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DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ARIZONA ECOLOGICAL SERVICES STATE OFFICE
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July 20, 1995

In Reply Refer To:
AESO/SE
2-21-92-F-594

Mr. Robert Hollis
Federal Highway Administration
U.S. Department of Transportation
234 N. Central Avenue, Suite 330
Phoenix, Arizona 85004

Dear Mr. Hollis:

This is in response to your letter of January 13, 1995, requesting formal consultation with the Fish and Wildlife Service (Service) under section 7 of the Endangered Species Act (Act) for the proposed project on State Route 90 from Interstate 10 to Huachuca City in Arizona. The formal consultation period began on January 17, 1995, the day we received your request. The species of concern for this consultation is the lesser long-nosed bat (Leptonycteris curasoae yerbabuena) which is listed as endangered under the Act. The best scientific information available, including data in our files, consultation with experts, site visit results, and the scientific literature were used in this biological opinion.

DESCRIPTION OF THE PROPOSED ACTION

The proposed project is located on and along State Route 90 beginning at milepost 289.6 at Interstate 10 and ending at milepost 313.2 in Huachuca City (Arizona Department of Transportation, 1994). The proposed project design is a four-lane divided highway with a 26-meter median between milepost 290.7 and milepost 306.5, a 9-meter median between milepost 306.5 and milepost 309.1, and a 14-meter median between milepost 309.1 and milepost 311.7. Five-lane sections are proposed at the north end (to align with the Interstate 10 interchange) and at the south end in Huachuca City. The horizontal alignment will coincide with the centerline of the existing roadway at the northern and southern ends of the project where the five-lane sections are proposed. Between milepost 290.7 and milepost 306.5, the existing roadway will be modified to carry only southbound traffic and a new northbound roadway will be constructed 33 meters to the east. The median will transition down to 14 meters between mileposts 306.5 and 309.1, and the proposed roadway

will be centered within the existing 61 meter right-of-way. Between mileposts 309.1 and 311.7, the existing roadway will again be used for the southbound lanes and a new northbound roadway will be constructed 14 meters to the east. At the Babocomari River, the alignment of the roadways merges to form a five-lane section in Huachuca City.

There are currently 54 private driveway entrances with direct access to State Route 90 within the project limits. The number of driveways will be reduced to 47 with frontage roads constructed to provide access for the remaining driveway entrances. New right-of-way will be required on the east side of the highway. Between milepost 290.7 and milepost 306.3, a 31-meter strip containing 75 hectares will need acquisition. Between milepost 307.5 and milepost 307.6, approximately one hectare will be needed to improve drainage conditions and to reconfigure the frontage road. Four hectares will be required on the east side between Whetstone and Huachuca City. Drainage easements totaling approximately 7 hectares will be required, primarily on the east side. Temporary construction easements are also anticipated during construction.

Discharge erosion control measures will need to be installed at several of the 56 existing box culverts. New roadway widening through the Whetstone area will require drainage improvements to prevent increasing the current flooding problems. The new roadway widening will also include the design of a ditch collection system and culvert entrances to minimize flooding during nuisance flow events. The box culvert at Camino De Manana will be designed to prevent increased flooding during low flow events.

The main utility disturbance in the Whetstone vicinity will be relocation of a buried telephone line, approximately between milepost 306.5 and milepost 309.1. South of Whetstone, through the San Ignacio del Babocomari land grant, the buried telephone lines on the east side will need to be relocated between milepost 309.1 and milepost 312.1. The overhead powerline just outside the west right-of-way line will be unaffected except where it crosses to the east side at milepost 311.4 and will need relocation to milepost 311.7.

The existing bridges over French Joe Canyon Wash (milepost 299.9) and Rain Valley Wash (milepost 309.4) will not be affected by the new roadway. A new bridge will need to be constructed over these washes for the new offset roadway. The existing bridge over the Babocomari River (milepost 311.9) will be replaced by a new five-lane bridge.

BACKGROUND - LESSER LONG-NOSED BAT

The lesser long-nosed bat was listed (originally, as Sanborn's long-nosed bat) as endangered on September 30, 1988 (53 FR 38456). No critical habitat has been designated for this species. The lesser long-nosed bat is a small leaf-nosed bat. It has a long muzzle and a long tongue. These features are adaptations to collect nectar from the flowers of columnar cacti, such as the saguaro and organ pipe, and from paniculate agaves (Hoffmeister, 1986). This migratory species is still found throughout its historic range from southern Arizona, through western Mexico, and south to El Salvador. It occurs in southern Arizona from the

Picacho Mountains southwest to the Agua Dulce Mountains and southeast to the Chiricahua Mountains and south to Mexico. Arizona roosts are occupied from late April to September (Cockrum, 1991). Adult females, most of which are pregnant, and their recent young are the first to arrive, and they form maternity colonies at lower elevations near concentrations of flowering columnar cacti. After the young are weaned, these colonies disband in July and August; some females and young move to higher elevations, primarily in the southeastern parts of Arizona near concentrations of blooming paniculate agaves. Adult males are known mostly from the Chiricahua Mountains but also occur with adult females and young of the year at maternity sites (Fleming, 1994). Based on limited studies, these bats have been known to forage a distance of 40 kilometers (25 miles) from their roost site.

STATUS AND ENVIRONMENTAL BASELINE - LESSER LONG-NOSED BAT

Loss of roost and foraging habitat, as well as direct taking of individual bats during animal control programs, particularly in Mexico, have contributed to the current status of the species. Suitable day roosts and suitable concentrations of food plants, are the two resources that are critical for the lesser long-nosed bat (Fleming, 1994). As indicated above, the lesser long-nosed bat consumes nectar and pollen of paniculate Agave flowers and the nectar, pollen, and fruit produced by a variety of columnar cacti. Caves and mines are used as day roosts. The factors that make roost sites usable have not yet been identified; narrow or specialized requirements may be necessary for day roosts. Whatever the factors are that determine selection of roost locations, the species appears to be sensitive to human disturbance. Instances are known where a single brief visit is sufficient to cause a high proportion of lesser long-nosed bats to temporarily abandon their day roost and move to another. Perhaps most disturbed bats return to their preferred roost in a few days. However, the sensitivity suggests that the presence of alternate roost sites may be critical when human disturbance occurs. Interspecific interactions with other bat species may also influence lesser long-nosed bat roost requirements.

Known major roost sites include 16 maternity roosts in Arizona and Mexico. According to surveys conducted in 1992 and 1993, the number of bats estimated to occupy these sites was greater than 200,000. The numbers above indicate that although there may be relatively large numbers of these bats known to exist, the relative number of known large roosts is small. Disturbance of these roosts and the food plants associated with them could lead to the loss of the roosts. The limited numbers of maternity roosts may be the critical factor in the survival of this species.

EFFECTS OF THE PROPOSED ACTION ON LISTED SPECIES

According to Wueste (in litt.), the closest identified lesser long-nosed bat roost site is located in the Huachuca Mountains, approximately 19 kilometers (11.8 miles) from the south limit of the project corridor. He stated that approximately 1,400 bats were found in the roost site during a survey conducted by the Arizona Game and Fish Department. The Service is aware that 1,439 lesser long-nosed bats were observed in an exit count of the roost

referred to above in 1993. According to our measurements, this roost site is approximately 14 kilometers (9 miles) from the southern end and approximately 46 kilometers (29 miles) from the northern end of the proposed project. The project area is within the known foraging distance of the lesser long-nosed bat.

The lesser long-nosed bat forages on the nectar and pollen of the Palmer agave (Agave palmeri) that occurs in large numbers in the project area. A survey was conducted in February 1994 between milepost 308.2 and milepost 289.6 within the proposed right-of-way area along the east side of the existing roadway to obtain a total count of agaves in the area. Only the east side of the existing roadway was surveyed. Approximately 2,500 agaves, of all size classes, were counted (Wueste, in litt.). The densest areas of plants were found between milepost 297.0 and milepost 298.3. A second relatively large group of plants was found between milepost 294.3 and milepost 294.5. Greater concentrations of agave plants were noted along the west side of the corridor, increasing substantially to the base of the Whetstone Mountains. The Service is also aware that lesser long-nosed bats have been found roosting in bridges in the vicinity of the Huachuca Mountains. At least one existing bridge will be affected by the proposed project. The Service does not know if the bridge has been used by lesser long-nosed bats. The effects of the action on the bat is the expected loss of some portion of food plants and possible temporary roost impacts due to the construction of the proposed project.

CUMULATIVE EFFECTS

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

Kartchner Caverns State Park is currently under development (Arizona Department of Transportation, 1994). According to Arizona State Parks Department, preliminary projections of anticipated visitors are estimated to be 150,000 people per year. The 223-hectare park is located adjacent to State Route 90 between milepost 297.6 and milepost 298.6. State Route 90 forms the park's eastern boundary. The park will eventually provide the public with a visitor center, campground, and parking, in addition to access to the underground caverns. Substantial economic growth opportunities are foreseen for the entire area to provide support services such as restaurants and hotels for the park visitor.

In December 1993, the City of Benson annexed 63 square kilometers along State Route 90 between Interstate 10 and Kartchner Caverns State Park, which extended the city's jurisdiction to approximately milepost 297.5. The annexed land has been master-planned and is referred to as Whetstone Ranch. The plan includes commercial, residential, and recreational land uses. Approximately 728 hectares of the proposed development borders the roadway. State Route 90 corridor, particularly from Interstate 10 to Kartchner Caverns

State Park, has recently been incorporated into the city of Benson. The agaves on these private lands will be disturbed. The area of the densest agaves in proximity to the corridor occurs on Forest Service and Arizona State Park lands (Wueste, in litt.).

BIOLOGICAL OPINION

Based on the best scientific and commercial data available, it is the biological opinion of the Service that the proposed highway development project on State Route 90 between Interstate 10 and Huachuca City is not likely to jeopardize the continued existence of the lesser long-nosed bat.

INCIDENTAL TAKE

Sections 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempting to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as 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, and sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. 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 a prohibited taking provided that such taking is in compliance with the incidental take statement.

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Federal Highway Administration has a continuing duty to regulate the activity covered by this incidental take statement. If the Federal Highway Administration (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

The Service anticipates incidental take of lesser long-nosed bats will be difficult to detect for the following reasons. Take is expected to occur due to loss of up to 2,500 agaves in 384 acres of foraging habitat of the bat. Impacts to the species as a result of such loss would be difficult to detect and measure. However, the following level of take of this species can be anticipated by loss of agaves associated with the project because the agaves can serve as a surrogate of expected take of the bat. If the loss of agaves does not exceed 2,500 and if the project is not altered from its current description, then the allowed incidental take will not be exceeded.

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of lesser long-nosed bats. Implementation of these measures shall be conducted in accordance with the terms and conditions in the following section.

1. Minimize loss of foraging habitat and disturbance of behavior and roosts of the bat as much as possible.
2. Transplant agaves from the densest sites that will be affected by the project to adjacent lands if landowner cooperation can be achieved.

Terms and Conditions for Implementation

In order to be exempt from prohibitions of section 9 of the Act, the Federal Highway Administration must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

- 1.1 All clearing of land within the project area will be minimized to the greatest extent possible. No staging areas will be allowed between mileposts 291.7 and 294.5, and mileposts 297.1 and 301.2. Other staging areas will be limited and identified to prevent loss of agaves or potential agave habitat. Operation of vehicles and other activities will be conducted in a manner to minimize disturbance of agaves and soils.
- 1.2 All work on existing bridges that will be affected by the construction of the highway will be done between September and April. The bridge(s) will also be examined to ensure no lesser long-nosed bats are present before the work begins.
- 1.3 All work on this project that will be done at night can only be conducted when lesser long-nosed bats are expected to be absent from Arizona. That period of absence is September through April.
- 2.1 There may be appropriate locations, adjacent to the project area, that are suitable for the transplantation of agaves of size classes and in densities that could function as forage for lesser long-nosed bats. The action agency will seek permission from those landowners that have suitable locations to transplant some of the agaves that will be affected by the project. If the landowners agree, a portion of the agaves from the locations within the eastern alignment between mileposts 294.2 and 294.5 and mileposts 297.1 and 298.3 will be transplanted. Transplantation will be performed according to techniques currently recognized as successful. The transplantation effort will be monitored and results will be reported to the Service.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. With implementation of these measures the Service believes that no more than 2,500 agaves may be lost, and that less than that number should actually be lost due to the project. If the project is not modified and/or the loss of agaves due to the project does not exceed 2,500, then the incidental take allowed by this incidental take statement will not be considered to be exceeded. If, during the course of the action, this minimized level of incidental take is exceeded, such incidental take represents new information requiring review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Reporting Requirements

If, during the course of the action, incidental take occurs beyond that addressed above, such incidental take would represent new information requiring review of the project. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for review of the project.

Upon locating a dead, injured, or sick individual of an endangered or threatened species, initial notification must be made to the nearest Fish and Wildlife Service Law Enforcement Office. Care should be taken in handling sick or injured individuals and in the preservation of specimens in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence associated with the specimen is not unnecessarily disturbed. In Arizona, contact (602/379-6443) or the Arizona State Office (602/640-2720).

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. The term "conservation recommendations" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for these species.

A. The action agency should undertake a literature review and appropriate research to determine the success of agave transplantation under various ecological conditions. This conservation recommendation could be performed in conjunction with Reasonable and Prudent Measure 2. Please provide the Service with a copy of the results of the review.

B. The action agency should cooperatively work with landowners adjacent to the project area to improve and ensure conservation of agaves and agave habitat in the immediate area.

C. The action agency will provide a copy of the contract mitigation plan that specifically implements the terms and conditions of the incidental take statement to the Service for review.

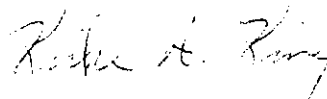
In order for the Service to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

CONCLUSION

This concludes formal consultation on the project submitted to the Service by the Federal Highway Administration on January 13, 1995. As required by 50 CFR 402.16, reinitiation of formal consultation is required if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

Thank you for your continuing efforts to conserve and recover threatened and endangered species. If we can be of further assistance, please contact Bill Austin or Bruce Palmer.

Sincerely,



for Sam F. Spiller
State Supervisor

cc: Director, Fish and Wildlife Service, Washington, D.C.
Regional Director, Fish and Wildlife Service, Albuquerque, NM (AES)
(Director, Arizona Department of Transportation, Phoenix, AZ)
(Director, Arizona Game and Fish Department, Phoenix, AZ)

Literature Cited

Arizona Department of Transportation. 1994. Draft environmental assessment for State Route 90 - Interstate 10 to Huachuca City, Cochise County, Arizona. Phoenix. 89 pp.

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