate the direct and indirect effects of the proposed action on the desert tortoise and its critical habitat.

Cumulative Effects

Cumulative effects are those effects of future non-Federal (State, local government, and private) actions that are reasonably certain to occur in the project area. Future Federal actions would be subject to the consultation requirements established in section 7 of the Act and, therefore, are not considered cumulative to the proposed project. Due to the extent of the lands in this area that are administered by the Bureau, many of the actions that are reasonably expected to occur within the vicinity of the project site would be subject to section 7 consultations. However, lands immediately to the south and west of the project area in the vicinity of Beaver Dam and Littlefield are privately owned and continued development of these non-Federal lands is anticipated. Expansion of the Beaver Dam golf course onto lands immediately south of the cemetery site is proposed (Topham 1994) and may result in further isolation of habitat west of the Cemetery Road. Loss of desert tortoise habitat and possible take of tortoises as a result of golf course expansion may be addressed through a section 7 consultation with the Army Corps of Engineers on issuance of a section 404 permit for proposed activities in Beaver Dam Wash. Non-Federal actions that may result in a take of desert tortoises require a section 10(a)(1)(B) permit from the Service. A landowner in the area has expressed an interest in obtaining a section 10(a)(1)(B) permit for development of approximately 2,000 acres of private lands south of Beaver Dam. Cumulative impacts of future State and private projects will be addressed through the section 10(a)(1)(B) permit process.

Incidental Take

Section 9 of the Act prohibits the take of listed species without special exemption. Taking is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct. Harm is further defined at 50 CFR 17.3 as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering." "Harass" is defined in the same regulation as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." Under the terms of sections 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to and not intended as part of the agency action is not considered to be prohibited under the Act provided that such taking is in compliance with this incidental take statement. Reasonable and prudent measures, as well as terms and conditions in this biological opinion are non-

discretionary, and must be undertaken by the agency or made a binding condition of any grant or permit, as appropriate.

This biological opinion anticipates the following forms of take:

1) One desert tortoise in the form of mortality or injury resulting from project activities.

2) Ten desert tortoises through harassment associated with excavation of occupied burrows, relocation of desert tortoises out of harm's way, and monitoring of relocated tortoises.

3) Two clutches of tortoise eggs through harassment associated with excavation of nests and moving eggs out of harm's way.

This biological opinion does not authorize any form of take not incidental to implementation of the proposed action for the Beaver Dam Access Project as described in Bureau (1994). If the incidental take authorized by this opinion is met, the Bureau shall immediately notify the Service in writing. If the incidental take authorized by this opinion is exceeded, the Bureau must immediately reinitiate consultation with the Service to avoid a violation of section 9 of the Act. In the interim, the Bureau must cease the activity resulting in the take if it is determined that the impact of additional taking will cause an irreversible and adverse impact on the species. The Bureau should provide an explanation of the cause of the taking.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental take authorized by this biological opinion:

1. Worker education programs, defined construction areas, and well-defined operational and monitoring procedures shall be implemented.

2. Activities that may result in a take of desert tortoise shall be preceded by preconstruction desert tortoise surveys and, if activities occur during periods when desert tortoises are active, project activities shall be monitored by an on-site qualified biologist(s). Measures shall be taken to avoid a take of desert tortoises found in project areas.

3. Attraction of common ravens and other potential desert tortoise predators to the project area shall be reduced to the maximum extent possible.

Terms and Conditions

The following terms and conditions are established to implement the reasonable and prudent measures described above. Terms and conditions 1.a., 1.b., 1.d., 1.e., 1.f., 1.g., 1.h., 1.k., 1.l., 2.a.2., 2.b.1., and 3.a. are adapted from the Bureau's project description (Bureau 1994), but contain slight modifications or added detail. The tortoise barrier design described in 1.n. is consistent with the Bureau's design standard for desert tortoise barriers [Attachment A to Bureau (1994)].

1. The following terms and conditions implement reasonable and prudent measure number 1:

a. If a desert tortoise is found on a project site, all activity shall cease until the tortoise moves out of harm's way on its own volition or is relocated pursuant to terms and conditions 2.c., d., and e.

b. A qualified desert tortoise biologist (a biologist approved by the Bureau) shall be responsible for informing all employees working on this project about tortoises (including information provided by the Service and the Bureau on the life history of the tortoise, its status, protocols for dealing with tortoises if and when they are encountered, terms and conditions in this biological opinion, and the definition of and penalties for take). Personnel shall be advised that handling, harming, or harassing desert tortoises without specific authorization is a violation of the Act. Personnel shall also be advised of the penalties of up to $200,000 and six months in prison for taking a listed species without a permit. Handouts summarizing this information shall be provided to all personnel implementing actions that may result in a take of desert tortoise

c. The Bureau shall designate a "field contact representative" (FCR) who shall be responsible for overseeing compliance with these terms and conditions and for coordination on compliance with the Service. The FCR, authorized biologist(s) (see term and condition 2.c. for definition), and qualified biologist(s) shall have the authority and responsibility to halt all project activities that are in violation of these terms and conditions. The FCR shall have a copy of all terms and conditions.

d. All activity associated with the rehabilitation of the two-track road shall occur within disturbed areas. Fence and post and cable barrier construction shall be restricted to an area within 12 feet of existing roads.

e. At no time shall equipment fluids be dumped on public lands. All accidental spills must be reported to the Bureau and be cleaned up immediately, using the best available practices according to the requirements of the law. All spills of federally or State-listed hazardous materials that exceed reportable quantities shall

be promptly reported to the appropriate State agency and the Arizona Strip District of the Bureau.

f. No surface disturbance shall be authorized that would impact any threatened or endangered species prior to compliance with the Act.

g. Construction-related traffic shall be restricted to routes approved by the Bureau. Neither new access roads nor cross-country travel shall be permitted unless prior written approval is given by the Bureau. Authorized roads shall be rehabilitated or maintained when construction activities are complete as approved by the Bureau.

h. Specific sites as identified by the Bureau (e.g., areas with threatened and endangered species) where construction equipment and vehicles shall not be allowed, shall be clearly marked on-site before any construction or surface disturbing activities begin. Construction personnel shall be trained to recognize these markers and understand the equipment movement restrictions involved.

i. Pending permission of the landowner, the Bureau shall relocate the desert tortoise located at T40N, R15W, NE1/4NW1/4NE1/4 section 4, as described in Topham (1994). The tortoise shall be relocated to suitable habitat on public lands east and possibly north of the relocated barbed wire fence in accordance with the attached handling protocol.

j. A 100 percent desert tortoise survey of public lands west of the Cemetery Road, east of Highway 91, and south of the existing cattleguard in T41N, R15W, section 33 shall be conducted by a qualified biologist immediately following installation of the tortoise barrier on the relocated barbed wire fence. Any tortoises found in this area shall be relocated to suitable habitat east and possibly north of the relocated barbed wire fence in accordance with the attached handling protocol.

k. No dogs shall be allowed on-site during construction.

l. No discharge of firearms shall be allowed on-site during construction.

m. Vehicle parking and equipment staging areas shall be located in previously disturbed areas to the maximum extent feasible.

n. Project areas shall be confined to the smallest practical area, considering topography, project needs, safety considerations, and other limiting factors. Any flagging or stakes used to delineate project boundaries shall be removed after construction is complete.

o. The desert tortoise barrier proposed for installation along the relocated barbed wire fence (Figure 1) and the chain link fence shall consist of wire mesh with

maximum mesh size of 1-inch (horizontal) by 2-inch (vertical) fastened securely to the posts and bottom wire of the relocated fence. The hardware cloth shall extend at least 18 inches above the ground and 12 inches below the surface of the ground. Where burial of the wire mesh is not possible, the lower 12 inches shall be folded outward and fastened to the ground so as to prevent desert tortoise entry.

p. Within 90 days after completion of construction, the Bureau shall submit a monitoring report to the Arizona Ecological Services State Office. The report shall briefly document the effectiveness of the desert tortoise mitigation measures, actual acreage of desert tortoise habitat disturbed, the number of desert tortoises excavated from burrows, the number of desert tortoises moved from construction sites, and information on individual desert tortoise encounters as stipulated in term and condition 2.e. The report shall make recommendations for modifying or refining these terms and conditions to enhance desert tortoise protection and reduce needless hardship on the project proponent.

2. The following terms and conditions implement reasonable and prudent measure number 2:

a. If ground-disturbing activities occur between 15 October and 15 March, one of the following two measures shall be implemented:

1. A qualified biologist (a knowledgeable desert tortoise biologist approved by the Bureau) shall perform a preconstruction survey of all project areas where ground-disturbing activities are proposed during the period between 15 October and 15 March. Surveys shall conform to Service protocol (Fish and Wildlife Service 1992), except that zone of influence surveys will not be necessary. No ground-disturbing activities shall occur prior to preconstruction surveys, and no ground-disturbing activities shall occur in areas in which preconstruction surveys have not been conducted. If desert tortoises are found above ground or within burrows, or desert tortoise eggs are found in areas to be disturbed by construction activities, the qualified biologist shall work with the construction supervisor to take steps, as necessary, including altering project boundaries, to avoid damaging a burrow or disturbing a desert tortoise or desert tortoise eggs. If disturbance of desert tortoises or eggs is unavoidable, they shall be relocated pursuant to terms and conditions 2.c., 2.d., and 2.e. Any tortoises or tortoise eggs found in the area west of the relocated barbed wire fence and south of the existing cattleguard shall be relocated to the area east and possibly north of the relocated fence pursuant to terms and conditions 2.c., 2.d., and 2.e.

2. A qualified biologist shall be on-site during all activities that may result in the take of desert tortoises and occur between 15 October and 15 March. The qualified biologist shall survey the project sites within 24 hours of disturbance and monitor construction activities to ensure compliance with these terms and

conditions. All shelter sites shall be flagged and avoided, to the extent possible. If disturbance of a shelter site is unavoidable, it shall be excavated by an authorized biologist. When evaluating the potential effects of project activities, the biologist should consider that burrows may be as long as 30 feet. If a desert tortoise or eggs are found in the burrow they shall be relocated pursuant to terms and conditions 2.c., 2.d., and 2.e.

b. If ground-disturbing activities occur from 15 March to 15 October, the following terms and conditions shall be implemented:

1. A qualified biologist shall be on-site during all activities that may result in the take of desert tortoises and occur from 15 March to 15 October. The activities of the qualified biologist shall be as defined in term and condition 2.a.2.

2. From 15 March to 15 October, open excavations and other hazards created by construction activities shall be checked three times each day. These inspections shall be performed by the qualified or authorized biologist. The authorized biologist shall remove any trapped desert tortoises and relocate animals pursuant to the attached handling protocol. Open excavations or other hazards created by project activities shall be removed at the end of each day, or when project personnel are absent. Any hazards that are not removed shall be fenced or otherwise barricaded to prevent entry by desert tortoises.

3. All project personnel shall inspect under parked vehicles at the work area prior to driving. If a desert tortoise is discovered under a parked vehicle, the authorized biologist shall be notified immediately. The animal shall either be allowed to move out of harm's way on its own accord or the authorized biologist shall relocate it to a nearby, safe location pursuant to the attached handling protocol.

4. Speed limits shall not exceed 25 miles per hour while project personnel are driving off of paved roads.

c. Only biologists authorized by the Service shall handle desert tortoises. The Service authorizes Tim Duck and Dustin Haines to handle desert tortoises pursuant to these terms and conditions. If other personnel are to be authorized for handling desert tortoises, the Bureau shall submit the name(s) of the proposed authorized biologist(s) to the Service for review and approval at least 15 days prior to the onset of activities.

d. Desert tortoises shall be handled only by authorized biologists and only when necessary. Handling of tortoises shall follow the attached handling protocol.

e. The authorized biologist(s) shall maintain a record of all desert tortoises encountered during project activities. This information shall include for each desert tortoise:

- The locations and dates of observation
- General condition and health, including injuries and state of healing and whether animals voided their bladders
- Location moved from and location moved to
- Diagnostic markings (i.e. identification numbers of marked lateral scutes)

No notching of scutes or replacement of fluids with a syringe is authorized.

3. The following term and condition implements reasonable and prudent measure number 3:

a. Construction sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be placed in covered receptacles to avoid attracting predators of desert tortoises and disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

Disposition of Dead, Injured, or Sick Desert Tortoises

Upon locating a dead, injured, or sick individual of a listed species, initial notification must be made to Special Agent Melvin Holt, Federal Building, Room 8, 26 North McDonald, Mesa, Arizona, (Telephone: 602/261-6443) within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the finding, a photograph, and any other pertinent information. The notification shall be sent to Special Agent Holt with a copy to the Arizona Ecological Services State Office. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. If possible, the remains of intact desert tortoises shall be placed with educational or research institutions holding appropriate State and Federal permits. If such institutions are not available, the information noted above shall be obtained and the carcass left in place.

Arrangements regarding proper disposition of potential museum specimens shall be made with the institution prior to implementation of the action. Injured animals should be transported to a qualified veterinarian by an authorized biologist. Should any treated desert tortoise survive, the Service should be contacted regarding the final disposition of the animal.

Conservation Recommendations

Sections 2(c) and 7(a)(1) of the Act direct Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of listed species. The term "conservation recommendation" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here do not necessarily represent complete fulfillment of the agency's section 2(c) or 7(a)(1) responsibilities for the desert tortoise. In furtherance of the purposes of the Act, we recommend implementing the following actions:

1. The Bureau should monitor the movements, survivorship, and condition of relocated desert tortoises to evaluate the effectiveness of the relocation. This information could be used to develop more successful relocation techniques.

2. The Bureau should work with the owner of lands south and east of the cemetery to install a tortoise barrier on the existing barbed wire fence, located at the boundary between T41N R15W section 33 and T40N R15W section 4, from its junction with the proposed relocated barbed wire fence to its eastern terminus, southeast of Blackmore Tanks.

3. In coordination with the Dixie Resource Area, the Shivwits Resource Area should initiate planning efforts on an ecosystem-based, comprehensive plan for the Beaver Dam Slope that would implement the Desert Tortoise (Mojave Population) Recovery Plan.

The Service requests notification of the implementation of these conservation recommendations so we can be kept informed of actions that either minimize or avoid adverse effects, or that benefit listed species or their habitats.

Conclusion

This concludes formal consultation on the construction, operation, and maintenance of the Beaver Dam Access Project. Reinitiation of formal consultation is required if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may adversely affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the agency action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by this action (50 CFR 402.16). Any questions or comments should be directed to Jim Rorabaugh or Ted Cordery of my staff.

for Sam F. Spiller

Attachment

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (AES)
Director, Arizona Game and Fish Department, Phoenix, AZ
Office Supervisor, Fish and Wildlife Service, Las Vegas, NV
State Supervisor, Fish and Wildlife Service, Salt Lake City, UT
Field Supervisor, Fish and Wildlife Service, Ventura, CA
Field Supervisor, Fish and Wildlife Service, Carlsbad, CA

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