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In Reply Refer To:  
AESO/SE  
22410-2009-F-0223

May 21, 2009

Memorandum

To: Field Office Manager, Arizona Strip Field Office, Bureau of Land Management, St. George, UT

From: Field Supervisor

Subject: Biological Opinion for the Proposed Dixie-Escalante Rural Electric Association SunRiver to Beaver Dam Transmission Line

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request was dated February 26, 2009, and received by us on March 3, 2009. At issue are impacts that may result from the proposed replacement of an existing transmission line that runs from SunRiver, Washington County, Utah to Beaver Dam, Mohave County, Arizona. The proposed action may affect the endangered California condor (*Gymnogyps californianus*), the threatened Mojave desert tortoise (*Gopherus agassizii*) and associated critical habitat, the endangered Holmgren milk-vetch (*Astragalus holmgreniorum*) and associated critical habitat, and the southwestern willow flycatcher (*Empidonax traillii extimus*) and associated critical habitat.

In your memorandum, you requested our concurrence that the proposed action is not likely to adversely affect the California condor or the southwestern willow flycatcher and its critical habitat. We concur with this determination. Our rationale for concurrence is detailed in Appendix A.

This biological opinion (BO) is based on information provided in your February 26, 2009, memorandum and biological assessment (BA); telephone conversations with your staff as well as staff from the Bureau of Land Management (BLM) St. George Field Office, Utah (Utah BLM); the Fish and Wildlife Service (FWS) Utah Ecological Services Field Office (Utah FWS); and other sources of information. Literature cited in this BO is not a complete bibliography of all literature available on the species of concern or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

## CONSULTATION HISTORY

The following details the history of the consultation pertaining to this project:

- June 25, 2007: Our Utah FWS Office was first contacted regarding the installation of a high voltage transmission line from near Bloomington, Utah to Beaver Dam, Arizona.
- April 8, 2008: We participated in a site visit with Utah BLM and Utah FWS to look at Holmgren milk-vetch habitat and plants along the transmission line alignment in Arizona and Utah.
- August 15, 2008: We provided comments on a draft BA to Utah BLM.
- September 8, 2008: We participated in a meeting and conference call with Utah BLM, Arizona Strip District Office (Arizona BLM), and Utah FWS in St. George, Utah to discuss concerns about impacts to Holmgren milk-vetch.
- January 2, 2009: We agreed to take the lead for the consultation for the FWS.
- January 6, 2009: We provided the Utah and Arizona BLM with our comments on another version of the draft BA. Arizona BLM also took the lead for the consultation for the BLM.
- January 20, 2009: We received a copy of the draft habitat reclamation plan.
- January 29, 2009: We provided comments on the draft habitat reclamation plan and additional comments on the BA.
- February 4, 2009: We and Utah FWS had a conference call with Arizona and Utah BLM and JBR Environmental Consultants to discuss the comments regarding the draft BA and habitat reclamation plan.
- March 3, 2009: We received Arizona BLM's request for initiation of formal consultation.
- April 23, 2009: We provided a draft biological opinion to the Arizona BLM.
- May 7, 2009: We received comments on the draft biological opinion from the Arizona BLM and Arizona Game and Fish Department.

## BIOLOGICAL OPINION

### **Description of the Proposed Action**

Dixie Escalante Rural Electric Association (Dixie Escalante) has applied to BLM for a permanent right-of-way (ROW) to upgrade and replace an existing power line that crosses private, state, and BLM-administered lands from SunRiver, Washington County, Utah to Beaver Dam, Mohave County, Arizona. The current 12.47 kilovolt (kV) line would be replaced with a high capacity 138 kV transmission line. Additionally, pole structures would also be replaced to accommodate the new transmission line. A permanent substation would be constructed near Beaver Dam, Arizona, and three temporary construction staging areas would be required. Maintenance activities and habitat reclamation and rehabilitation are also included as part of the proposed action.

The project would be approximately 28.73 miles long and would be located on lands administered by the BLM St. George Field Office (approximately 13.95 miles); Utah State lands administered by the Utah Division of Wildlife Resources (UDWR) (approximately 1.97 miles); privately owned land in Utah (approximately 0.51 mile); BLM Arizona Strip Field Office (approximately 9.96 miles); Arizona State lands (1.42 miles); and privately owned land in Arizona (0.92 mile). The proposed project would begin at a substation immediately west of Interstate 15 near the Port of Entry in Utah (Figure 2 of the BA). From this substation, the proposed line would follow along Interstate 15 for 1.09 miles and then replace the existing 12.47 kV line (Utah # U-67481 and Arizona # AZA-24945) to the Black Rock Interchange. Starting near the Interstate 15 Black Rock Interchange, the proposed line would exit the existing ROW and would generally parallel the existing 500kV Navajo-McCullough Transmission Line west to Highway 91 in Arizona. The transmission line would then head south along the east side of Highway 91 to a proposed substation north of Beaver Dam. From the proposed substation, the line would follow along Highway 91 through Beaver Dam to the existing substation near Interstate 15 (Figure 2 of the BA). Upon completion of the proposed transmission line, the old line from the beginning of the project to the Black Rock Interchange would be decommissioned and removed. Construction activities associated with the installation and removal of the lines would likely occur over a one-year time frame beginning in the spring of 2009. No new surface disturbance is anticipated from removing the existing line.

The total distance of the project would be 28.73 miles, with 23.91 miles occurring on BLM-administered lands. Dixie Escalante is requesting a 100-foot wide permanent ROW for the line. Dixie Escalante is also proposing three staging areas and a substation that would be built on BLM-administered lands adjacent to Highway 91 and north of Beaver Dam. The substation would measure 300 x 300 feet (2.01 acres). Tables 1 and 2 of the BA show acres of temporary and permanent disturbance on public, state, and private lands.

Within the action area for this project, all desert tortoise and Holmgren milk-vetch habitat is designated critical habitat for these species.

**Lines**

The new transmission line would be single-circuited with a total of three conductors (i.e., electrical wires) and one static shield wire, which includes a fiber optic core. The conductors installed would support 138 kV, but would only be energized at 69 kV at this time. The fiber optic cable line installed on the new power poles would serve as an electronic communication path for high speed tripping of the 138/69 kV line. This electronic communication path would be installed for the lines' protection as required by the Western Electrical Coordinating Council.

**Pole Structures**

The line would be framed on approximately 188 fiberglass composite, self-supporting, single pole structures and 8 steel poles, all approximately 80 to 100 feet in height and three feet in diameter at the base. Compared to steel, fiberglass poles are lighter and efficiently packaged in a single crate that is much easier to deliver to pole installation sites than long, heavy steel poles. Use of fiberglass poles, compared to steel, would lessen the amount of disturbance associated with pole delivery by reducing the number of delivery trips. Because these poles are more maneuverable, trucks delivering the poles should be able to avoid cutting corners on access routes. Fiberglass poles are also resistant to corrosion, thus greatly increasing the life of the line. Like steel, fiberglass poles are fire resistant. Average distance between poles would be 785 feet. Where the line changes direction or has longer distances between structures, a double or triple pole structure would be constructed for support.

Poles would likely be installed in sequential order starting from the beginning of the project heading west to Beaver Dam. This sequence may change based on seasonal restrictions or for other reasons. Structure holes would be dug using a rubber tired or track-mounted backhoe or auger. Blasting would be required in areas where backhoes and augers are unable to dig through rock. Pole sections would be delivered to the site by truck, jacked together to form a structure, and erected using a large crane. The poles would be secured in the hole by backfilling with hole cuttings and/or imported aggregate. Conventional construction techniques would be used during the majority of the power line construction activities; however, depending on the topography, final design, and sensitivity of the area, a helicopter may also be used to deliver sections of poles to some installation sites.

Once the structures are in place, the lines would be installed by first running a pull or sock line through structure-mounted pulleys along the alignment. The sock line would be pulled from structure to structure by hand (walking) or by using a helicopter, vehicle, or off-highway vehicle (OHV) along approved roads or cross-country within the proposed ROW. The conductor and fiber optic line would then be attached to the sock line and pulled through the pulleys using reel trucks. Approximately 63 pull stations would be required for the project. These pulling stations would be situated within the ROW or on private land.

**Access**

Access to the ROW from the beginning of the project to the Black Rock Interchange would be from existing dirt roads. Access from the Black Rock Interchange area west to Highway 91 would occur from established dirt roads, many associated with the adjacent Navajo-McCullough Transmission Line. The main access road through Holmgren milk-vetch habitat is not a BLM-

maintained road, but parallels the power line throughout milk-vetch critical habitat. Access from Highway 91 south to the proposed substation would be from the highway and roadside ditch.

Wherever possible, existing roads would be used in lieu of constructing new roads. In areas that do not have existing access to the ROW, access would be created with 50 short access spur routes, totaling 20,562 feet (figures provided in Appendix A of the BA). These short access routes would be used for overland travel but would require no grading, although some rocks may need to be moved to allow access. The routes would measure 12 feet in width and would be reclaimed in most instances. All access routes in habitat for the desert tortoise and Holmgren milk-vetch would be temporary and reclaimed after construction. The majority of the overland travel access routes in milk-vetch habitat are less than 100 feet in length, with only a few measuring up to 300 feet.

There would be 10 spur roads created outside of desert tortoise and Holmgren milk-vetch critical habitat that would require a cut slope and extensive grading (figures provided in Appendix A of the BA). These 10 spur roads (totaling 4,134 feet) would not be recontoured after construction in order to provide access to the poles for future maintenance, but would be reseeded and raked (i.e., partially reclaimed) to remove vehicle tracks. Further, minor obstacles (e.g., rocks, crushed brush, and dead fall trees) would be placed in the path to deter vehicle use and make it appear as natural as possible.

### **Staging Areas**

Three staging areas (200 x 200 feet each) are proposed along the alignment (Figure 2 of the BA). One staging area would be located near the Black Rock Interchange, within the ROW, on land administered by the State of Arizona. The second staging area would be located on private property located in Mine Valley, and the third on the proposed substation area north of Beaver Dam.

### **Substation Construction**

The proposed substation would be built on BLM-administered land adjacent to Highway 91 north of Beaver Dam (Figure 2 of the BA). The substation would measure 300 x 300 feet (2.01 acres) and includes one pole site location. The substation area would be cleared, leveled, and graveled. This would occur prior to building a new control building, building and installing new busses and breakers, installing transformers, and other protective devices. Construction activities would entail using large cranes, line trucks, pickup trucks, flat bed trucks, dump trucks, cement trucks, excavators, and dozers. The gravel source could be from an existing private gravel quarry in Beaver Dam. The substation would be secured with a seven-foot high chain-link fence with two rows of barbed-wire.

### **Maintenance**

Although it is not anticipated that the new power line would experience frequent failures, some routine maintenance and service for occasional equipment failures would be required. Types of maintenance activities that could occur over the life of the line include pole, conductor, insulator, and anchor support replacement. Access for routine maintenance and unexpected service failures would be limited to the approved ROW, existing access routes, and disturbed areas. In addition to the conservation measures described below, terms and conditions that would address

maintenance activities would be identified in the ROW grant issued by BLM and would be consistent with this BO.

### **Temporary and Permanent Disturbance**

A maximum temporary disturbance area of 100 x 50 feet (0.1148 acres) would be needed for each pole placement, resulting in a maximum temporary disturbance area of 22.50 acres (196 poles x 0.1148 acres/pole), with 15.95 acres occurring on BLM-administered lands (Table 2 of the BA). It is anticipated that a much smaller disturbance area at each pole site would be typical as crews would minimize disturbance by only using the minimum work area required to place poles. Access and work areas would be marked in the field by a biologist prior to construction within desert tortoise and milk-vetch habitat.

Permanent disturbance associated with pole placement would consist of the actual location of the poles. It is estimated that a net permanent disturbance of a five-foot diameter circle (0.00045 acres) around each pole would remain to allow for maintenance activities in the future. Therefore, total permanent disturbance associated with the proposed power line would be approximately 0.0882 acres (196 poles x 0.00045 acres/pole), with 0.0581 acres occurring on BLM-administered lands.

The maximum temporary disturbance associated with spur access routes would be 5.0 acres, with 4.16 acres on BLM. Permanent disturbance associated with spur access roads would be 1.48 acres, with 1.14 acres on BLM-administered lands. Of this, 0.61 acre (2,200 feet) would occur outside of the proposed 100-foot ROW. All spur routes created in habitat for the desert tortoise and Holmgren milk-vetch would be temporary and reclaimed after construction.

Permanent disturbance associated with the construction of the Beaver Dam substation would be 2.01 acres located within designated critical habitat for the desert tortoise in the Beaver Dam Slope Area of Critical Environmental Concern (ACEC). Of the 27.36 total acres of temporary disturbance, 6.99 acres would occur in designated critical habitat for the desert tortoise. Approximately 4.38 acres of temporary disturbance would occur within designated critical habitat for the Holmgren milk-vetch. Of the 3.57 total acres of permanent disturbance, 2.04 acres would occur in designated critical habitat for the desert tortoise. Approximately 0.02 acres of permanent disturbance would occur in designated critical habitat for Holmgren milk-vetch. The project would not affect any habitat outside of designated critical habitat for these species as all habitat in the action area is designated critical habitat.

### **Reclamation Plan**

Reclamation of disturbed areas would include all temporary disturbance areas as listed in Table 2 of the BA. A total of 27.36 acres of temporary disturbance would occur from the installation of the transmission line. This is an estimate and it is likely that the actual amount of disturbed acres would be less, as every effort would be made to minimize the amount of workspace needed. Reclamation of disturbed areas would take place during the optimum seeding period of November through January; seeding during this time would take advantage of winter and early spring precipitation. This period also coincides with the inactive season of the desert tortoise and non-flowering period for the Holmgren milk-vetch. Reclamation would include soil preparation, seed-bed preparation, and seeding as described below.

A formal reclamation plan has been developed for the project (BA Appendix D) and would be implemented as part of the proposed action.

### ***Soil Preparation Activities***

The purpose of reclamation is generally understood to mean revegetation of disturbed soils to reduce erosion, restore native habitats, and improve aesthetics. Restoration aims to reestablish native vegetation in order to restore and maintain ecosystem integrity. With the exception of nine spur roads, all temporarily disturbed areas where digging or other earth-moving activities would be done would be re-contoured immediately after construction is complete. Every effort would be made to return the landscape to its pre-construction condition.

Hand shovels, rakes, and a chain-link mat would be used for furrowing and disking to improve soil aeration, break up disturbed and compacted surface soils, and create small ridges (micro-contouring) to retain moisture where seeds are planted.

### ***Seed-bed preparation***

“Water harvesting” or micro-contouring techniques may be employed on the surface areas where seeding would take place so that available moisture will collect and stay where seeds are planted. Some roughness would be left on the soil surface so that snow, sleet, and rain will collect in pockets to increase the available water for germinating seeds.

### ***Seed Source***

A native seed mix/mixes to be used in the restoration measures were developed through discussions with the BLM and FWS. The seed mix/mixes include dominant native shrubs, forbs, and perennial grasses. It is estimated that three different seed mixes would be required dependent upon elevation and habitat (desert tortoise habitat, Holmgren milk-vetch habitat, and the higher elevation areas between the two). An approved seed supplier (Granite Seed Company) has been identified.

The following seed mix is proposed within desert tortoise habitat:

<u>Species</u>	<u>Pound/Acre</u>
Winterfat ( <i>Krascheninnikovia lanata</i> )	1.0
Creosote Bush ( <i>Larrea tridentata</i> )	1.0
Ephedra ( <i>Ephedra nevadensis</i> )	2.0
Indian Ricegrass ( <i>Achnatherum hymenoides</i> )	1.0
White Bursage ( <i>Ambrosia dumosa</i> )	1.5
Four-Wing Saltbush ( <i>Atriplex canescens</i> )	2.0
Encelia ( <i>Encelia virginiensis</i> )	1.5
Desert Marigold ( <i>Baileya multiradiata</i> )	0.5
Desert Globemallow ( <i>Sphaeralcea ambigua</i> )	1.5
Galleta Grass ( <i>Hilaria rigida</i> )	<u>1.0</u>
Total	13.0

A light (4 to 6 lbs/acre) seed mix of shrubs only is the preferred seed mix for Holmgren milk-vetch habitat. The following seed mix is proposed within milk-vetch habitat:

<u>Species</u>	<u>Pound/Acre</u>
Burrobrush ( <i>Hymenoclea salsola</i> )	0.25
Blackbrush ( <i>Coleogyne ramosissima</i> )	2.0
White bursage ( <i>Ambrosia dumosa</i> )	1.5
Torrey's Jointfir ( <i>Ephedra torreyana</i> )	1.0
Winterfat ( <i>Krascheninnikovia lanata</i> )	<u>1.0</u>
Total	5.75

Some alternative shrub species would include the following:

Shadscale ( <i>Atriplex confertifolia</i> )	2.0
Brittlebush ( <i>Encelia virginensis</i> )	1.0
Mormon Tea ( <i>Ephedra nevadensis</i> )	1.0
Hopsage ( <i>Grayia spinosa</i> )	<u>0.25</u>
Total	4.25

### ***Seeding***

The seed mixes are designed to restore pre-construction community assemblages within the areas disturbed by construction activities. JBR Environmental Consultants, Inc. biologists and botanists would work closely with BLM botanists to ensure the best replanting techniques for restoration of native plant communities are used. These techniques include hand raking, broadcast seeding, and pulling of a chain-link mat over the soil to cover up the seed. This method slightly buries the seed for good soil contact and protection from seed-eating insects and rodents. An OHV would be used during hand seeding and pulling of the chain-link mat, requiring two passes across the disturbed areas.

### ***Reclamation Monitoring***

Newly seeded vegetation will take at least two to five years to become established. Due to limited rainfall and local soil conditions, the success of the restoration effort cannot be fully evaluated for at least three years following reseeding. Reseeding or initial over-seeding of some sites may be necessary. During the three-year reestablishment time, follow-up seeding, erosion control, or other corrective measures may be needed on areas of surface disturbance where initial restoration efforts fail. Monitoring and final evaluation of the success of this plan will also be the responsibility of Dixie Escalante in close coordination with the BLM. Reclamation success would be monitored and achieved by meeting the project objectives listed in Section 2.0 of the BA.

Monitoring will include establishing 15 randomly selected, permanent vegetation sampling points at 15 of the pole sites. The sampling points would be identified with a GPS unit and marked with a piece of rebar so that the same site will be sampled every year. The 15 sampling points will include 5 points in each of the following habitats: Holmgren milk-vetch, desert tortoise, and the higher elevation areas between them. During the first year after reclamation, the



adjacent undisturbed area at each of the 15 sampling sites will also be sampled to achieve a baseline percent cover of perennial species. Reclamation success will be based on this baseline sampling. Sampling of the 15 sampling points will be done every year for the first three years. Percent cover of perennial species will be measured by sampling 10 (3 foot x 3 foot) quadrats along a 100-foot tape measure at each vegetation sampling point. Photos will also be taken at each vegetation sampling point each year to further document the status of reclamation.

If the 15 vegetation sampling points reach at least 50 percent of the established baseline percent cover within three years of completion of restoration efforts, then reclamation will be deemed a success. Should the objective not be achieved, Dixie Escalante will be responsible for further restoration activities or shall provide monetary compensation to BLM to complete restoration.

### **Conservation Measures**

The following conservation measures will be incorporated into the proposed action in order to enhance beneficial effects and minimize adverse effects to California condors, southwestern willow flycatchers, Mojave desert tortoises, and the Holmgren milk-vetch.

#### ***General***

- Dixie Escalante and the BLM will designate a field contact representative (FCR) who will be responsible for overseeing compliance with protective stipulations for listed species and for coordination on compliance with FWS. The FCR will be an authorized biologist, but will not be required to be on site at all times. The FCR, or another authorized biologist, will be onsite during all project activities in Holmgren milk-vetch habitat and in desert tortoise habitat during the active period (March 15 – October 15). The FCR will have the authority to halt all activities that are in violation of the stipulations. The FCR will have a copy of all stipulations when work is being conducted onsite.
- The FCR will have the authority to halt all non-emergency project activity should danger to a listed species arise. Work will proceed only after hazards to the listed species are removed, the species is no longer at risk, or the individual has been moved from harm's way by the authorized biologist.
- Authorized biologists will maintain a record of all special status species encountered during biological surveys and monitoring.
- All activities will be restricted to the approved ROW, approved existing and proposed access roads, and staging areas.
- To the extent possible, previously disturbed areas within the action area will be used for temporary storage areas, laydown sites, and any other surface-disturbing activities.
- Cross-country vehicular travel outside of the ROW will be prohibited except for approved access to pole locations.
- Incidences of observations of listed species and their sign during construction activities will be conveyed to the FCR and/or authorized biologist.

- Prior to project initiation, all construction related equipment will be cleaned of soils, seeds, vegetative matter, or other debris or matter that could contain or hold noxious seeds. The cleaning of equipment will also be done any time thereafter if the equipment leaves the action area, is used on another project, and reenters the action area. In addition, and in order to prevent the northward spread of Sahara mustard (*Brassica tournefortii*), the cleaning of equipment will also be done before entering Utah following work in Arizona. A certified weed-free seed mix approved by BLM will be used during reclamation activities and will utilize native species found in the area. Dixie Escalante will be held accountable for control of any future weed outbreaks along the alignment.

### ***Holmgren Milk-vetch and Designated Critical Habitat***

- Pre-project site inventories will be completed for all ground-disturbing activities within a half mile of known Holmgren milk-vetch occupied sites.
- Site inventories will be conducted by qualified individuals.
- Site inventories will be conducted to determine habitat suitability.
- Site inventories will be required in known or potential habitat for all areas proposed for disturbance prior to initiation of project activities, at a time when the plant can be detected, such as during flowering periods from mid April through May.
- Soil disturbance will be reduced to the minimum that is needed, without compromising safety.
- Areas for avoidance will be flagged in the field.
- New access routes will be limited.
- Project personnel will stay on designated routes and in the ROW.
- Soils will be controlled to avoid concentrated water flows or sediments into occupied habitat.
- A native seed mix comprised of plant species in the area and approved by BLM will be used for reclamation of temporary disturbances.
- The top two inches of topsoil within a 10 x 10 foot-disturbance area centered at each pole location (i.e., long-term, temporary disturbance area) will be salvaged and replaced after pole placement is completed. Stockpiled soil will typically be spread back out within three days of stockpiling. Soils will never be stockpiled for more than 14 days.

- A biological monitor with previous Holmgren milk-vetch experience will be onsite during construction activities in Holmgren milk-vetch habitat to ensure that disturbances are minimized, that all activities remain limited to identified areas, and that other requirements are met.
- All new access routes and 100 x 50 foot work areas will be delineated with flagging prior to construction.
- Only rubber tired vehicles and equipment will be used.
- Construction personnel will carpool to construction sites in order to reduce the number of vehicles in the habitat.
- Project activities will only occur after the growing season of the milk-vetch (June 1 through January 31).
- During wet weather, project activities will cease if construction equipment causes ruts in the ground greater than four inches.
- Four previously disturbed areas identified for pullout areas will be used to allow construction traffic to pass (Figure 3 of the BA).
- All restoration techniques will be designed to achieve rehabilitation criteria established by BLM and will be conducted during the first fall/winter period following construction.
- Reclamation will be conducted and/or supervised by biologists with previous Holmgren milk-vetch experience.
- Dixie Escalante will construct and maintain three miles of range fence in milk-vetch habitat in order to deter unauthorized off-road travel in the area (Figure 3 of the BA). The fence will be constructed along the west side of the main access road that parallels the power line from the Port of Entry to the Utah-Arizona state line, approximately 1.5 miles. In Arizona, the fence will be constructed along both sides of the same main access road described above for approximately 0.75 miles. The fence will be a standard four-strand barbed wire range fence. The fence will be constructed by hand with construction equipment restricted to existing access. Dixie Escalante will be responsible for monthly monitoring, reporting, and maintenance of the fence for a term of one year. In addition to the fence, a cattle guard will be installed near the Port of Entry to allow access on an existing road, but to limit the movement of cattle.

#### ***Desert Tortoises and Designated Critical Habitat***

- All Dixie Escalante employees and its contractors involved with the project will be required to complete a sensitive resources education program. The program will be approved by the FWS and BLM. The program will cover the distribution, general behavior, and ecology of listed species; sensitivity to human activities; legal protections; penalties for violation of state and

Federal laws; reporting requirements; and minimization measures. In addition, the program will include fire prevention measures to be implemented during the project.

- To the extent possible, the project features will be located in previously-disturbed areas or outside of desert tortoise habitat.
- During the inactive season, authorized biologists will periodically inspect the project to ensure compliance with stipulations.
- In Arizona, within suitable tortoise habitat that has not been previously disturbed, construction activities will not occur during the tortoise active season (March 15 through October 15) along the portion of the project route going from the Arizona-Utah border extending south and west to Highway 91 as well as the staging area/substation that is located immediately north of Beaver Dam High School.
- In Arizona, within suitable tortoise habitat that has been previously disturbed, construction activities may occur during the tortoise active season (March 15 through October 15). These areas are located along Highway 91 and have been recently disturbed by installation of a fiber optic line. An authorized biologist must be present during activities in these areas during the tortoise active season.
- Within suitable tortoise habitat and during the tortoise active season (March 15 through October 15), or when temperatures and environmental conditions are conducive to tortoise activity, as determined by an authorized biologist, an authorized biologist will be present during construction and all surface-disturbing activities.
- When working in desert tortoise habitat during the active season, an authorized biologist will be assigned to each area where operation of large equipment (e.g., clearing, grading, trenching, lowering in) is occurring. An authorized biologist will also be assigned to all backfilling, contouring, and reclamation activities.
- An authorized biologist will be responsible for determining compliance with measures as defined by the BO or other agreements between Dixie Escalante and agencies.
- Prior to any surface-disturbing activities, work sites will be surveyed for desert tortoises by a qualified biologist approved by BLM and/or FWS. Areas of new disturbance will be surveyed with 100-percent coverage. The project activities will be stopped until the tortoise moves off on its own or is moved out of harm's way by the authorized biologist.
- Between October 15 and March 15, a 100-percent coverage survey will be conducted within one week of the project activities within tortoise habitat. During surveys, occupied desert tortoise burrows in or within 40 feet of areas to be disturbed will be excavated using hand tools under the supervision of an authorized biologist. Tortoises discovered in burrows will be relocated. Burrows will then be collapsed or blocked to prevent entry by tortoises.

- Between March 15 and October 15, surveys will be conducted within 24 hours of initiation of surface-disturbing activities within desert tortoise habitat.
- Only biologists authorized and permitted by the FWS and UDWR and/or AGFD will handle desert tortoises and their eggs. Additional biologists can be authorized if BLM submits the name(s) of the proposed authorized biologist(s) to the FWS and the appropriate state agency for review and approval at least 15 days prior to the onset of activities that can result in a take. Minimum requirements for authorized biologists include attending the Desert Tortoise Council's training course for handling desert tortoises and/or training by an authorized biologist. Authorized biologists must have all valid state and Federal permits.
- All desert tortoise burrows or pallets in the action area that cannot be avoided will be excavated by an authorized biologist or blocked. All desert tortoise burrows and pallets that fall outside of but within 50 feet of the construction work area will be flagged for avoidance. No stakes or flagging will be placed on the berm or in the mouth of a desert tortoise burrow. Desert tortoise burrows will not be marked in a manner that facilitates poaching. Avoidance flagging will be designed in consultation with experienced construction personnel and authorized biologists.
- An authorized biologist will be assigned to each blasting crew or area in which blasting will occur if blasting is required in desert tortoise habitat. Prior to any blast, a 200-foot area around the blast site will be surveyed for desert tortoises. Above-ground tortoises will be relocated at least 500 feet from the blast site. Burrows occupied by tortoises within 50 feet of the blast site will be flagged and stuffed with newspaper prior to the blast and burrows assessed for damage following the blast.
- If a tortoise or clutch of tortoise eggs is found in the action area, activities will be modified, to the extent practicable, to avoid injuring or harming it. If activities cannot be modified, the tortoise/clutch will be moved from harm's way by an authorized biologist the minimum distance possible within appropriate habitat to ensure its safety from death, injury, or collection associated with the project or other activities. Desert tortoises/clutches will not be translocated to lands outside the administration of the Federal government without the written permission of the landowner. Handling procedures for desert tortoises and their eggs will adhere to protocols outlined in Desert Tortoise Council (1999), including that nests will be re-orientated in the same in-ground orientation, aspect, slope, and depth.
- Desert tortoises that are found above-ground that need to be moved from harm's way will be placed in the shade of a shrub in adjacent undisturbed habitat a minimum of 300 feet away from construction activities.
- Desert tortoises moved during inactive periods will be monitored for at least two days after placement in new burrows.
- Tortoises excavated from unavoidable burrows along the route will be relocated to unoccupied, natural or artificially constructed burrows immediately following excavation. The artificial or natural burrow will be located 150 to 300 feet from the original burrow and

will be similar in size, shape, and orientation to the original burrow. Relocated tortoises will not be placed in occupied burrows.

- Tortoises will be handled using disposable surgical gloves. The gloves will be disposed of after handling each tortoise. Other equipment will be sterilized or changed between uses.
- The authorized biologist will maintain a record of all desert tortoises encountered during project activities. This information will include:
  1. The locations and dates of observation.
  2. General condition and health, including injuries and state of healing and whether animals voided their bladders.
  3. Location moved from and location moved to.
  4. Diagnostic markings (i.e. identification numbers of marked lateral scutes).
- Desert tortoises that are handled will be marked for future identification. An identification number (using the acrylic paint/epoxy technique) will be placed on the fourth costal scute (USFWS 1992). No notching of scutes or replacement of fluids with a syringe will occur.
- A trash abatement program will be initiated during pre-construction phases of the project, and will continue through the duration of the project. Trash and food items will be contained in closed (raven-proof) containers and removed regularly (at least once a week) to reduce attractiveness to opportunistic predators such as ravens, coyotes, and feral dogs.
- Firearms and domestic dogs will be prohibited from the project.
- Any fuel or hazardous waste leaks or spills will be stopped/repared immediately and cleaned up at the time of the occurrence in accordance with a FWS-approved spill clean-up plan. The storage and handling of hazardous materials will be excluded within 100 feet of active tortoise burrows and wash crossings. Any unused or leftover hazardous products will be properly disposed of off-site.
- All restoration techniques will be designed to achieve rehabilitation criteria established by BLM and will be conducted during the first tortoise inactive period (October 15 to March 15) following construction. Reclamation will be conducted and/or supervised by authorized biologists within desert tortoise habitat.
- Efforts will be made to minimize impacts on vegetation and soils in the construction corridor. All new access routes and work areas within tortoise habitat will be delineated with flagging.
- Anytime a vehicle or construction equipment is parked longer than two minutes in desert tortoise habitat, the ground around and under the vehicle or equipment will be inspected for desert tortoises before the vehicle or equipment is moved. If a desert tortoise is observed, it will be left to move on its own. If this does not occur within 15 minutes, an authorized biologist will remove and relocate the tortoise.

- Within desert tortoise habitat, any construction pipe, culvert, or similar structure with a diameter greater than three inches stored less than eight inches above the ground for one or more nights will be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored on the construction site.
- Open trenches and other open excavations will be fenced with temporary tortoise-proof fencing, covered at the close of each work day, or provided with tortoise escape ramps. All excavations in tortoise habitat will be inspected periodically throughout and at the end of each work day and immediately before backfilling. Temporary tortoise-proof fencing will consist of silt fence, or similar, buried at least 6 inches and supported by wooden stakes.
- Water will be applied to the ROW as needed for dust control. During the desert tortoise active season, an authorized biologist will be assigned to patrol each area being watered. An authorized biologist will patrol the area immediately after the water is applied and at approximately 60-minute intervals until the ground is no longer wet enough to attract tortoises.
- Cacti, yucca, and agave species will be avoided, transplanted adjacent to the disturbance area, and/or re-transplanted back into the disturbance area after surface-disturbing activities are completed.
- Areas of new construction disturbance will be flagged or marked on the ground prior to construction. All construction workers will strictly limit their activities and vehicles to areas that have been marked. Construction personnel will be trained to recognize markers and understand the equipment movement restrictions involved.
- The proposed substation will be enclosed with permanent desert tortoise barrier fencing to prevent tortoises from wandering onto the project site where they may be subject to collection, death, or injury. Barrier fencing will consist of wire mesh with a maximum mesh size of one-inch (horizontal) by two-inch (vertical) fastened securely to the chain-link fence. The wire mesh will extend at least 18 inches above the ground and 12 inches below the surface of the ground. Where burial is not possible, the lower 12 inches will be folded outward, away from the enclosed site, and fastened to the ground so as to prevent tortoise entry.
- Blading of work areas will be minimized to the extent possible. Disturbance to shrubs will be avoided if possible. If shrubs cannot be avoided during equipment operation or vehicle use, wherever possible they will be crushed rather than excavated or bladed.
- At no time will vehicle or equipment fluids be dumped on public lands. All accidental spills will be reported to BLM and 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 will be promptly reported to the appropriate State agency and the BLM.
- Temporary access routes within the Beaver Dam Slope ACEC, created during project construction, will be modified as necessary to prevent further use. The existing road side fence will be reestablished.

- Upon project completion, all construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes, will be removed from the site and disposed of properly.
- After completion of the project, trenches, pits, and other features in which tortoises can be entrapped or entangled, will be filled in, covered, or otherwise modified so they are no longer a hazard to desert tortoises.
- Permanent and temporary loss of desert tortoise habitat affected during construction will be compensated. Dixie-Escalante will offset these effects through either an acceptable land acquisition or an assessed financial contribution, based on the final construction footprint. The compensation ratio for temporary loss of undisturbed desert tortoise critical habitat is a 5:1 ratio, while disturbed critical habitat will be replaced/rehabilitated at a 3:1 ratio.

## **STATUS OF THE SPECIES**

### Desert Tortoise (Mojave Population)

The desert tortoise populations north and west of the Colorado River in Arizona and Utah (excluding the Beaver Dam slope population) were listed as endangered under an emergency rule on August 4, 1989 (54 FR 42270). Subsequently, the entire Mojave population of the desert tortoise west of the Colorado River in California and Nevada, and north of the river in Arizona and Utah, including the Beaver Dam slope, was listed as a threatened species on April 2, 1990 (55 FR 12178). Critical habitat was designated in 1994 (59 FR 5820-5846, also see corrections at 59 FR 9032-9036). The Desert Tortoise (Mojave Population) Recovery Plan (Recovery Plan) (USFWS 1994) was signed on June 28, 1994; however, it is currently being revised and is expected to be finalized in 2009.

The desert tortoise is an arid land reptile associated with desert scrub vegetation types, primarily creosote bush (*Larrea tridentata*) flats, washes, and hillside slopes or bajadas. A robust herbaceous component to the shrubs and cacti of the creosote bush vegetation type is an important component of suitable habitat. Within these vegetation types, desert tortoises potentially can survive and reproduce where their basic habitat requirements are met: a sufficient amount and quality of forage species; shelter sites for protection from predators and environmental extremes; suitable substrates for burrowing, nesting, and over-wintering; various plants for shelter; and adequate area for movement, dispersal, and gene flow. Further information on the range, biology, and ecology of the desert tortoise can be found in the Recovery Plan (USFWS 1994).

Desert tortoises are most active during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rain storms. In Arizona, tortoises are considered to be active from approximately March 15 through October 15. Desert tortoises spend the remainder of the year in burrows, escaping the extreme conditions of the desert.



Desert tortoise home range sizes vary with respect to location and year. Over its lifetime, each desert tortoise may require more than 1.5 square miles of habitat and make forays of more than seven miles at a time (Berry 1986). During droughts, tortoises forage over larger areas, increasing the likelihood of injury or mortality through encounters with humans and predators. Direct loss of tortoises has occurred from illegal collection by humans for pets or consumption, Upper Respiratory Tract Disease (URTD), predation on juvenile desert tortoises by common ravens (*Corvus corax*) and kit foxes (*Vulpes macrotis*), and collisions with vehicles on paved and unpaved roads. Other threats affecting the desert tortoise include loss of habitat from construction projects such as roads, housing and energy developments, and conversion of native habitat to agriculture.

Grazing and OHV activities have degraded additional habitat. Fire is an increasingly important threat because it degrades or eliminates habitat (Appendix D of USFWS 1994). Following wildfire, native plant species are often replaced by invasive, non-native species such as red brome (*Bromus rubens*) and cheat grass (*Bromus tectorum*), resulting in long-term habitat degradation or loss. Over 500,000 acres of desert lands burned in the Mojave Desert in the 1980s and approximately 500,000 acres burned in the northeastern Mojave Desert in 2005. Over 20,000 acres of Mojave Desert burned on the Arizona Strip in 2006.

The Recovery Plan divides the range of the desert tortoise into six recovery units (RUs) and recommends establishment of 14 Desert Wildlife Management Areas (DWMAs) throughout the RUs. These DWMAs have since been designated as “desert tortoise areas of critical environmental concern” (ACECs) by the BLM through development or modification of their land use plans in Arizona, Nevada, Utah, and California. Recovery of the desert tortoise may occur at the RU level, which allows populations within each of the six RUs to be recovered and delisted individually.

The Northeastern Mojave Recovery Unit occurs primarily in Nevada, but it also extends into California along the Ivanpah Valley and into extreme southwestern Utah (Beaver Dam Slope population) and northwestern Arizona. Vegetation within this unit is characterized by creosote bush scrub, big galleta-scrub steppe, desert needlegrass scrub-steppe, and blackbrush scrub (in higher elevations). Topography is varied, with flats, valleys, alluvial fans, washes, and rocky slopes. Much of the northern portion of the Northeastern Mojave Recovery Unit is characterized as basin and range, with elevations from 2,500 to 12,000 feet. Desert tortoises typically eat summer and winter annuals, cacti, and perennial grasses. They den in caves, bajadas, and washes (Woodbury and Hardy 1948).

Permanent plots were established in the 1970s to monitor tortoise populations, and some of these plots were surveyed through 2002. However, surveys at that time in the Northeastern Mojave RU (Nevada, Utah, and Arizona) and some other RUs detected too few live tortoises to determine a population trend. Line distance sampling was used to monitor populations across the range of the desert tortoise from 2001 through 2005. Recent surveys have indicated that desert tortoises in this recovery unit, the northern portion of which represents the northernmost distribution of the species, are typically found in low densities (about 10 to 20 adults per square mile). Tortoise populations have declined significantly in the Western Mojave and appear to be declining in the Eastern Mojave RUs in California (Tracy *et al.* 2004).

In 2003, the U.S. Fish and Wildlife Service convened the Desert Tortoise Recovery Plan Assessment Committee (DTRPAC) to scientifically assess the Desert Tortoise Recovery Plan. The DTRPAC Report (Tracy *et al.* 2004) produced a number of findings and recommendations that serve as the basis for revision of the 1994 Recovery Plan, which is expected to be completed in 2009. In particular, this report recognizes that threats to the desert tortoise have cumulative, synergistic, and interactive effects, and that tortoise recovery depends on managing multiple threats. Threats facing desert tortoises have been increasing since the 1994 Recovery Plan, including in the Northeastern Mojave RU, and recovery actions have not been fully implemented. The DTRPAC Report also recognizes that tortoise populations may be distributed in metapopulations rather than single, large populations in RUs. In addition to reducing multiple threats within management areas, it is important to protect the corridors among habitat patches. For recovery, tortoise metapopulations require areas of suitable habitat, but these areas may be periodically vacant of tortoises.

Section 7 consultations since 1994 on various human actions have addressed the effects of those actions on the desert tortoise and the conservation value of the critical habitat units. The most recent major consultations on the Mojave desert tortoise in California were on the California Desert Conservation Area Plan (USFWS 2002) and the 2006 biological opinion for the West Mojave Plan Amendment (USFWS 2006), which contained summaries of the status of the species and its critical habitat in California. In Nevada, consultations with three BLM offices (Las Vegas, Ely, and Battle Mountain) addressed most impacts to tortoises and designated critical habitat from land management practices. Grazing continues to occur on BLM lands across the Arizona Strip. Several of these grazing allotments are also in DWMAs/ACECs and continue to affect desert tortoises and their critical habitat.

Mojave desert tortoise management in Arizona is covered primarily by the 2008 Arizona Strip Resource Management Plan for BLM lands in northern Arizona (file numbers 22410-2002-F-0277-R1 and 22410-2007-F-0463). The Mojave desert tortoise is the primary species covered by the Clark County Multiple Species Habitat Conservation Plan (HCP) in Clark County, Nevada (Regional Environmental Consultants 2000). Additionally, the Washington County HCP in Utah established the Red Cliffs Desert Reserve to protect desert tortoises and their habitat. Conservation actions for the species in these HCPs include protection for both individuals and habitat.

In the final rule designating desert tortoise critical habitat, FWS determined that desert tortoise habitat consists of the following primary constituent elements: (1) sufficient space to support viable populations within each of the six RUs and provide for movement, dispersal, and gene flow; (2) sufficient quantity and quality of forage species and the proper soil conditions to provide for the growth of such species; (3) suitable substrates for burrowing, nesting, and overwintering; (4) burrows, caliche caves, and other shelter sites; (5) sufficient vegetation for shelter from temperature extremes and predators; and (6) habitat protected from disturbance and human-caused mortality (USFWS 1994).

The year 2005 was a particularly bad wildfire year for desert tortoises. That year, much of the Southwest received nearly twice the average annual winter-spring precipitation. This resulted in lush vegetative growth during spring and summer. Large wildfires occurred across southwestern

Utah, southern Nevada, and northwestern Arizona during summer 2005 and again in 2006. In the Northeastern Mojave RU, wildfires burned 124,782 acres of critical habitat, approximately 11 percent of the critical habitat in this unit. Most vegetation was burned off during these fires, with a loss of forage available for Mojave desert tortoise and loss of shrubs to provide shelter from temperature extremes and predators. Many of the primary constituent elements for critical habitat were severely impacted by these fires.

A full description of the Status of the Species for the Mojave desert tortoise and critical habitat can be found in the administrative record for this consultation.

### **Holmgren Milk-vetch and Critical Habitat**

Holmgren milk-vetch was listed as endangered on September 28, 2001 (66 FR 49560) without critical habitat. Critical habitat was designated on December 17, 2006 (71 FR 77972). A recovery plan for the species was completed in September 2006.

A member of the pea family (Fabaceae), the species is an herbaceous perennial that produces small purple flowers in the spring and dies back to its root crown after the flowering season. The leaves are pinnately compound and arise directly from the root crown. Leaves are pressed close to the ground; leaflets are 0.8-1.6 cm and oval-shaped with the narrow end towards the base of the leaf. Fruits are pods 3-5 cm long and 0.6-0.9 cm in diameter and are curved, elliptic, and have a beak at the tip.

Leaves appear as early as January. Flowering stems produce several white and purple flowers in April. Fruits appear as early as April. Native bees are the primary pollinators of the species. Flowers on some individuals can produce fruit without insect visitation (i.e., autogamously). However, self-fertilized flowers produce fewer fruits, which can negatively influence the number of offspring. Seeds are thought to be dispersed by water as plants are generally found on the skirt edges of washes or in run-off channels around mounds. Rodents and smaller ground-dwelling birds may also be dispersal agents.

Holmgren milk-vetch is a Mojave Desert endemic in southwestern Utah and northwestern Arizona. It is a short-lived perennial that occurs primarily on gravelly slopes and washes on the Virgin limestone member of the Moenkopi Formation. Populations are found between 756 and 914 m elevation in areas that drain to the Santa Clara and Virgin rivers.

Only three populations are known. The primary population exists on the Arizona (Mohave County) and Utah (Washington County) border, and the other two occur in Washington County, Utah. All populations are within 15 km of St. George, Utah.

Annual fluctuations in the number of individuals within a population are great. Years with adequate precipitation produced a population estimated at 10,000 individuals, while populations in dry years may be as few as 500 individuals. More seedlings are found when precipitation in the first quarter of the year is higher. In recent years (2000-2004), high flushes of seedlings have been coupled with a low survivorship rate (58.9-96.8 percent mortality) most likely due to the timing of precipitation. The mortality has resulted in relatively few reproductive adults.

Although the landscape holds an unknown quantity of seeds, high mortality may be depleting the seed bank. Low survivorship and reproductive results make this species more vulnerable to extinction. There is no current total population estimate. The overall population trend for this species is significant decline. Disappearance and/or a large reduction of individuals have been observed in the Utah populations (ASDO 2007).

The primary threats to the species are loss of habitat due to urban expansion and development, road/highway construction, off-road vehicle use, displacement by exotic weeds, mining, and mineral exploration. The small number of populations and restricted habitat of this species make it vulnerable to human-caused and natural environmental disturbances. The primary population is threatened by a proposed interchange that will connect Interstate 15 to the proposed Southern Corridor highway, other habitat loss associated with the highway, and residential and commercial development.

Holmgren milk-vetch critical habitat occurs in three units (USFWS 2006). Unit 1 encompasses 5,546 acres and contains three subunits known as Central Valley (1,146 acres), Gardner Well (564 acres), and State Line (3,836 acres). The Central Valley Subunit occurs in Washington County, Utah, between the Atkinville and Fort Pearce washes. The Gardner Well Subunit is in Mohave County, Arizona, just south of the Arizona-Utah border and west of Atkinville Wash. The State Line Subunit is almost centered on the intersection of the Arizona-Utah border and Interstate 15. Unit 2 encompasses 567 acres and contains two subunits known as Stucki Spring (438 acres) and South Hills (129 acres). Unit 2 is in Washington County, Utah southwest of Santa Clara. Unit 3 is known as Purgatory Flat, encompassing 176 acres, and is in Washington County, Utah, west of the Virgin River.

Within the critical habitat units, the primary constituent elements of Holmgren milk-vetch critical habitat are:

- Appropriate geological layers or soils that support individual *Astragalus holmgreniorum* plants. These include the Virgin Limestone member, middle red member, and upper red member of the Moenkopi Formation, and the Petrified Forest member of the Chinle Formation. Associated soils are Badland; Badland, very steep; Eroded land-Shalet complex, warm; Hobog-rock land association; Isom cobbly sandy loam; Ruesh very gravelly fine sandy loam; Gypill Hobog complex, 6 to 35 percent slopes; Gypill very cobbly sandy loam, 15 to 40 percent slopes; and Hobog- Grapevine complex, 2 to 35 percent slopes.
- Topographic features/relief (mesas, ridge remnants, alluvial fans and fan terraces, their summits and backslopes, and gently rolling to steep swales) and the drainage areas along formation edges with little to moderate slope (0 to 20 percent).
- The presence of insect visitors or pollinators, such as *Anthophora captognatha*, *A. damnersi*, *A. porterae*, other *Anthophora* species, *Eucera quadricincta*, *Omia titus*, and two types of *Dialictus* species.

## **ENVIRONMENTAL BASELINE**

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions that are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

### **A. Status of the species within the action area**

#### **Desert Tortoise and Critical Habitat**

A portion of the project is located within the Beaver Dam Slope ACEC in both Utah and Arizona. The tortoises that inhabit the Beaver Dam Slope ACEC are within the Northeastern Mojave RU. This entire ACEC is critical habitat and encompasses 42,700 acres, a very small portion of the entire RU, which covers three states. This large unit ranges from south of Las Vegas, Nevada, to the slopes of the Beaver Dam Mountains and includes habitat in western California; therefore behavioral and phenotypic differences exist within the unit. Beaver Dam Slope tortoises and the Upper Virgin River tortoises of southern Utah are characterized as colonial, a unique characteristic setting them apart from their southern solitary counterparts. These tortoises can dig complex dens up to 20-30 feet in depth, which can possess many rooms and chambers.

Density estimates for this ACEC are considered very low, as previously described, and do not contribute significantly to the overall population of the RU. Wildfires have degraded the overall conditions of portions of this ACEC. Additionally, grazing continues in both Arizona and Utah, although allotments in both states are grazed primarily during the tortoise inactive season (October 15 through March 15). Tortoises in this ACEC as well as throughout this portion of the RU, have been found to have URTD and cutaneous dyskeratosis (CD) (USFWS 1994; Goodlett and Woodman, 2003). CD is a shell disease that often results in the flaking and loss of scute laminae and thinning in bones, which could be a sign of toxic material taken up by the animal (Goodlett and Woodman, 2003). According to the final rule designating critical habitat, each critical habitat unit has both a local role and a rangewide role in contributing to the conservation of the species. The loss of a single unit may not jeopardize the continued existence of the species but may significantly reduce the ability of critical habitat to contribute to recovery (59 FR 5820-5846)

Surveys were conducted in April 2007 within a 100-foot corridor along the proposed project route on the west side of the Beaver Dam Mountains, from approximately Bulldog Knolls, Utah to Beaver Dam, Arizona. Surveyors observed eight active tortoise burrows, six inactive tortoise burrows, and one tortoise mating ring. Additionally, one adult carcass and one live adult tortoise were observed. During tortoise surveys that were completed for a fiber-optic line that was placed along the same route proposed for this transmission line (Highway 91 ROW), no tortoise or tortoise sign were observed within the fiber-optic line ROW; however, a live tortoise was observed within 100 meters of the ROW. Despite their colonial nature in this RU, we estimate

that between one and eight tortoises occur within the project area based on the survey data provided in the BA (including burrow locations), their known home range sizes, and the overall low population density in this RU.

Given the wide-range of this species, several Federal actions affect this species every year. A complete list of all consultations affecting this species in Arizona can be found in the administrative record for this consultation. Survey work and recovery projects also occur periodically and are summarized in AGFD and UDWR agency documents and the BA associated with this project.

### **Holmgren Milk-Vetch and Critical Habitat**

Holmgren milk-vetch is known to occur on BLM and Arizona State land at a few very small and scattered locations in the project area. Initially, the Curly Hollow plot on Arizona State land was the only trend plot for the species in Arizona. The plot is 96 x 96 feet in size and was established to obtain long-term demographic data for this species. The species was observed and reproduction was monitored in March and April on the trend plot from 1988 through 2003. From 1988 through 1995, the numbers of individuals were variable (range 0-283) but essentially declining. From 1996 through 1999, there were almost no individuals in the plot. From 2000 through 2003, no individuals were observed in the plot.

The known occurrence of Holmgren milk-vetch on BLM land within the project area is in an area approximately five acres in size; however primary constituent elements for critical habitat are found throughout the 3,836-acre State Line Subunit. That population was found in 2004 and a transect was established. There are no permanent plots or tagged individuals, but the transect contained 35 adult individuals and five seedlings in 2005. All the known habitat of the species on BLM land within the project area is within the designated critical habitat. Of the 5,546 acres of critical habitat in Unit 1, including the 3,836 acres in the subunit that the project is located in, 1,881 acres of Holmgren milk-vetch critical habitat occur in the project area. Of that total, 1,498 acres are on Arizona State land. Only 362 acres of critical habitat are on BLM land in the project area.

The current rate of habitat loss in Utah makes the Arizona portion of this critical habitat unit (including all three subunits) very important for the conservation of this species. According to the final rule to designate critical habitat (USFWS 2006), the State Line Subunit has features that are essential to the conservation of the species, and it supports the highest number of individuals documented to date within a continuous geographic area, fragmented only by Interstate 15. The final rule further states that the State Line Subunit of critical habitat is important in that the large population of milk-vetch it contains retains importance as representative of the species' potential range of genetic diversity (USFWS 2006).

### **B. Factors Affecting Species' Environment Within the Action Area**

### **Desert Tortoise and Critical Habitat**

The Beaver Dam Slope ACEC in Arizona contains the Beaver Dam Slope grazing allotment, which is currently on a winter-only grazing rotation. Most impacts from grazing are confined to a small radius around a corral and water tank, located approximately two to three miles east of the project route in Arizona. In Utah, the Beaver Dam Slope ACEC contains the Cliffs Castle Grazing Allotment, which is currently grazed from mid-November through the end of May.

OHV use occurs throughout the ACEC; however, vehicles are restricted to designated roads and trails. BLM allows dispersed camping in the area, but vehicles must stay near or along roadways.

In the summer of 2008, a fiber-optic line was placed along Highway 91 outside of the Beaver Dam Slope ACEC (Utah FWS consultation number 6-UT-07-F-0010/2008-F-0050). As previously mentioned, this fiber-optic line was placed within the Highway 91 ROW and did not result in the loss of any desert tortoise habitat.

Areas of the Beaver Dam Slope ACEC in Utah were burned by wildfires during 2005 and 2006. The Arizona portion of this ACEC in Arizona has not been affected by wildfires.

### **Holmgren Milk-Vetch and Critical Habitat**

Current activities affecting the species in the action area include urban expansion and development, road/highway construction, off-road vehicle use, displacement by exotic weeds, livestock grazing, mining, and mineral exploration. The small number of populations and restricted habitat of this species make it vulnerable to human-caused and natural environmental disturbances. At the current rate of habitat loss for this species in Utah, the population in Arizona has significant conservation status and is very important for the recovery of the species. A recovery plan was finalized in 2006.

### **EFFECTS OF THE PROPOSED ACTION**

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration.

We note that this biological opinion does not rely on the regulatory definition of “destruction or adverse modification” of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statute and the August 6, 2004, Ninth Circuit Court of Appeals decision in *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service* (No. 03-35279) to complete the following analysis with respect to critical habitat.

## Mojave Desert Tortoise

The western portion of the proposed project in Arizona and Utah passes through the Beaver Dam Slope ACEC and designated critical habitat for the desert tortoise. As stated above under “Environmental Baseline”, recent surveys of the proposed project action area detected eight active tortoise burrows, six inactive tortoise burrows, and one tortoise mating ring. Additionally, one adult carcass and one live adult tortoise were observed. A live tortoise was also observed within 100 meters of the ROW during surveys for the adjacent fiber optic line along the Highway 91 ROW.

Although only one live adult desert tortoise was observed within the action area, the presence of eight active burrows, six inactive burrows, and a mating ring suggests that more tortoises could be present. Tortoises are vulnerable to impacts from surface-disturbing activities. If a tortoise wanders into the proposed project construction site, construction activities have the potential to disturb, harm, or kill tortoises. Tortoises may be harmed or killed as a result of being crushed by construction equipment or vehicles along access routes into work areas, or entombed in their burrows or dens. However, the likelihood of tortoise mortality is considered low for this project, given that the surveys have shown the area to have a relatively low density of tortoises and the project area will be frequently checked by a biological monitor. As stated in the conservation measures, the biological monitor will be on-site during all construction activities in desert tortoise habitat to ensure that this project minimizes adverse impacts to any tortoises encountered. Work will occur in Utah at any time of the year, including during the tortoise active period of March 15 through October 15. Although this will increase the likelihood of encountering tortoises during construction activities, the presence of a biological monitor, as well as the rest of the conservation measures, will reduce the chances of encounters. Additionally, work will only occur in occupied desert tortoise habitat in Arizona during the tortoise inactive period of October 15 through March 15, in accordance with the Arizona Strip BLM Resource Management plan and associated Biological Opinion (22410-2007-F-0463), further reducing the direct effects to tortoises in Arizona.

If necessary, handling tortoises during burrow excavation or relocating them from the project area will also likely cause some level of stress. The conservation measures previously described relating to handling tortoises and eggs, burrow excavation, and relocation will help minimize the stress associated with these activities as well as decrease the chances of causing stress, infections, or mortality associated with non-sterile techniques. Tortoises would be relocated off the project site 150 to 300 feet, allowing them to remain within close proximity to, if not wholly within their current home ranges, further minimizing stress levels. If necessary, artificial burrows will be created to help the tortoises acclimate to their new surroundings. These artificial burrows will be similar in size, shape, and orientation to the original burrows to further aid in acclimation and reduce stress to the tortoises. Additionally, desert tortoise eggs discovered during burrow excavations will be recorded and moved off of the construction site, following Desert Tortoise Council (1999) handling procedures.

Nest orientation, physical location, and timing are important factors to consider when relocating tortoise nests. Numerous aspects of embryonic development and hatchling phenotype, in



addition to survival, are influenced by the abiotic conditions experienced in the nest. These thermal and hydric conditions, in turn, can be affected substantially by nest slope, aspect, and depth (Spotila *et al.* 1994, Kolbe and Janzen 2002, Weisrock and Janzen 1999). Both temperature and substrate moisture content affect hatching success of desert tortoise eggs. High moisture content (4.0 percent soil moisture) is lethal at low temperature (78.8 degrees Fahrenheit) and is probably lethal at 91.4 degrees Fahrenheit (Spotila *et al.* 1994). Additionally, desert tortoises have temperature-dependant sex determination, in which the incubation temperature of the eggs determines their sex (Spotila *et al.* 1994). Therefore, re-burying the eggs at the same depth, same orientation, and same aspect will decrease the likelihood of altering the sex of the embryos and, possibly, diminishing the viability of the eggs.

Although Dixie Escalante intends to have eggs relocated if they cannot be avoided, research also suggests that the timing at which eggs are moved has an overall impact on their viability (Limpus *et al.* 1979). Embryos attach to the egg approximately 12 hours after laying. Data gathered by Limpus *et al.* (1979) indicates that moving eggs immediately after completion of laying had a higher success rate than moving eggs more than 12 hours after laying, although embryos did survive when moved after 12 hours post-laying. Survival of embryos moved after attaching to the egg decreases with time as the embryo develops (Limpus *et al.* 1979). Desert tortoises have an incubation period of 90 to 120 days in the wild (Ernst *et al.* 1994). Without knowing the timeline of when disturbance associated with project will occur in tortoise habitat, we believe that moving eggs and risking greater loss of embryos will likely result in higher overall survival when compared to not relocating eggs from the site and having construction activities occur along the project corridor before they hatch.

Although sterile techniques will be used at all times, and all care will be taken to minimize the effects to eggs, it is possible that eggs will be damaged beyond viability in the relocation process. Given the overall low estimated densities in this ACEC (USFWS 1994), the locations of active burrows found, tortoise home range sizes, and the small estimated number of tortoises in the project area (one to eight), we do not anticipate that there are more than two nests associated with the project alignment, thus the number of eggs damaged should be minimal.

Indirect effects such as the impacts of construction projects to the soils and vegetation of desert ecosystems that support the desert tortoises are well documented and may affect tortoise populations and habitat quality over a long period of time, including loss of cover and forage. For this analysis, mechanical disturbance includes creation of access routes, clearing of ROWs, placement of pole structures, staging areas, substation construction, maintenance activities, and habitat reclamation activities. Mechanical disturbance of desert soils can cause: (1) changes in annual and perennial plant production and species composition; (2) soil loss due to increased rates of water and wind erosion; (3) reduced soil moisture; (4) reduced infiltration rates; (5) changes in soil thermal regime; and (6) compaction or an increase in surface strength (Adams *et al.* 1982; Burge 1983; Bury 1978; Bury and Luckenbach 1983 and 1986; Davidson and Fox 1974; Hinkley *et al.* 1983; Nakata 1983; Vollmer *et al.* 1976; Webb 1983; Wilshire 1977; Wilshire and Nakata 1976; Woodman 1983).

Desert soils are protected by fragile organic or inorganic crusts. The organic crust can be the result of various microflora (algae, lichen, and fungi that form cryptogams) or macroflora (remnants of fibrous root material from dead annual plants) (Went and Stark 1968). The

inorganic crust can be comprised of desert pavement, silt/clay, or chemicals. All of these crusts help prevent erosion and may increase infiltration and retard evaporation (Epstein *et al.* 1966). Modification of soils by surface-disturbing activities can result in a decrease in organic material and nutrient value (Webb *et al.* 1978). When the soil surface is exposed, the thermal insulation provided by the vegetative cover is decreased, which results in increased soil temperatures. Higher temperatures decrease the soil moisture, which causes soil temperature to increase further because less heat is required to vaporize the water present. Revegetation is inhibited as a result of these processes (Webb *et al.* 1978).

Movement and use of construction equipment can result in soil compaction. Disturbance in an area can be detrimental to the vegetation because the soil compaction can decrease the amount of water entering the soil and available to plants (Davidson and Fox 1974). Soil compaction, or increased soil strength, substantially increases run-off of rain by decreasing infiltration rates, resulting in increased potential for water erosion. Soil compaction inhibits seed germination and subsequent regeneration of plant cover (Wilshire and Nakata 1976). Even minimal vehicle use can significantly reduce the establishment and growth of desert annuals in succeeding years (Adams *et al.* 1982). Bury *et al.* (1977) rejected the notion that light use has little or no effect on the biota of desert lands, stating that even partial damage to plants may subject them to stress in dry years or droughts. Greater soil surface disturbance can be expected under vehicles moving at higher speeds (Webb 1983). Although routine maintenance is not anticipated to occur frequently on the new power line, some level of maintenance will likely be required. Maintenance activities anticipated to occur over the life of the power line include pole, conductor, insulator, and anchor support replacement. In order to minimize soil and vegetation disturbance, access for routine maintenance and unexpected service failures will be limited to the approved ROW, existing access routes, and disturbed areas. Pre-maintenance activity surveys for tortoises that may have established burrows will also help minimize the likelihood of harming a tortoise or its burrow.

As soon as the structures are in place, the lines will be installed by first running a sock line through a structure-mounted pulley along the alignment. The sock line will be pulled from structure to structure by hand (walking) or by using a helicopter, vehicle, or OHV along approved roads or cross-country within the proposed ROW. The conductor and fiber-optic line will then be attached to the sock line and pulled through the pulleys using reel trucks. Approximately 63 pull stations will be required for this project and will all be situated within the ROW or on private land. While helicopters and walking will be the least damaging to tortoise habitat, the vehicles and all-terrain vehicles (and associated pull stations), if necessary to pull the new line through, are not anticipated to create significant long-term effects, especially since these areas are included in habitat reclamation activities. The placement of this power line is not anticipated to increase the chances of raven predation on tortoises beyond what may be occurring with the existing power line.

As soon as the project enters Arizona, it begins to follow along Highway 91 south to Beaver Dam, Arizona. This area was previously disturbed during the placement of the Rio Virgin Fiber-Optic Line installation project (Utah FWS consultation number 6-UT-07-F-0010/2008-F-0050). No tortoises or burrows were observed along the ROW for this project. Because this area was previously disturbed and did not contain tortoises or sign, we are not anticipating adverse effects to tortoise habitat along this portion of the project.

Education programs incorporated as part of the conservation measures will also provide workers and supervisors with the information needed to reduce the effects of construction activities on tortoises. Well-defined work areas will reduce the total area of disturbance. Although revegetation can be inhibited by soil disturbing activities as previously described, rehabilitation and restoration of the sites, including re-contouring and seeding, should reduce residual impacts, especially with the monitoring program proposed and subsequent re-seeding efforts.

### **Critical Habitat**

As previously described, in the final rule designating desert tortoise critical habitat, the FWS determined that desert tortoise habitat consists of the following primary constituent elements: (1) sufficient space to support viable populations within each of the six RUs and provide for movement, dispersal, and gene flow; (2) sufficient quantity and quality of forage species and the proper soil conditions to provide for the growth of such species; (3) suitable substrates for burrowing, nesting, and over-wintering; (4) burrows, caliche caves, and other shelter sites; (5) sufficient vegetation for shelter from temperature extremes and predators; and (6) habitat protected from disturbance and human-caused mortality (USFWS 1994).

The effects to tortoise habitat described above are also direct and indirect effects to some of the primary constituent elements of desert tortoise critical habitat. The soil disturbing activities may lead to a decrease in the amount of sufficient quantity and quality of forage species as well as prohibit the growth of those species. Mechanical activities may also decrease the suitability of substrates for burrowing, nesting and over-wintering, and decrease the number of burrows, caliche caves, and shelter sites as these may need to be collapsed. Additionally, the mechanical activities will likely decrease the amount of vegetation available for sheltering. The proposed action will not likely significantly reduce the amount of space available to support viable populations, and is not likely to further reduce the amount of habitat protected from disturbance and human-caused mortality due to most of the area being previously disturbed by the existing power line and access roads associated with it.

Despite the reductions in primary constituent elements of critical habitat for the tortoise, the overall long-term reductions are expected to be minimal. Of the 27.36 total acres of temporary disturbance throughout the project corridor, 6.99 acres would occur in designated critical habitat for the desert tortoise. Of the 3.57 total acres of permanent disturbance, 2.04 acres would occur in designated critical habitat for the desert tortoise. Although critical habitat will be affected, the majority of impacts will be temporary and small in scale, and vegetation should be restored over time. The total permanent and temporary disturbance is less than one percent of the total available critical habitat within the Beaver Dam Slope ACEC. Critical habitat will be disturbed, regardless of whether or not direct impacts to animals occur; however, restoration will take place soon after construction under the guidance of a habitat reclamation plan.

Because the areas being reclaimed will have already been disturbed from the effects of the proposed action, we do not anticipate that activities associated with the reclamation plan will have any further effects to the primary constituent elements of tortoise critical habitat. Some soil compaction may occur as a result of an OHV pulling a chain or plow across the ground; however

this disturbance will involve very few passes by the OHV, and the chain will help break up that compaction. The long-term benefit of restoring the habitat should offset these short-term impacts resulting from the reclamation activities.

In addition to the above mentioned habitat reclamation plan, the project proponent has agreed to incorporate design features (conservation measures described above) to lessen environmental impacts associated with this project. Habitat restoration includes restoring habitat at ratios 5:1 for new disturbance in tortoise critical habitat, 3:1 where this project overlaps previously disturbed tortoise critical habitat, and 1:1 for all desert tortoise habitat that is not designated as critical habitat. This restoration will occur upon completion of the proposed project. Although successful restoration in desert habitats can be difficult to achieve, the restoration efforts should help to offset some of the impacts from temporary disturbances to desert tortoise habitat associated with this project.

### **Holmgren Milk-Vetch**

Although no new access roads will be created in Holmgren milk-vetch habitat, injury or death of individuals may result from overland travel by rubber-tired vehicles accessing the areas where power poles will be placed. Additionally, clearing of land in the areas for the placement of 36 poles (albeit less than one-quarter total acres) may also result in injury or death of individual plants found in or near these pole placement areas, especially since they have been documented within a few feet of some of these areas. The indirect effects to the Holmgren milk-vetch through soil disturbance and compaction are the same as those indirect effects previously described for desert tortoise habitat.

Biological monitors will be present to flag routes to help avoid plants during ingress and egress along the access routes. All topsoil cleared for pole placement will be salvaged and replaced as soon after pole placement as possible, typically within three days. Soil would never be stockpiled for more than 14 days. Replacing the topsoil quickly will allow milk-vetch seeds to remain in the seed bank and provide a better chance for germination. Work in milk-vetch habitat will also occur during June 1 through January 21, after the growing season, making it easier to identify plants and, thus, avoid them. Effects to the milk-vetch will be further minimized by using a seed mix consisting of native plants and shrubs typically found in milk-vetch habitat. A monitoring plan designed to measure the long-term success of re-seeding efforts will also be initiated by Dixie Escalante. If necessary, follow-up seeding, erosion control, and any other necessary corrective measures will be incorporated to ensure success of the habitat reclamation efforts.

To compensate for temporary, long-term, and permanent loss of habitat for the Holmgren milk-vetch (including critical habitat), Dixie Escalante will also construct and maintain three miles of range fence along the main road through milk-vetch critical habitat. This fence is intended to deter unauthorized off-road travel in the areas. In Utah, this fence will be constructed along the west side of the main access road for approximately 1.5 miles. In Arizona, the fence will be constructed along both sides of the same road for approximately 0.75 miles. The fence will be a standard four-strand barbed wire range fence and will be constructed by hand with any necessary equipment restricted to existing access areas. Dixie Escalante will be responsible for monthly

monitoring and maintenance of this fence for one year. After that, BLM will assume responsibility for monitoring and maintaining the fence. Additionally, a cattle guard will be installed near the Port of Entry in Utah to allow access to an existing road, but limit the movement of cattle, thus further minimizing the long-term effects of this project on Holmgren milk-vetch.

### **Critical Habitat**

Similar to the actions described for desert tortoise above that will cause indirect effects to habitat and direct effects to critical habitat, mechanical disturbance includes creation of access routes, clearing of ROWs, placement of pole structures, staging areas, substation construction, and habitat reclamation activities. The direct effects of these actions on desert soils in Holmgren milk-vetch habitat are similar to those described for the tortoise above. As described in the Status of the Species section, the following are the primary constituent elements for Holmgren milk-vetch:

- Appropriate geological layers or soils that support individual *Astragalus holmgreniorum* plants.
- Topographic features/relief and the drainage areas along formation edges with little to moderate slope (0 to 20 percent)
- The presence of insect visitors or pollinators

Because no new access roads will be created and only rubber-tired vehicles will be used to travel short distances across milk-vetch habitat, the appropriate geological layers, topographic relief and proper drainage will be maintained. Construction activities associated with this project are not anticipated to affect the presence of insect visitors or pollinators. Rubber-tired vehicles traveling across the same routes to access the pole placement sites will likely compact soils along these routes; however, overall compaction will be kept to a minimum by following the same routes. Clearing ground for the placement of each pole will remove soils, alter topographic features, as well as affect drainage, leading to increased erosion. Despite these disturbances, the footprint of soil removal for each of the 36 poles will result in only approximately one-quarter acre of total permanent disturbance. As previously described, all stockpiled topsoil at each pole site will be immediately replaced. This will allow the appropriate native soils and geological layers to be replaced, including the seed bank for other native plants, which will help stabilize those soils as the plants reestablish themselves. Replacing the topsoil and subsequent contouring associated with the habitat reclamation plan will also help reestablish the necessary topographic features and proper drainage of those soils.

Installation of the fence and cattle guard will help reduce the chances of cattle and OHVs accessing these areas and further compacting soils and altering the topographic features and drainage associated with milk-vetch critical habitat. Pre-construction surveys and flagging access routes to avoid milk-vetch and sensitive areas will also help reduce the effects of these activities. Carpooling to the construction site, using previously disturbed areas for pullout and staging areas, and stopping operations during wet weather to avoid large ruts in the ground will

further minimize the effects of soil compaction, native plant disturbance, and topography and drainage, all of which are habitat features considered necessary for the survival of the species (USFWS 2006).

Of the 3,836 acres of critical habitat within the State Line Subunit, only 4.58 acres (less than one percent) will be temporarily or permanently disturbed. The habitat reclamation activities previously described, including associated monitoring and re-establishment efforts, will help in the progression of the disturbed areas back towards their original condition. Although these soils and their associated vegetation can be very difficult to reestablish, continued monitoring and additional re-establishment efforts as necessary will help the process. In addition to using rubber-tired vehicles and replacing the topsoil to each pole placement site, the remaining conservation measures will ensure that the above primary constituent elements of Holmgren milk-vetch critical habitat are maintained.

### **CUMULATIVE EFFECTS**

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

#### **Desert Tortoise and Critical Habitat**

The primary cumulative effect in the project area is continued development in the Virgin River corridor. Communities in and around the tri-State region of Arizona-Nevada-Utah have experienced tremendous growth over the last decade. The Virgin River Communities Area Plan (Virgin River Communities Ad Hoc Plan Development Committee 1996) predicts a population of 25,000 to 100,000 by the year 2020. Loss of desert tortoises and alteration of habitat will continue to occur in developing areas. These areas are all outside of the DWMAs/ACECs and primarily in private or State ownership.

Common raven populations in the Mojave and Colorado deserts have undergone tremendous increases in recent years (over 1000 percent from 1968 to 1992, Boarman 1997). These increases are attributable to increased food and water from landfills, urban expansion, agriculture, and other human activities, as well as to additional nesting sites provided by high-tension electric line towers, telephone poles, bridges, other artificial structures, and cultivated trees. These effects are expected to continue in the future. Continued recreation, other legal and illegal activities (e.g. trash dumping, off-highway vehicle use, collection of tortoises), and elevated predation of tortoises by dogs and ravens are expected to continue on state and private lands. The exact locations and size of new developments or additions to existing developments cannot be stated with certainty, though the BLM anticipates considerable growth adjacent to existing communities.

Evidence from the Beaver Dam Slope suggests that significant desert tortoise mortality may be occurring as a result of recreation activities on private and state lands, including illegal shooting. The high percentage of tortoise carcasses showing evidence of being shot in the western Mojave

Desert (Berry 1986) is especially disturbing and indicates the potential magnitude of this problem. Because intrinsic population growth rates are very low, the stability of desert tortoise populations is highly dependent on low adult mortality. Natural adult mortality is approximately two percent per year (USFWS 1994). Adults are the most visible segment of the population and the most susceptible to death or injury by gunshot. This problem has the potential to become more serious as towns and human populations along the Virgin River continue to grow.

### **Holmgren Milk-Vetch and Critical Habitat**

The primary cumulative effect in the project area is continued development of communities within the action area. As a result, there is potential for increase in commercial development on the road south of the ACEC paralleling the power line through milk-vetch critical habitat, located off the Black Rock Interchange along Interstate 15. Such development could lead to direct degradation and loss of habitat for the species. In addition, increased development in the area may result in increased visitation by people walking and driving through the habitat, affecting the habitat and individuals. Illegal OHV use is likely to continue and increase, and dumping of trash may also affect habitat and individuals.

### **CONCLUSIONS**

The conclusions of this biological opinion are based on the project as described in the “Description of the Proposed Action” section of this document. Conservation measures incorporated into this project as implemented will further reduce project effects. After reviewing the current status of the desert tortoise and the Holmgren milk-vetch and the environmental baseline for the action area, the effects of the proposed actions, and the cumulative effects, it is our biological opinion that the Dixie Escalante Rural Electric Association SunRiver to Beaver Dam Transmission Line is not likely to jeopardize the continued existence of these species, and is not likely to destroy or adversely modify designated desert tortoise and Holmgren milk-vetch critical habitat.

We present these conclusions for the following reasons:

#### **Desert Tortoise and Critical Habitat**

- 1) Desert tortoise densities within the proposed project corridor are low, thus decreasing the likelihood of encountering a tortoise during construction activities.
- 2) Only 2.04 acres of critical habitat will be permanently disturbed. The remaining 6.99 acres of critical habitat will be temporarily disturbed; however this temporary loss of desert tortoise habitat affected during construction will be compensated as well as reclaimed. Dixie Escalante Rural Electric Association will offset these effects through either an acceptable land acquisition or an assessed financial contribution, based on the final construction footprint. The compensation ratio for permanent and temporary loss of undisturbed desert tortoise critical habitat is a 5:1 ratio, while disturbed critical habitat will be replaced/rehabilitated at a 3:1 ratio.

- 3) A habitat reclamation plan is in place to restore all desert tortoise habitat, including critical habitat, through re-seeding with native plants, re-contouring land, and incorporating erosion control measures.
- 4) The proposed conservation measures are sufficient to minimize the effects to Mojave desert tortoises and critical habitat within the proposed project corridor.
- 5) The acreage of critical habitat temporarily or permanently disturbed comprises less than one percent of the critical habitat unit, and the critical habitat unit will remain functional for the conservation of the species.

### **Holmgren Milk-vetch and Critical Habitat**

- 1) Pre-construction surveys will allow biological monitors to effectively flag access routes to avoid Holmgren milk-vetch.
- 2) The total permanent disturbance of Holmgren milk-vetch habitat is less than one-quarter acre and the temporary disturbance of milk-vetch habitat is only 4.38 acres. This amounts to less than one percent of the total acreage of critical habitat within critical habitat unit, which will remain functional for the conservation of the species.
- 3) Dixie-Escalante will offset these effects by placing a four-strand fence along the main access road through milk-vetch critical habitat in both Utah and Arizona. This fence will be maintained in perpetuity to reduce the effect of OHV traffic in the ACEC.
- 4) All permanent and temporary disturbance of habitat, including critical habitat, will be rehabilitated with a native seed mix according to the habitat reclamation plan.
- 5) The proposed conservation measures are sufficient to minimize the effects to Holmgren milk-vetch and critical habitat within the proposed project corridor.

### **INCIDENTAL TAKE STATEMENT**

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, without special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). "Harass" is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering (50 CFR 17.3). "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.



## **AMOUNT OR EXTENT OF TAKE ANTICIPATED**

### **Mojave Desert Tortoise**

We anticipate that the following incidental take of desert tortoises could occur as a result of the proposed action. Activities that may result in incidental take include the construction and placement of power poles, land clearing activities associated with the construction of the new power line, and the relocation of desert tortoises from off the construction site (handling, nest relocation, etc.). The incidental take is expected to be in the form of harm (injury or mortality related to relocation activities, habitat degradation or loss, loss of forage) and/or harassment (resulting from disturbance of individuals during the breeding season, or moving animals out of harm's way). A tortoise refers to one desert tortoise or one clutch of desert tortoise eggs.

Based on survey data provided by Dixie-Escalante's consultants, we anticipate that harm from the mortality of one tortoise and two nests may occur as a result of a tortoise being run over or crushed and nests being relocated. Additionally, we anticipate the harassment of up to eight tortoises may occur as a result of moving them out of harm's way. This estimate is based upon the eight active burrows, one mating ring, and one live adult tortoise being encountered during pre-project surveys; the need to move adult and juvenile tortoises, and relocate nests.

1. All desert tortoises found in harm's way may be captured and moved during project construction, reclamation, and maintenance activities. We estimate that no more than eight tortoises will be harassed by project activities.
2. We anticipate that one tortoise and/or two nests may be injured or killed during project construction activities.

We will consider incidental take to be exceeded if more than one tortoise and/or two nests are injured or killed during project activities.

### **Holmgren Milk-vetch**

Sections 7(b)(4) and 7 (o)(2) of the Act do not apply to the incidental take of listed plant species. However, protection of listed plants is provided to the extent that the Act requires a Federal permit for removal or reduction to possession of threatened or endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy endangered plants on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law. Neither incidental take authorization nor recovery permits are needed for implementation of the proposed action.

The Fish and Wildlife Service will not refer the incidental take of any migratory bird or bald eagle for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. §§ 668-668d), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

## **EFFECT OF THE TAKE**

In this biological opinion, we have determined that this level of anticipated take is not likely to result in jeopardy to this species.

## **REASONABLE AND PRUDENT MEASURES WITH TERMS AND CONDITIONS**

In order to be exempt from the prohibitions of section 9 of the Act, BLM must comply with the following terms and conditions (lettered and Roman numeral items), which implement the reasonable and prudent measures (numbered items) and outline reporting/monitoring requirements. The terms and conditions are non-discretionary.

The following reasonable and prudent measures are necessary and appropriate to minimize take of desert tortoise:

1. BLM shall implement programs and procedures to minimize injury or mortality of tortoises during project activities.
  - A. BLM will include the following stipulations in carrying out relocation activities.
    - i. All individuals handling tortoises must meet the FWS desert tortoise monitor or biologist qualifications requirements. The following individuals from JBR Environmental are permitted to handle tortoises as described in this BO: 1) Eric Holt; 2) Seth Topham; 3) Kamila Sharp; and, 4) Greg Sharp.
    - ii. Designate a field contact representative (FCR) who will have the authority to halt all project activity should any danger to a listed species arise. Work will only resume after hazards to the listed species are removed.
    - iii. Authorized biologists will act as biological monitors and be present during all relocation activities for the protection of desert tortoises and other listed species. These biological monitors will be responsible for determining compliance with measures as defined in the biological opinion or other agreements between the project proponent and agencies.
    - iv. Authorized activities will require monitoring of the desert tortoise population throughout the duration of the project. The appropriate level of monitoring will be developed in coordination with BLM and FWS. To ensure desired results are being achieved, minimization measures will be evaluated and, if necessary, section 7 consultation reinitiated.
    - v. Other than an emergency, all vehicle maintenance activities shall be conducted in maintenance facilities or outside of the project area. Vehicle maintenance shall not be conducted in areas of undisturbed habitat. Precautions shall be taken to ensure that contamination of maintenance sites by fuels, motor oils, grease, etc.

does not occur and such materials are contained and properly disposed of off-site. The applicant shall notify the Bureau's Arizona Strip Field Office's hazardous materials coordinator immediately upon spills of petroleum-based or other toxic materials. At the approval of the hazardous materials coordinator, the site shall be immediately cleaned up and the materials shall be disposed of as directed by BLM.

- vi. Impacts to vegetation will be minimized to the maximum extent possible.
  - vii. Workers traveling to and from the project will park in identified areas and minimize vehicles on the project site.
  - viii. Within DWMAs/ACECs during the tortoise active season (March 15-October 15), set a 20 mph speed limit on BLM roads while travelling to/from the project sites.
  - ix. In addition to the all project employee desert tortoise training and educational program, all project employees shall be informed of reporting requirements and specific detailed instructions on the proper techniques to capture and move tortoises that are in *imminent*<sup>1</sup> danger (ideally, without the tortoises voiding their bladders). Tortoises not in *imminent* danger shall only be moved by the qualified, on-site tortoise biologist. Project employees shall also be advised as to the definition of "take" under the Act and the potential penalties (up to \$25,000 in fines and six months in prison per violation) for taking a federally threatened species in a manner not authorized in this biological opinion. Finally, they shall be informed as to the terms and conditions included in this biological opinion.
2. Measures shall be taken to ensure the success of the restoration associated with the project.
- A. BLM will include the following stipulations in carrying out habitat reclamation activities.
    - i. Dixie Escalante Rural Electric Association will be responsible for all initial and additional monitoring activities to ensure successful restoration. Monitoring will be conducted as defined in the Reclamation and Monitoring Plan.
    - ii. Once restoration has begun, vehicular travel will be prohibited on areas where seed bed preparation and/or seeding have occurred.

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<sup>1</sup>Imminent= shall mean immediate and unavoidable. For example, if a tortoise may be killed or injured in the immediate future, and the cause of imminent death or injury cannot be stopped, the tortoise must be moved immediately by whoever is on-site. However, if a tortoise is found in the project path, and no immediate and/or unavoidable impacts are pending, project employees must alleviate the threat and await the qualified tortoise biologist so that he/she can move the animal prior to project continuation.

- iii. All seed will be certified free of noxious weeds, and seed mix rates shall be based on pure live seed. The seed source, mix, and rates will be submitted to the BLM and FWS for approval.

## CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. Since tortoises can lay eggs as early as May (Rostal *et al.* 1994), with constant monitoring of the project area, it would be possible to locate eggs and move them quickly. Moving them within 12 hours of laying would increase the hatching success rate. If possible, eggs should be allowed to hatch in their original nests along the project route and hatchlings moved to the relocation site as soon as possible. However, if this is not possible, to minimize handling and decrease the likelihood of eggs becoming non-viable, eggs should remain in their original nests and be relocated directly to new nest chambers rather than temporarily holding them along with tortoises.
2. We recommend that Dixie-Escalante pull the sock line from structure to structure by hand (walking) or helicopter when placing the sock line in Holmgren milk-vetch critical habitat to further minimize the effects to this species and its critical habitat resulting from soil disturbance activities.
3. We recommend that BLM coordinate with us to develop specific management actions within ACECs to further protect special status species.
4. We recommend that BLM fully implement the Desert Tortoise Recovery Plan and subsequent revisions of the plan.
5. We recommend that BLM continue to assist Lake Mead National Recreation Area; other BLM offices in Utah, Nevada, and California; and other land managers in the northeastern Mojave recovery unit in the development of regional planning efforts to implement the recovery plan, and in the integration of those plans with the Arizona Strip RMP.
6. We recommend that BLM manage activities so that they do not contribute to the proliferation of predators within desert tortoise habitat.
7. We recommend that all pole structures associated with this power line be equipped with anti-perching devices to discourage ravens and associated predation on tortoises.

8. We recommend that BLM construct new wildlife guzzlers in desert tortoise habitat only if they are designed so as to exclude desert tortoises, and if sufficient forage is available.
9. We recommend that the BLM coordinate and partner with other local, state, and Federal agencies as well as private groups to sponsor and/or assist with public education regarding desert tortoise conservation to enhance public support for conservation activities. Target groups for education and outreach may include OHV groups, hunting groups, Homeowner Associations, scout troops, public schools, libraries, and other audiences and venues associated with regional land use and/or educational programming.
10. We recommend working with Mohave County officials to establish a speed limit on county roads in desert tortoise habitat. Additionally, we recommend instituting a speed limit for users on BLM roads during the desert tortoise active season (March 15-October 15) in DWMA/ACECs.

In order for the FWS to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the FWS requests notification of the implementation of any conservation recommendations.

#### **DISPOSITION OF DEAD OR INJURED LISTED ANIMALS**

Upon locating a dead, injured, or sick listed species initial notification must be made to the FWS's Law Enforcement Office, 2450 West Broadway Road #113, Mesa, Arizona [telephone: (480) 967-7900] 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 animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible condition. If feasible, the remains of intact specimens of Mojave desert tortoise shall be submitted to the FWS Ecological Services Office in Flagstaff. Injured animals should be transported to a qualified veterinarian by a qualified biologist. Should any treated listed animal survive, the FWS should be contacted regarding the final disposition of the animal.

#### **REINITIATION NOTICE**

This concludes formal consultation on BLM's proposed Arvada Land Sale within the Arizona BLM Arizona Strip Field Office management area. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may 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 not considered in this 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 causing such take must cease pending reinitiation.

If conservation measures or other aspects of the proposed action are not implemented as anticipated herein, including schedules for implementation, reinitiation may be warranted pursuant to 50 CFR 402.16(b).

Thank you and your staff for helping us complete this formal consultation. Any questions or comments should be directed to Brian Wooldridge (928) 226-0614 (x105) or Brenda Smith (x101) of our Flagstaff suboffice.

/s/ Brenda Smith for

Steven L. Spangle

cc: Assistant Field Supervisor, Fish and Wildlife Service, Flagstaff, AZ  
State Director, Bureau of Land Management, Phoenix, AZ  
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ  
Regional Supervisor, Arizona Game and Fish Department, Flagstaff, AZ  
Field Supervisor, Fish and Wildlife Service, West Valley City, UT  
Assistant Field Supervisor, Fish and Wildlife Service, Las Vegas, NV  
Desert Tortoise Recovery Office, Fish and Wildlife Service, Reno, NV

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## Appendix A

### CONCURRENCES

This appendix contains our concurrences with your “may affect, not likely to adversely affect” determinations for the endangered California condor and endangered southwestern willow flycatcher and its critical habitat.

#### California condor

##### Conservation Measures

- Prior to the start of construction, Dixie Escalante would contact the Arizona FWS to determine the locations and status of condors in or near the project area.
- If condors occur within one mile of the project area, blasting would be postponed until the condors leave or are hazed by permitted personnel.
- If a condor occurs at the construction site, construction would cease until it leaves on its own or until techniques are employed by permitted personnel that results in the individual condor leaving the area.
- Construction workers and supervisors would be instructed to avoid interaction with condors and to immediately contact the appropriate personnel if and when condor(s) occur at a construction site.
- The construction site would be cleaned up at the end of each day that work is being conducted (e.g., trash removed, scrap materials picked up) to minimize the likelihood of condors visiting the site.
- To prevent water contamination and potential poisoning of condors, all vehicle fluid spills would be cleaned up immediately.

After reviewing the effects of the proposed action, we concur with your determination that the proposed action is not likely to adversely affect the endangered California condor. We base this concurrence on the following:

- No nesting or roosting habitat occurs along or near the proposed project route. Condors are unlikely to occur in the vicinity of the project.
- Conservation measures are sufficient to minimize attracting condors to the area, and to avoid adverse effects to any condors that may occur along the project route.

## Southwestern willow flycatcher and critical habitat

### Conservation Measures

- Activities occurring in designated critical habitat will occur outside the breeding and nesting season (May- August).
- Activities occurring in suitable habitat along Beaver Dam Wash will occur outside the breeding and nesting season (May- August).
- Riparian habitat will not be removed along the Virgin River.
- Riparian habitat will not be removed along Beaver Dam Wash.

After reviewing the effects of the proposed action, we concur with your determination that the proposed action may affect, but is not likely to adversely affect the endangered southwestern willow flycatcher or adversely modify its critical habitat . We base this concurrence on the following:

- All activities will occur outside of the breeding season for the flycatcher, thus avoiding direct effects to flycatchers.
- Because no riparian habitat will be removed along the Virgin River or Beaver Dam Wash as a result of the proposed action, there will be no indirect effects to flycatchers through habitat modification.
- Because no riparian habitat will be removed in critical habitat, effects to flycatcher critical habitat will be avoided.