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FWS/R6
6-RO-96-F-01
COKANUT

FEB 22 1996

Memorandum

To: Field Supervisor, Ecological Services, Salt Lake City, Utah

From: Assistant Regional Director, CO/KS/NE/UT Joseph J. Webster

Subject: Intra-Service Section 7 Consultation for Issuance of Endangered Species Act Section 10(a)(1)(B) Permit for Incidental Take of Desert Tortoise in Washington County, Utah

This biological opinion was prepared at the request of the Fish and Wildlife Service Utah Field Office, as required by the Endangered Species Act of 1973 (16 USC 1531 et. seq.) for proposed issuance of a section 10(a)(1)(B) incidental take permit. The proposed take permit is to allow for take of desert tortoise (Gopherus agassizii), a species federally listed as threatened, within the Upper Virgin River Desert Tortoise Recovery Unit, Washington County, Utah. The Service has reviewed a permit application from the Washington County Commission, Washington County, Utah (Applicant). The Federal action is approval and issuance of the incidental take permit by the Service.

The desert tortoise is federally listed as a threatened species. Desert tortoises in Washington County, Utah, are part of the Mojave population of desert tortoise, an administrative designation for those desert tortoises living north and west of the Colorado River. This biological opinion addresses impacts of the proposed action to this species and its designated critical habitat, and to other listed species in the proposed action area. In addition to desert tortoise, eight other federally listed threatened and endangered species occur in Washington County: bald eagle (Haliaeetus leucocephalus), peregrine falcon (Falco peregrinus), Mexican spotted owl (Strix occidentalis lucida), southwestern willow flycatcher (Empidonax traillii extimus), woundfin (Plagopterus argentissimus), Virgin River chub (Gila seminuda), dwarf bear-poppy (Arctomecon humilis), and Siler pincushion cactus (Pediocactus sileri).

The Service has determined that issuance to Washington County of the proposed incidental take permit for desert tortoise will not adversely affect the bald eagle, Mexican spotted owl or southwestern willow flycatcher. The permit will directly affect development occurring in desert tortoise habitat only, and not wetland, riparian, or mountainous habitats upon which these species depend.

Should the Applicant implement the Washington County Habitat Conservation Plan (HCP)-directed conservation actions for any of these species pursuant to the "Other Species" measures in the HCP, beneficial effects to these species are expected. Any development in these habitat types may require further section 7 consultation and coordination with and permitting from the Corps of Engineers under section 404 of the Clean Water Act, or section 7 consultation with the Bureau of Land Management or Forest Service. This biological opinion, therefore, addresses only those listed species which may be affected by the proposed action: desert tortoise, peregrine falcon, woundfin, Virgin River chub, dwarf bear-poppy, and Siler pincushion cactus.

This biological opinion was prepared using information contained in the incidental take permit application prepared by SWCA, Inc., Environmental Consultants for the Applicant. The permit request included an HCP, Implementation Agreement (IA), and permit application. These documents have been accepted by the Service as binding commitments of the Applicant and have been incorporated by reference throughout the opinion. Additional information was provided during the consultation process from species experts including employees of the National Biological Service and from Service files. This biological opinion has been prepared in accordance with section 7 of the Act and Interagency Cooperation Regulations (50 CFR 402).

BIOLOGICAL OPINION

It is the biological opinion of the Service that proposed issuance of a 20-year incidental take permit authorizing incidental take of desert tortoise in accordance with measures required by the HCP and its IA, to allow for otherwise legal activities associated with growth and development in Washington County, including building and housing construction, mining, farming, road building, and utility corridors, is not likely to jeopardize continued existence of desert tortoise. Critical habitat has been designated for the species. Critical habitat will not be destroyed or adversely modified to the extent that constituent elements are appreciably diminished and the habitat no longer serves its role in survival and recovery of the species. Further, mitigative measures proposed by the Applicant and to be implemented by the Applicant and other parties have been designed to promote conservation and recovery of this species.

It is the biological opinion of the Service that issuance of the proposed incidental take permit is not likely to jeopardize the continued existence of the dwarf bear-poppy, Siler pincushion cactus, peregrine falcon, woundfin, or Virgin River chub.

DESCRIPTION OF THE PROPOSED ACTION

The Service proposes to issue an incidental take permit, pursuant to section 10(a)(1)(B) of the Act to Washington County, for a period of 20 years. The permit would authorize take of up to 1,169 desert tortoise (Mojave population) within 12,264 acres of desert tortoise habitat and 31,282 acres of potential habitat (geographically isolated areas with no documented desert tortoise sign) within Washington County, (Washington County 1995).

The area proposed for incidental take will include desert tortoise habitat and potential habitat on all non-Federal lands in Washington County, associated with the Upper Virgin River Recovery Unit as defined by the Desert Tortoise Recovery Plan (Service 1994). The following activities will be authorized by the incidental take permit within "take-designated" areas of desert tortoise habitat and in areas currently unoccupied by desert tortoise (potential habitat):

- Grazing will be allowed.
- Utility easements will be maintained and new easements may be allowed for all utilities, including but not limited to roads; power, telephone, and cable television lines; and water, sewer, and natural gas pipelines.
- Land clearing will be authorized when in compliance with city or county zoning and building permitting procedures.
- Building construction will be allowed in compliance with city or county zoning and when authorized by the appropriate permitting entity.
- Hiking, sightseeing, camping, equestrian activities, and recreational events will be permitted throughout the area.
- Pets may be allowed when under control of the owner as specified by the appropriate city or county ordinance.
- Vehicular use of the area will be allowed as regulated by city or county ordinance or State law.
- Agricultural land treatments such as plowing, disking, mowing, swathing, and harrowing will be allowed.
- Mining will be allowed when done in accordance with city, county, or State regulations.
- Drilling for resources, including but not limited to petroleum, natural gas, other hydrocarbons, and water will be allowed for exploration or production purposes.
- Irrigation of areas for agriculture, landscaping, horticulture, or domestic purposes will be allowed.
- Use of herbicides and pesticides will be authorized when done according to State and Federal law.
- Fire fighting will be allowed and required to abate public nuisance and protect life and property.

- Clearing for landfills exploration or production purposes will be allowed as authorized by appropriate licensing and approving entities.
- Harvest of vegetation, native or introduced, will be allowed with permission of the landowner and appropriate permits, if required.
- Collection of biological or mineral specimens will be allowed by authorization of the landowner and approval of the appropriate entity.
- Any other lawful activity will be allowed.

Proposed Minimizing and Monitoring Measures

Incidental take has been minimized through design of the largest and most contiguous reserve practicable within the Upper Virgin Recovery Unit to be managed primarily for the Mojave desert tortoise. Other methods to minimize incidental take include fencing, law enforcement, education, and translocation (Washington County 1995). The following sections are largely excerpted from the Applicant's HCP.

A. Minimize Incidental Take

1. Fencing

The primary objectives of fencing boundaries of the reserve are to reduce desert tortoise mortality and injury which can result from adverse human impacts, to prevent diseased desert tortoises outside the reserve from infecting desert tortoises within the reserve, and to prevent desert tortoises from leaving the reserve and being killed or injured. Adverse human impacts that can be reduced or eliminated by fencing include harassment, collection of animals, vandalism of habitat, indiscriminate garbage dumping, establishment of additional unimproved roadways, damage caused by off-road vehicle use, and predation by dogs. Fencing also mitigates take by allowing the possibility for impacted areas to revegetate and heal naturally, thus enhancing desert tortoise habitat.

Fencing, an important component of the mitigation program, is estimated to cost $2,000,000. Of this total, it is estimated that the portion of the fencing program attributable to the HCP is $500,000, with the remainder attributable to developers adjacent to the reserve, Utah Department of Transportation/Federal Highway Administration (through separate section 7 project consultation under the Act), and possibly to the Five County Association of Governments through grant acquisition. The fencing plan consists of constructing approximately 70 miles of three types of fence along roadways, reserve boundaries, and plant reserves. The final design of each of these three fence types will be reviewed by the Habitat Conservation Advisory Committee (HCAC) and approved by the Applicant and the Service. Fence

construction will be reported by the HCP administrator in quarterly and annual reports.

The first fence type is a barrier which keeps human activities and pets out and desert tortoises in. Approximately 24.4 miles of this type will be installed in the following areas where geographic features are not adequate barriers:

- Ivins through Padre Canyon to Snow Canyon Road on the southern reserve line.
- Paradise Canyon: both northern and southern reserve lines.
- Winchester Hills: southern and eastern portions, where cliffs would not prevent incursion into the reserve from the west by humans and pets.
- Middleton to Northern Washington reserve line.
- Northern Washington reserve line.
- Eastern boundary at property line west of Red Cliffs Road.

The second fence type will be a desert tortoise-proof fence that restricts movement of desert tortoises out of the reserve, which would be constructed along 18.9 miles in the following areas, again in areas where geographic features are not adequate:

- Reserve Boundary from Snow Canyon Road to Paradise Canyon.
- Skyline Drive (both sides).
- Utah Highway 18 (both sides).
- West side of Interstate 15.

The third fence type will be a range fence to protect endangered plant areas totaling 26.1 miles.

In addition to fencing, vehicle barriers are proposed for the following locations:

- Gate to remain on dirt road off Snow Canyon Road (above the Tuacahn Road) for utilities access.
- Gate roads off Skyline Drive, east of Utah Highway 18, which provide utility access.
- Gate two utility access roads off north end of Northern Washington reserve line.
- Gate road off Interstate 15, heading west, about 1.5 miles south of Red Cliffs Road.
- Cottonwood Road will either be gated where it crosses northern and southern boundary of reserve, or it will be fenced.

2. Law Enforcement

Law enforcement can help protect the desert tortoise from adverse impacts and is recognized as a very important mitigation measure. Habitat may be degraded and desert tortoises harmed or killed by off-road vehicle use, free-roaming (or unleashed) domestic dogs,

hiking, camping, shooting and other unpermitted uses. Effective law enforcement can help prevent these kinds of impacts.

Law enforcement responsibilities discussed above are split between two agencies: Utah Division of Wildlife Resources and the Bureau. Service personnel in the law enforcement division also have responsibilities for enforcing section 9 provisions of the Act. The Division has primary responsibility for enforcing wildlife laws in the State of Utah (as well as overseeing auditing clearance under the HCP), while the Bureau has law enforcement responsibilities as a land manager. The HCP proposes to provide for two full-time law enforcement agents, one each for the Division and the Bureau, to enforce Federal, State, and local regulations within the proposed desert tortoise and plant reserves. The funding level for each agency is $65,000 per year, for a combined total over 5 years of $650,000. It is anticipated that a National Conservation Area (NCA) will be established for the reserve and law enforcement funding will be available to the Bureau. Assuming Congress enacts legislation establishing the proposed NCA, the Bureau may enter into a cooperative agreement with the Division to share costs and responsibilities for law enforcement. In the event the NCA is not established within 5 years, the county will provide required law enforcement. The county's assistance will be in the form of existing law enforcement resources (i.e., sheriff's office) and by cross-training the HCP administrator and staff to handle enforcement duties. Law enforcement reports will be provided by the Bureau and the Division to the HCP administrator for inclusion in quarterly and annual reports to the Service.

3. Education

Education is an important component of the HCP program. An education committee has been established to work on development of an environmental education center in the county. The mission statement of the education committee is "to foster cooperation between the education community; local, State and Federal governments; and private interests with respect to the establishment of a nature education center. The center would provide opportunity for people of all ages and backgrounds to gain a greater understanding of the unique and varied ecosystems found in Washington County."

Numerous ideas are being considered and different alliances with other organizations and other funding sources are being explored. Paradise Canyon has been identified by the Applicant as one of its preferred sites. Because of proximity of that site to the reserve, and the resultant compromise of reserve integrity, other sites will be evaluated for a more acceptable location. The HCP has committed $500,000 over the permit period toward this effort, and progress will be reported in quarterly and annual reports by the HCP administrator to the Service. The county also will prepare an education plan specific to the HCP that will be approved by the HCAC.

4. Five-Year Translocation Research Experiment

Translocation of taken desert tortoises is considered a critical aspect in implementing the HCP. To date, translocation of "taken" desert tortoises in other regions of the Mojave Desert has met with limited success. To further scientific knowledge of translocation, and in an effort to provide the greatest opportunity possible for survival of taken animals, the Service has agreed to fund a 5-year translocation study in Washington County (estimated to cost $750,000). Animals to be used in the translocation study will come from Washington County, Utah only. The County and the Service will cooperate with the principal investigator in identifying possible translocation sites, research design, animal care and facilities needed for the 5-year research period. Translocation site selection will be mutually agreed upon by the Service, the principal investigator, the Bureau, the Division, and the County, based on the best scientific information available. It is anticipated that research needs for translocated animals will be accommodated through the clearing program developed for the proposed action. Specifically, the County will be responsible for surveying desert tortoise habitat, removing individuals, and temporary care of desert tortoises. Washington County's responsibility for taken desert tortoises to be used in this translocation research will cease once animals eligible and needed for translocation research are turned over to the Service's designated agent in Washington County. If cleared animals run in excess of research needs, however, the County will translocate desert tortoises in a manner determined acceptable after consultation with the Service and the Division. Released desert tortoises will not be the responsibility of the County. The Service understands the County will use its best efforts to preserve lives of "taken" desert tortoises, but that the County is not responsible for the ultimate disposition of these taken individuals.

Desert tortoises taken under this permit will be considered in excess of those required for recovery. Once removed or cleared by the County, they and their progeny will not be subject to the Act and will not be protected. This status of taken animals and their progeny is possible in part due to the fact that the only desert tortoises in the translocation research areas will be those translocated there. All of the animals moved to translocation sites will be tagged uniquely for identification. If a tagged animal returns to the reserve and is subsequently cleared again it will not "count" against the total take but will be moved to an approved translocation site. Progeny that return to the reserve areas and cannot be identified as progeny of translocated desert tortoises, however, will be provided full protection of the Act.

5. Translocation other than 5-Year Research Experiment

The HCP has established a fund of $1,000 per month to handle temporary desert tortoise care for the entire 20-year HCP period, for a total budget of $240,000. This care would include a facility for

temporarily holding animals cleared from take areas as needed. For cost-effectiveness, the County agrees with the Service that it would be useful if such a facility, if possible, also served research needs. Should the 5-year research project prove translocation is a successful method for disposition of animals, then a translocation program will likely be instituted for the remainder of the permit period to be funded by the County and other sources (which might necessitate a reallocation of the HCP budget). The Division is expected to receive a permit from the Service to facilitate removal and relocation of desert tortoises in conjunction with the County. The first 5-years' translocation efforts will be reported by the Service and/or the principal investigator to the HCP administrator for inclusion in quarterly reports. Any subsequent translocation efforts after the 5-year research experiment will be included in the Applicant's quarterly and annual reports. Several possible sites have been identified that could serve as both a holding facility and education center. Such a facility would provide educational opportunities for citizens of Washington County and protection for several sensitive desert species in addition to the desert tortoise.

B. Mitigate Incidental Take

Primary mitigation for the proposed incidental take will be acquisition and management of a reserve encompassing 38,753 acres of high quality Mojave desert tortoise habitat and an additional 22,216 acres of medium to low quality habitat. This section details how this reserve will be acquired, managed, and monitored. It also discusses acquisition of grazing permits.

1. Reserve Acquisition

The objective of the reserve acquisition program is to consolidate desert tortoise habitat into public ownership and management. Acquisition of private, municipal, and State School Trust lands within the proposed reserve will be accomplished through land exchange and purchase. These programs are considered the most important and expensive mitigation provided for protection of desert tortoise, and their implementation will be a key assignment of the HCP administrator. An exchange budget has been created with $500,000 identified to pay for appraisals, inventories, title work, legal consultation, and other necessary expenses.

2. Reserve Management

The Steering Committee sought and obtained support of the Bureau's Utah State Office, as well as the Utah Congressional delegation, for designating the reserve an NCA to be managed by the Bureau. This designation is important as it would provide both management funding and enhanced opportunities (through Land and Water Conservation Fund monies) for purchase of additional lands within reserve boundaries.

Until such time as an NCA designation is obtained and additional Federal monies are allocated for its management, the Bureau will manage the reserve to benefit the Mojave desert tortoise in perpetuity. It is anticipated that a management plan will be completed by the Bureau within 2 years following permit issuance. The HCP will provide interim funding to the Bureau for reserve management in 10 semi-annual installments of $25,000 for a total of $250,000 over 5 years. It is anticipated that private and State School Trust lands within Zone 2 of the reserve will be acquired by the Bureau, but it is the intent of the State, county, and cities that Zone 2 be managed as part of Snow Canyon State Park (Park), and it is anticipated that land exchange legislation will fulfill this intent. The Utah Department of Natural Resources (Department) will have responsibility to develop a desert tortoise management plan for the entire Park, also within 2 years of permit issuance. The HCP will provide $50,000 to the Department to assist in management efforts. In all, the HCP will provide $300,000 to land management agencies for desert tortoise reserve management. Management efforts will be reported by the respective agencies (Town of Ivins, the Bureau, and the Department) in quarterly and annual reports to the Service.

The Bureau will take necessary steps to accomplish withdrawal of lands from mineral locations. Such withdrawal will bar location of new mining claims but will not affect valid existing rights.

It is acknowledged that no mitigation credit will be attributed to this HCP for establishment of an NCA. Mitigation credit will be granted for lands within the NCA once lands are acquired and uses incompatible with purposes of the NCA are eliminated. Further, since no mitigation credit will be allowed for its establishment, issuance of the incidental take permit and implementation of provisions of this HCP will not be delayed pending official designation of the NCA.

3. Reserve Monitoring

An ongoing study will be funded throughout the permit period to monitor status of the desert tortoise population, emphasizing determination of whether the population is increasing or declining, what causal factors are involved, and what might be done to change any negative population trends. This can include surveys, demographic information, and determination of reproductive success. A monitoring plan will be developed by the Division in consultation with the Service and members of Desert Tortoise Management Oversight Group Technical Advisory Committee to address Desert Tortoise Recovery Plan goals. The HCP will provide funding in the amount of $1,000,000 during the permit period to fund monitoring efforts. The Division is expected to spend approximately $250,000 which includes section 6 funding under the Act, over the next 20 years for desert tortoise monitoring. The Division has agreed to combine these funds with the HCP monitoring budget to create a fund of $1,250,000 over the life of the permit period.

4. Grazing Permit Acquisition

The objective of acquiring grazing permits is to eliminate adverse impacts from grazing on the Mojave desert tortoise. Acquisition costs are estimated at approximately $75/animal unit-month, with a total estimated cost of approximately $183,000. It is believed that most grazing permittees are willing sellers; however, no permits will be purchased unless a "willing seller–willing buyer" arrangement exists.

Once these grazing permits have been acquired, annual non-use will be applied for according to Bureau requirements. The Bureau will authorize nonuse for conservation and protection purposes for grazing privileges in identified habitat areas. Grazing will not be permitted on acquired allotments.

C. Programs for Other Threatened and Endangered Species in Washington County

The HCP has allocated $1,950,000 for enhancement of species other than the desert tortoise. Within 1 year of permit issuance, the Technical Committee will draft an "Other Species" plan for review by the HCAC, which will outline a broad range of possible programs for conservation of other species that may be affected by the HCP. One high priority program described below is protection of several areas which contain one or both endangered plant species considered in this HCP. A program for fencing has been developed and it is anticipated that HCP law enforcement personnel will conduct regular patrols and the HCP will help facilitate land acquisitions. It should be noted that these plant reserves would be managed by the Bureau, and therefore their designation and management would be subject to section 7 consultation under the Act, National Environmental Policy Act, and evaluation and approval through the Bureau's resource management planning process. At this time, the following management prescriptions are recommended by the County in the HCP:

- Use of existing roadways and utilities would be allowed to continue.
- No off-road vehicles; nonmotorized bikes may be allowed in designated areas.
- No organized or competitive sporting or recreational events should be allowed.
- Nonconsumptive, recreational uses should be allowed.
- The Bureau would request mineral withdrawal for these areas.
- The Bureau would manage these areas as Oil and Gas Category 3.
- Areas would be closed to mineral material sales.
- Utilities and other rights-of-way would be allowed based upon affirmative section 7 consultations and established protocols.
- Impacts from livestock grazing on threatened and endangered plants would be evaluated through monitoring studies, and management prescriptions would be applied as appropriate.
- Research would be allowed which is compatible with protection of threatened and endangered plants.
- Areas would be closed to vegetation sales.
- Hunting would be allowed only during regulated seasons.

STATUS OF THE SPECIES/ENVIRONMENTAL BASELINE

Portions of the following species descriptions are taken from the proposed Washington County HCP (Washington County 1995).

Desert Tortoise

On April 2, 1990, the Service determined the Mojave population (north and west of the Colorado River) of the desert tortoise to be threatened (Federal Register 55:12178). Reasons for the listing included loss of habitat from construction projects such as roads, housing, energy developments, and conversion of native habitat to agriculture. Livestock grazing and vehicle use off existing roads have degraded additional habitat. Also cited as threatening the desert tortoise's continued existence were illegal collection, upper respiratory tract disease (URTD), and predation on juvenile desert tortoises by common ravens. While no additional critical habitat was designated in 1990, the Utah portion of the Beaver Dam Slope subpopulation of the desert tortoise was listed as threatened with 36 square miles designated as critical habitat in 1980. Critical habitat for the entire Mojave population of desert tortoise was determined on February 8, 1994 (Federal Register 59(26):5820). The final rule outlines 12 Critical Habitat Units (CHUs) within the six Recovery Units identified in Desert Tortoise Recovery Plan, signed on June 28, 1994. The HCP area lies within the Upper Virgin River CHU, which is located within the Upper Virgin River Recovery Unit/DWMA.

The living land tortoises are a widely scattered, but numerically feeble, remnant of the herbivorous tortoise fauna that left lowlands and invaded vast prairies which existed during the early Cenozoic Era. Range of the desert tortoise extends from northern Sinaloa, Mexico, northward through southern and western Arizona, southeastern California and the southern tip of Nevada to the extreme southwestern corner of Utah.

The desert tortoise, a large herbivorous reptile, is generally active when annual plants are most common; i.e., during spring, early summer, and autumn months. Desert tortoises usually spend the remainder of the year in burrows or dens, escaping extreme weather conditions of the desert. Burrowing habits of desert tortoises vary greatly in different geographic locations. Burrows may be located under bushes, in banks or beds of washes, in rock outcrops, or in caliche caves. Desert tortoises occur in creosote bush, cactus, shadscale scrub habitats, and Joshua tree woodlands. Further information on range, biology, and ecology of desert tortoise can be found in Berry (1984), Burge (1978), Burge and Bradley (1976), Hovik and Hardenbrook (1989), Karl (1983), Luckenbach (1982), and Weinstein et al. (1987).

Desert tortoises require different types of habitat at different times of the year. Habitat they use is partitioned into areas used for over-wintering, for feeding, and for reproduction (J. Hohman, pers. commun.). In the Upper Virgin River Recovery Unit, winter fidelity to a well-developed burrow, cave, or cave-laden rock outcropping appears to be fairly common; however, not all desert tortoises return to the same winter cave or burrow (Esque et al. 1994). Further, if a desert tortoise does indeed anchor its use of habitat to over-wintering caves or burrows to which it remains faithful for many years,

then one could assume that over a lifetime, a desert tortoise would range in all directions from the over-wintering site at distances like that seen in any 1 year (Esque et al. 1994). A desert tortoise will range from its over-wintering site for purposes of feeding and reproduction. Results of surveys of desert tortoise habitat use covering only a short period of time relative to its lifespan may not be construed to represent area required for a desert tortoise's needs over its lifetime.

The Desert Tortoise Recovery Plan identifies six distinctive population segments of desert tortoise within the Mojave region, equivalent to Recovery Units: Western Mojave, Northern Mojave, Eastern Colorado, Eastern Mojave, Northeastern Mojave, and Upper Virgin River (St. George area). These population segments are distinct based upon genetic, morphological, behavioral, geographical, and ecological differences within the Mojave population. Preserving each of these distinctive population segments in their natural habitats is determined essential to long-term persistence, viability, and genetic variability of the species.

Desert tortoise densities in the Upper Virgin River Recovery Unit are some of the highest yet found, with some areas estimated to have densities as high as 400 animals per square mile. Present average density of desert tortoises in the Upper Virgin River Recovery Unit (comprising the area between Interstate 15 and Utah Highway 18, the Paradise/Padre Canyon/Ivins areas, and Hurricane), based on transects conducted for desert tortoise and desert tortoise sign, is an estimated 80 animals per square mile.

Peregrine Falcon

Peregrine falcons are found in Washington County in Zion National Park; at Welcome Spring, near the south end of the Beaver Dam Mountains; at Snow Canyon State Park; and at Red Cliffs Recreation Area, in high cliffs that provide nest and roost sites for falcons (Jensen 1991). Peregrine falcons are medium-sized, specialized raptors that roost and nest on steep cliff faces and forage upon smaller birds and ground-dwelling mammals. Peregrine falcon populations have increased over the last decade as efforts have occurred to conserve the species. A Recovery Plan has been approved by the Service and is being implemented, leading to conservation and recovery of the species.

On June 30, 1995, the Service published an advance notice of a proposal to "downlist" this species from endangered to threatened. The Service proposed delisting of this species based on information indicating that this subspecies has recovered following restrictions on use of organochlorine pesticides in the United States and Canada and management activities including reintroduction of captive-bred peregrine falcons.

Woundfin and Virgin River Chub

The woundfin was listed as endangered on October 13, 1970 (Federal Register 35:16047). The Virgin River chub was listed as endangered on August 24, 1990 (Federal Register 54:35305), under the scientific name Gila robusta seminuda. Both species are endemic to the Virgin River, occupying overlapping habitats from Pah Tempe Springs near the City of Hurricane, Utah to Lake Mead in

Nevada. Critical habitat was proposed for the Virgin River fish on April 5, 1995 (Federal Register 60:17296). While court-ordered to be completed on or before December 1995, the final rule designating critical habitat is pending as a result of Congressional actions.

Much historical habitat of the Virgin River fishes in lower reaches is dewatered and significantly altered by human activities. Additionally, presence of nonnative species such as red shiner (Cyprinella lutresis) and black bullhead (Ameriurus melas) prevent reestablishment of native populations in lower reaches. Historically the Virgin River bisected the Colorado Basin and the Great Basin, flowing in a southwestern direction where it met the Muddy River before joining the Colorado River.

Construction of Hoover Dam in 1935 separated the two rivers and native fish populations. Historically, both species were widespread throughout much of the lower Colorado drainage in Utah, Arizona, and Nevada. Presently, the woundfin is restricted to the Virgin River from Pah Tempe Spring and the confluence of La Verkin Creek to Lake Mead. Efforts to reintroduce the species in historical habitats in Arizona have not meet with success. Present distribution of Virgin River chub occurs from Pah Tempe Spring to the Mesquite Diversion. A separate population of Virgin River chub also persists in the Moapa River in Nevada.

The Virgin River is characterized by steep-walled, narrow canyons. It cuts through the Hurricane Fault, the Virgin anticline, and the Beaver Dam Mountains. There are four major canyons along the Virgin River. Zion Canyon, including the "Narrows" section, was formed by the North Fork of the Virgin River. Lower reaches of the East Fork are contained in Parunaweap Canyon. Timpoweap Canyon lies near Virgin, Utah, and drains La Verkin and Leeds Creeks. Finally, the Virgin River Gorge cuts through the Beaver Mountains south of St. George where the Santa Clara River joins the mainstem of the Virgin River. Tributaries of the Virgin River cut steep canyons through mountain ranges of the Colorado Plateau, providing annual flow of the river. In addition, delivery of water from mountains and tributaries is the primary water resource that recharges the Navajo Sandstone Aquifer that feeds the Virgin River and various springs during periods of low flow. The Navajo Sandstone Aquifer in 1978 was estimated to cover approximately 129,400 acres from Gunlock to the Hurricane Bench. Total groundwater storage was estimated to be approximately 12 million acre-feet of water. Well development and pumping of the aquifer is an important water resource component for meeting human water demands of Washington County. Interception of groundwater within the Navajo Sandstone Aquifer is known to affect flows of the Santa Clara and Virgin Rivers. Based on these early reports, it has been known that pumping of the aquifer has an effect on the Virgin River, yet well development has occurred throughout the basin, providing water for several cities and towns.

The Virgin River is characterized by widely variable discharges; from flash flooding in summer following thunderstorms, to no-flow conditions in the Virgin River Gorge where the river flows underground and resurfaces at springs near Littlefield, Arizona. Movement of groundwater from the aquifer is important in maintaining base flow conditions during low summer periods. The

aquifer also provides the perennial source of water to springs at Littlefield, Beaver Dam Wash, and in the Virgin River narrows.

The woundfin is a streamlined, silvery minnow with a flat head and conspicuous, sharp dorsal spine, from which it derives its name. The woundfin is the most silvery minnow in North America, often reflecting blue in bright sunlight. The species rarely achieves a standard length of more than 7.5 cm (3 inches) (Service 1994).

The Virgin River chub is a silvery medium-sized minnow that averages 20 cm (8 inches) in total length but can grow to lengths of 45 cm (18 inches). The Virgin River chub can be distinguished from other subspecies of genus Gila from the Colorado River basin by the number of rays in dorsal, anal, and pelvic fins. The subspecies name was derived from the fine embeddedness of scales on the back, breast and belly, giving appearance of a scaleless fish and therefore the species name seminuda (Service 1994).

Past and continued primary threats to endangered Virgin River fishes are modification and loss of habitat from construction of dams, creation of reservoirs, water diversions and associated irrigation channels and constant de-watering of the Virgin River and its tributaries. Second to loss of habitat, effects of introduction and establishment of nonnative species, particularly red shiner, have exacerbated decline of the species.

There are approximately 12 miles of the Virgin River, from Pah Tempe Springs to the Washington Field Diversion in Utah, that remain unoccupied by nonnative species. This reach of river, while controlled by the Quail Creek Dam diversion, represents the only wild refugia population for both species.

Dwarf Bear-Poppy and Siler Pincushion Cactus

Dwarf bear-poppy, an endangered species, and Siler pincushion cactus, a threatened species, inhabit Washington County. The dwarf bear-poppy occurs entirely in Washington County while the Siler pincushion cactus is known to occur in scattered populations between Fredonia, Arizona, and St. George, Utah. The known habitat of these plants, clay soils in the Moenkopi Formation, lies south and west of St. George. Approximately 90 percent of the habitat of the two species is on Bureau and Utah State School Trust lands. These plant species are currently imperiled by off-road vehicle use. A transect study was carried out by Dr. Arthur Phillips, a botanist who aided in preparation of the Recovery Plan for Siler pincushion cactus (Phillips et al. 1979). Information from this study correlates with previous Service studies and surveys undertaken by the Bureau.

EFFECTS OF THE PROPOSED ACTION ON LISTED SPECIES

Desert Tortoise

Issuance of the proposed permit to Washington County could result in loss of 1,169 desert tortoises within 12,264 acres of desert tortoise habitat and 31,282 acres of potential habitat (geographically isolated areas with no

documented desert tortoise sign) within the Upper Virgin River Recovery Unit, Washington County, Utah. Loss of 1,169 desert tortoises would represent an estimated 15 percent of animals in the Upper Virgin River Recovery Unit (7,883). Loss of 12,264 acres represents 20 percent of occupied desert tortoise habitat within the Upper Virgin River Recovery Unit (55,947 acres) (Washington County 1995).

However, as a result of HCP implementation and resultant incidental take permit issuance, 38,753 acres of high quality desert tortoise habitat and an additional 22,216 acres of medium to low quality habitat will be protected from further development. Efforts to minimize incidental take discussed under the Proposed Action including fencing, law enforcement, education, and translocations; and efforts to mitigate incidental take including reserve acquisition, reserve management, reserve monitoring, and grazing permit acquisition will aid in the survival and recovery of the species.

Therefore, the proposed action will result in adverse impacts to the desert tortoise in some areas and protect the tortoise and its habitat in other areas. The cumulative load of human and disease-related mortality accompanied by habitat destruction, degradation, and fragmentation are the most serious threats facing the Mojave population of desert tortoise. With the uneven, heterogeneous distribution of desert tortoises in the County, it is remotely possible that growth and development could occur without immediate and direct incidental take of desert tortoises. In such an unlikely event, however, development would occur in a "polka-dot" pattern, patches of occupied habitat would be left undeveloped and would be eventually surrounded by urbanization, and ultimately, take of desert tortoise and habitat would result. The proposed section 10(a)(1)(B) permit would allow incidental take of desert tortoise in areas not required for recovery, and provide opportunity for more orderly development within the County by removing the constraint of having to avoid disturbance of desert tortoise habitat. The reserve will provide a consolidated area of quality habitat in which take is not allowed. Development in Washington County will be directed to areas not required for the recovery of the species, so the take of desert tortoises resulting from development will be concentrated in areas less critical to the species.

In addition to direct effects, there are a number of possible negative indirect effects on desert tortoise which may result from issuance of the proposed incidental take permit to Washington County. While these impacts would likely occur with or without the incidental take permit, issuance of the permit may result in increased pressures and more rapid adverse effects in the nonreserve areas. These indirect effects stem from increases in the following, in nonreserve areas: (1) recreation, including hiking and off-road vehicle use; (2) collection of desert tortoises by the public for pets; (3) habitat fragmentation; (4) utility and energy facilities and corridors; (5) vandalism of desert tortoises and vegetation; (6) escape of previously-adopted desert tortoises; and (7) illegal release of unwanted desert tortoises into the wild. Any increase in indirect adverse effects as a result of the issuance of the incidental take permit will be more than offset by the protective measures decribed in the HCP.

The Service anticipates that within the reserve the above indirect effects will negatively affect desert tortoises within the Upper Virgin River Recovery Unit because: (1) although the habitat reserve is proposed primarily for conservation of the desert tortoise and other native species, its creation and designation may create an even more attractive, high-profile area for use of hikers and off-road vehicle enthusiasts, and result in increased recreational use incompatible with desert tortoise survival and recovery; (2) public awareness of the reserve as an area for desert tortoise conservation may result in greater publicity about desert tortoise occurrence in certain areas, and that may result in increased incidents of illegal desert tortoise collection; (3) because no buffer area around the reserve has been included in the reserve design, permitting incidental take of desert tortoise in proximity to, and around the perimeter of, the reserve may result in unplanned habitat degradation and fragmentation within the reserve; (4) construction that will be permitted in the incidental take areas will require utility and energy facilities and rights-of-way, which will likely require routing through portions of the reserve, as the reserve is situated centrally within the greater Ivins--St. George--Washington--Hurricane urban area; (5) creation of a desert habitat reserve may draw attention to areas where individuals opposed to endangered species conservation efforts may concentrate any anti-conservation efforts; (6) creation of a reserve may symbolize to some individuals an area where unwanted pet desert tortoises may be dropped off, and disease spread would be facilitated; and (7) issuance of the permit may signal to some individuals that prosecution under the Act is likely without a permit, and those presently-captive desert tortoises (likely including desert tortoises brought into captivity both before and after listing under the Act) may be released into the wild as a result. Implementation of the Applicant's proposed minimization and mitigation measures, especially environmental education, fencing, and law enforcement measures, will reduce and offset these anticipated indirect effects to the maximum extent practicable.

Desert tortoise habitat in Washington County will be significantly enhanced by a combination of reserve establishment, habitat acquisition, habitat protection, and long-term species management. The proposed reserve will include the majority of high- and medium-density desert tortoise habitat in the Upper Virgin River Desert Wildlife Management Area, as described in the Desert Tortoise Recovery Plan. It will be connected with lower-density habitats for movement corridors and foraging areas which should result in permanent protection of desert tortoise populations in the Upper Virgin River Desert Wildlife Management Area. Land acquisition between the State of Utah, private individuals, and the Bureau through exchanges and purchases will ensure contiguity and management of desert tortoise habitat for survival and recovery.

The HCP proposes establishment of a desert wildlife reserve of 60,969 acres of which 64 percent (38,753 acres) is desert tortoise habitat. This reserve extends from the eastern boundary of Paiute Indian Tribal Lands on the west to the City of Hurricane on the east. Within this area, uses will be carefully controlled and all management actions will place desert tortoise survival and recovery as the highest priority. Outside the reserve, development of desert tortoise habitat will be allowed in designated take areas. Any activities

with a Federal nexus, whether inside or outside the reserve, will be subject to section 7 consultation with the Service.

The level of effect described herein will not reduce appreciably the likelihood of survival and recovery of the Mojave population of the desert tortoise in the wild or diminish value of critical habitat both for survival and recovery of desert tortoises because:

1. The majority of incidental take will occur within the urbanized St. George/Washington City area where it is very difficult to sustain viable subpopulations of desert tortoises for recovery. Significant portions of desert tortoise habitat within areas to be developed in Washington County have been degraded by development impacts to date.

2. Mitigation measures proposed to offset effects of the proposed action (i.e., increased law enforcement, elimination of grazing, etc.) will further recovery objectives of the desert tortoise in the Upper Virgin River Recovery Unit, including conservation and management of approximately 38,753 acres of desert tortoise habitat in perpetuity or for as long as it is required under the Act.

3. Though development of 12,298 acres of desert tortoise habitat represents an estimated loss of 22 percent of desert tortoise habitat in the Upper Virgin River Recovery Unit in Washington County, approximately 10,938 acres of State School Trust lands and 7,618 acres of private land would be exchanged or acquired and consolidated into the reserve. This consolidation will allow for implementation of the required intensive management actions for desert tortoise recovery that are not implemented now.

4. Desert tortoises on land to be developed will not be destroyed but will be collected by Washington County. The Service has agreed to fund a 5-year study involving desert tortoise translocation in Washington County (estimated to cost $750,000). Animals to be used in this research project will come from Washington County, Utah only.

5. An education center will be developed and funded by the County. Its mission will be to foster an understanding of, and appreciation for, the unique natural communities found in Washington County.

Peregrine Falcon

In general, peregrine falcon hunting habitat will receive additional protection through establishment of the proposed reserve. The nest site at the Red Cliffs Recreation Area that lies at the northeastern edge of the proposed reserve area, however, may be affected by the proposed action. Peregrine falcons at this location have successfully fledged young for the past several years (R. Fridell, pers. commun.). The Red Cliffs peregrine falcon pair may be affected by implementation of the HCP due to additional increased recreational use at the campground, and other human-caused disturbances such as hiking and housing development.

The Red Cliffs Recreation Area campground and permitted activities are administered by the Bureau. In addition, the HCP calls for periodic monitoring of the eyrie to determine reproductive status and effects, if any, that increased human disturbances may have on the species. In the event that there appear to be disturbances that would impair the pair of falcons during nesting or breeding periods, management actions will be identified and implemented by the Bureau in cooperation with the HCP administrator to reduce or eliminate human-caused disturbance.

In addition, the HCP has allocated $1,950,000 for species enhancement. Within 1 year of permit issuance, a plan will be drafted that will outline a broad range of possible programs that will provide for conservation of listed and other native/candidate species that may be affected in the area.

Woundfin and Virgin River Chub

Many in-depth surveys and life history studies have been conducted concerning Virgin River fishes. A final Recovery Plan for the Virgin River fishes has been prepared (Service 1994).

Population growth in the Virgin River basin over the last several years has been increasing at 6 percent per year for the past 20 years and has doubled since 1975. The dramatic growth of the region has placed a large burden on surface flows of the Virgin River, its tributaries, and groundwater supplies of the Virgin River basin. Issuance of the incidental take permit for desert tortoise and non-reserve lands outside of the reserve may affect listed fish as water is provided to the growing area through accelerated well development and main river depletion proposed. This, however, would likely occur with or without the incidental take permit.

Indirect effects of continued water development to accommodate the resultant accelerated growth, in the form of groundwater well development as proposed by cities in Washington County within and outside the reserve, in addition to five major water projects proposed by the cities of St. George and Santa Clara and the Water District in the foreseeable future, have led to proposed development of the "Virgin River Basin Integrated Resource Management and Recovery Program" (Recovery Program). The degree to which the HCP and desert tortoise take permit will affect the amount of water development is unknown; however, indirect effects on endangered fish species will be more than offset by implementation of the Recovery Program. The HCP states that the County endorses the draft Virgin River Habitat Management and Conservation Plan dated October 1994 (Conservation Plan). This Conservation Plan called for development of water resources to meet growing needs of the County. In addition, the Conservation Plan identified several recovery activities or plans that if implemented would: 1) recover listed endangered fish species, and 2) implement the Conservation Agreement for Virgin spinedace and preclude need to list the species.

The Recovery Program is intended to go beyond what is called for in the HCP or Conservation Plan by providing certainty that recovery of the fish will be achieved as water needs are being met. Goals of the program are to provide for recovery of the fish, protect native species, protect the river corridor

through acquisition, and provide for water development consistent with goals of recovery for the fish. The Recovery Program is intended to aid in the survival and recovery of the endangered Virgin River fish, conservation of their critical habitat, and to serve as the reasonable and prudent alternative for future section 7 consultations for water development.

A memorandum of understanding (MOU) was signed on October 19, 1995, by the parties to the Recovery Program that include the State of Utah, the Bureau, the Service, and the Water District. The MOU outlines goals of the Recovery Program and timeframe in which it will be developed (6 months). As the intent of the Recovery Program is to insure that sufficient water will be maintained in the river to provide for recovery of the species, any potential effects of issuance of the incidental take permit that may occur due to water development will be precluded. Thus, as stated above, any impacts from water development is likely to occur with or without the incidental take permit. However, any such adverse impacts will more than be offset by the Recovery Program as outlined by the MOU.

Furthermore, the proposed action applies only to incidental take of desert tortoises within Washington County. It does not authorize take of any other species listed by the Service or the State of Utah. Also, activities on Federal lands or that involve Federal funds, permits, etc., will still be required to undergo section 7 consultation between the action agency and the Service.

In addition, the HCP has allocated $1,950,000 for species enhancement. Within 1 year of permit issuance, a plan will be drafted that will outline a broad range of possible programs that will provide for conservation of listed and other native/candidate species that may be affected in the area.

Dwarf Bear-Poppy and Siler Pincushion Cactus

The dwarf bear-poppy does not occur in areas designated for incidental take under the proposed section 10(a)(1)(B) permit. Adverse impacts may occur to this species, however, primarily due to off-road vehicle activity which may increase as a result of issuance of the incidental take permit. The restriction of off-road vehicles within the reserve may result in increased activity at locations where the poppy occurs. Incidental take is not being requested by the Applicant for areas in which either the dwarf bear-poppy or Siler pincushion cactus occur. As a result of issuance of the permit that restricts off-road vehicle use in reserve areas, however, potential adverse impacts may occur where these species are located outside the reserve and outside fenced plant reserves. As stated earlier, approximately 90 percent of the habitat where these two species occur is on Bureau and Utah State School Trust lands.

Populations of dwarf bear-poppy and Siler pincushion cactus may be affected by issuance of the incidental take permit due to increased off-road vehicle use in their habitat outside the reserve, as a result of off-road vehicle restrictions enforced within the reserve. Their habitat elsewhere, however, will be substantially improved due to proposed fencing and law enforcement that will be provided by the HCP. The HCP proposes to fence areas adjacent to

the reserve occupied by the two listed plants. In addition, the HCP proposes, and the Bureau has agreed to, implement management prescriptions as part of their Dixie Resource Management Plan that would further stabilize and enhance these two federally listed plant species.

In addition, the HCP has allocated $1,950,000 for species enhancement. Within 1 year of permit issuance, a plan will be drafted that will outline a broad range of possible programs that will provide for conservation of listed and other native/candidate species that may be affected in the area.

CUMULATIVE EFFECTS

Cumulative effects are those effects of future non-Federal (State, local government, or private) activities on endangered and threatened species or critical habitat that are reasonably certain to occur during the course of the Federal activity subject to consultation. Future Federal actions are subject to consultation requirements established in section 7 of the Act and, therefore, are not considered cumulative to the proposed action.

Projects located within the permit area that lack a Federal nexus could contribute to significant cumulative impacts to desert tortoise and other listed species. Based on observed human population growth rates, projects of this type are reasonably certain to occur; however, it is difficult to describe and quantify these proposed projects, as the type and number of project proposals are dynamic over time. Section 9 of the Act, however, protects desert tortoise and other listed species from unlawful take. To avoid section 9 violations, projects resulting in take of desert tortoises and other listed species (other than listed plants) require approval of the Service through the section 10(a)(1)(B) permit process. The HCP accompanying this 20-year permit application for incidental take of desert tortoises throughout Washington County includes mitigation and minimization measures to offset impacts of incidental take.

Other listed species, such as Virgin River fish, that may be affected by issuance of the permit for Washington County are being addressed in development of the "Virgin River Basin Integrated Resource Management and Recovery Program" (Recovery Program). It is expected that most non-Federal actions affecting federally listed species within the proposed action area over the next 20 years will fall under the purview of the proposed section 10(a)(1)(B) permit and/or the Recovery Program. Any activity that would reduce flows within this reach or that would reduce flows and possibility of recovery in other reaches of the Virgin River in Washington County would appreciably reduce survival and recovery of the species and thus jeopardize continued existence of the species. Several water development projects, including off-stream reservoirs and pumping of groundwater, are being considered by the County and cities to meet growing human water needs of the area. Future well development and mining of the Navajo Sandstone Aquifer could impact flows of the Virgin and Santa Clara Rivers and affect endangered and native fish fauna. Any further reduction in the species range and population numbers from additional water development or establishment of additional nonnative species would jeopardize continued existence of the species.

SUMMARY OF BIOLOGICAL OPINION

It is the biological opinion of the Service that proposed issuance of the 20-year incidental take permit is not likely to jeopardize the continued existence of desert tortoise. Critical habitat has been designated for the species. Critical habitat will not be destroyed or adversely modified to the extent that constituent elements are appreciably diminished and the habitat no longer serves its role in survival and recovery of the species. It also is the biological opinion of the Service that issuance of the proposed incidental take permit is not likely to jeopardize the continued existence of dwarf bear-poppy, Siler pincushion cactus, peregrine falcon, woundfin, or Virgin River chub.

INCIDENTAL TAKE

Section 9 of the Act, as amended, prohibits any taking (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Under terms of sections 7(b)(4) and 7(a)2 of the Act, taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with this incidental take statement. Measures described below are nondiscretionary, and must be undertaken by the agency or made a binding condition of any grant or permit issued to the Applicant, as appropriate.

Sections 7(b)(4) and 7(o) of the Act do not apply to the incidental take of listed plant species (e.g., dwarf bear-poppy, Siler pincushion cactus). However, protection of listed plants is provided to the extent that the Act requires a Federal permit for removal or reduction to possession of endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowning violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

AMOUNT OR EXTENT OF TAKE

As stated in the HCP and the description of the proposed action, the Service anticipates up to 1,169 desert tortoise (Mojave population) within 12,264 acres of desert tortoise habitat and 31,282 acres of potential habitat could be taken as the result of the proposed action.

No incidental take of any other species (peregrine falcon, woundfin, Virgin River chub) is anticipated as a result of the proposed action, which was designed for the protection of the desert tortoise. The incidental take permit provides protection only for incidental take of the desert tortoise. Should incidental take of any other federally listed species occur as a result of implementation of the incidental take permit, HCP or IA formal consultation under section 7 of the Act will be reinitiated.

REASONABLE AND PRUDENT MEASURES

The Service believes that the following reasonable and prudent measure is necessary and appropriate to minimize incidental take authorized by the section 10(a)(1)(B) permit:

> Any incidental take of desert tortoise must comply with all of the terms and conditions of the section 10(a)(1)(B) permit, including provisions of the HCP and its IA.

TERMS AND CONDITIONS

In order to be exempt from prohibitions of section 9 of the Act, the following mandatory terms and conditions, which implement the reasonable and prudent measure described above, must be complied with:

1. A section 10(a)(1)(B) permit, as evaluated in this biological opinion, must be issued by the Service.

2. The IA for the HCP for the section 10(a)(1)(B) permit must be executed by the Service, the Applicant, and all other signatory parties identified therein. In the event the HCP and its IA do not agree, the IA will apply.

3. The HCP must be implemented. Findings of the Service with regard to nonjeopardy or effect of the proposed action on listed species are based on implementation of all proposed actions, including recommended actions, contained within the HCP.

4. The Applicant must comply with all conditions of the section 10(a)(1)(B) incidental take permit to be issued by the Service.

This incidental take statement authorizes take of desert tortoise on nonfederally-owned habitat outside the County-proposed desert habitat reserve, and outside the Beaver Dam Slope desert tortoise recovery unit. Incidental take is authorized in the area of the Upper Virgin River Desert Tortoise Recovery Unit in Washington County, and outlined in the section entitled **DESCRIPTION OF THE PROPOSED ACTION**. This incidental take statement does not authorize any take of desert tortoises on any lands within the Beaver Dam Slope recovery unit in Utah.

REINITIATION REQUIREMENT

As stated in 50 CFR 402.16, 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 impact listed species or critical habitat in a manner or to an extent not considered in this biological 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 biological opinion, or 4) a new species is listed or critical habitat designated that may be affected by the action.

In instances where the amount or extent of incidental take is exceeded, any operations that are causing such take must be stopped in the interim period between initiation and completion of the new consultation if any additional taking is likely to occur.

CONCLUSION

This concludes formal consultation on proposed issuance of a 20-year incidental take permit authorizing incidental take of desert tortoises in accordance with measures required by the HCP and its IA to allow for human population growth and development in Washington County, Utah. For any questions regarding this biological opinion, please contact Robert D. Williams, Assistant Field Supervisor, or Marilet A. Zablan, Wildlife Biologist, of the Service's Utah Field Office in Salt Lake City, Utah, at telephone 801-524-5001.

APPROVE Ralph O. Morgenweck DISAPPROVE _____

Regional Director, Region 6 Regional Director, Region 6

Date 2/22/96 Date _____

cc: Washington County Commission, 197 East Tabernacle, St. George, Utah 84770

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