

**United States Department of the Interior
U.S. Fish and Wildlife Service
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021
Telephone: (602) 242-0210 FAX: (602) 242-2513**

AESO/SE
02-21-97-F-0229

April 27, 2004

Mr. Tom Puto, Project Manager
Federal Highway Administration
555 Zang Street, Room 259
Lakewood, Colorado 80228

Re: Sunrise Park-Big Lake Road - Forest Highway 43

Dear Mr. Puto:

Thank you for your request for formal consultation pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request for formal consultation was dated July 23, 2003, and received by us on July 28, 2003. This biological opinion analyzes the effects of the proposed reconstruction of 11.3 miles in Section 2 of the Sunrise Park-Big Lake Road, also known as Forest Highway 43 (FH 43), on the threatened bald eagle (*Haliaeetus leucocephalus*) and Apache trout (*Oncorhynchus apache*). The project is located within the Apache-Sitgreaves National Forests in Apache County, Arizona. There is no critical habitat in the action area.

The Federal Highway Administration (FHWA) also requested our concurrence that the proposed project may affect, but is not likely to adversely affect, the endangered jaguar (*Panthera onca*) and southwestern willow flycatcher (*Empidonax traillii extimus*), the threatened Mexican spotted owl (*Strix occidentalis lucida*) and loach minnow (*Tiaroga cobitis*), and that it is not likely to jeopardize the Mexican gray wolf (*Canis lupus baileyi*). Concurrences for the jaguar, southwestern willow flycatcher, loach minnow, and Mexican gray wolf were included in a letter to the FHWA on September 26, 2003. At that time we did not provide a concurrence for the Mexican spotted owl. Since that time we have received additional information concerning vehicular use and recreation in the area. We concur with your determination that the proposed project may affect, but is not likely to adversely affect the Mexican spotted owl. The basis for our concurrence is found in Appendix A. Additionally, on November 18, 2003, critical habitat for the Mexican spotted owl was proposed (U.S. Fish and Wildlife Service 2002). An email transmission from the Forest Service indicates that the project is not within proposed critical habitat.

This biological opinion is based on information provided in the June 19, 2003, biological assessment, a site visit on October 8, 2003, and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, road construction and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

Consultation History

- April 29, 1997: Request for an inventory of threatened or endangered species which may potentially occur in the project area by the FHWA.
- November 19, 1998: Meeting and site visit concerning FH 43. Meeting attended by U.S. Fish and Wildlife Service, FHWA, and Apache-Sitgreaves National Forests.
- August 1, 2000: Site visit attended by U.S. Fish and Wildlife Service, the Arizona Game and Fish Department, the Apache-Sitgreaves National Forests, and the FHWA.
- August 15, 2000: Letter from the U.S. Fish and Wildlife Service to the FHWA providing input during the planning stages of FH 43.
- June 20, 2002: Meeting regarding FH 43.
- July 23, 2003: FHWA requested formal consultation for the proposed reconstruction of the Sunrise Park-Big Lake Road.
- September 26, 2003: We sent a 30-day letter initiating consultation. Included in the letter were concurrences for the jaguar, southwestern willow flycatcher, loach minnow, and Mexican gray wolf.
- October 8, 2003: Site visit to FH 43. Attended by representatives from FHWA, Apache-Sitgreaves National Forests, and U.S. Fish and Wildlife Service.
- December 15, 2003: A draft biological opinion was sent to the FHWA.
- April 02, 2004: We received electronic comments on the draft biological opinion from FHWA.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed action consists of reconstructing the existing unpaved road (FH 43) to provide a consistent alignment with adequate sight distance and width for anticipated future traffic volume. Figures 1 and 2 in Appendix B map the existing and new highway alignments. The proposed action incorporates a design speed of 43 mph except at Sheep's Crossing. The crossing at the West Fork of the Little Colorado River (WFLCR) (Sheep's Crossing) will be designed with a 37 mph curve to minimize riparian and other environmental impacts.

The action area for this project is 11.3 miles of FH 43. FH 43 will be a two-lane asphalt road with two 12-foot travel lanes and two 3-foot shoulders. The action area includes all staging/borrow pits and right of way access. The action area also includes the East and West Fork Little Colorado River drainages and a small portion of the Black River drainage. Additionally, the action area traverses the Big Lake Recreational Area and Lee Valley Recreational Area which are destination sites of FH 43. Figures 1, 2, and 3 in Appendix B map the project components.

The proposed action will use the existing road alignment except at realignment sections: Sheep Crossing, Voigt Ranch, Burro Creek, and Crescent Lake. It will maintain a curvilinear alignment to fit with the terrain. Steep grades and sharp curves will be modified to improve sight distances. The improvement will include new drainage structures and safety features, such as shoulders and guardrail, where appropriate. Ditches will be established or reshaped, as necessary, to improve drainage.

The four realignment sections are described as follows:

Sheep Crossing

The first realignment section occurs where Arizona FH 43 crosses the West Fork of the Little Colorado River at Sheep Crossing. A 167-foot bridge is proposed to span the WFLCR and replace the existing structure. To correct the existing sharp curve and poor sight distance, the new bridge will be constructed about 850 feet downstream of the existing bridge location. This location allows a larger curve, which would be more similar to the remainder of the route and provide safer sight distance. The road will be moved farther away from the Mount Baldy Wilderness area, expanding the buffer zone between the highway and the wilderness. Proposed design speed for the curve is 37 mph. This realignment will result in 0.3 mile of new disturbance.

Access to existing parking (approximately 15 spaces) along the river at Sheep Crossing will be eliminated. Access to a portion of the existing roadway will be maintained and a designated drop-off area, including up to two Americans Disabilities Act (ADA)-accessible parking spaces, will be constructed. This area will function as an "over-look" and allow vehicles to drop-off visitors that may want to access the river, and then park at the Mount Baldy Wilderness Trailhead on the ridge top. An ADA-accessible trail will also be constructed to connect the drop-off area to the existing Sheep Crossing Bridge. Less than 0.5 mile of graveled hiking trail

will also be constructed from the Sheep Crossing trailhead down to the proposed trail. At the existing bridge crossing, ADA-accessible fishing access will be provided with the designated use appropriately signed. As funding becomes available, approximately 4-6 rock and log in-stream structures will be placed in the vicinity of the bridge to hold transplanted fish. However, these additional items are not part of this proposed action and may require additional section 7 consultation.

An ADA-accessible hardened area (measuring 10'x30') will be constructed along the western bank of the WFLCR immediately downstream from the existing bridge. This hardened area will be connected to the existing bridge by a hardened trail less than 100 feet (ft) in length. This design will provide a unique recreational opportunity for individuals requiring ADA access, while providing other visitors with an opportunity to continue using the area since they will no longer be able to park adjacent to the WFLCR.

Voigt Ranch

The second realignment section is located near the Voigt Ranch. The new roadway alignment will replace two substandard curves that cause poor sight distance. The realignment will shift the road east of the existing roadway at the first curve and then slightly west of the existing roadway at the second curve. This realignment will straighten the overall roadway alignment, allowing adequate sight distance while avoiding any impacts to the historic Voigt Ranch area. This realignment will result in 0.3 mile of new disturbance.

Burro Creek

The third realignment section will be at Burro Creek. The existing roadway closely parallels the headwaters of Burro Creek. The new alignment will extend northeast of the existing roadway along the ridge top and will continue for approximately 2.4 miles. This will relocate the highway away from the creek by as much as 1,170 feet.

Crescent Lake

The fourth proposed realignment section would relocate the road approximately 36 feet downstream of the existing dam at Crescent Lake. This realignment would include a bridge downstream of the dam. The new alignment would provide more separation between the highway and pedestrian activity along the lake.

The work will be completed over a two- or three-year period commencing in 2005. Construction activities will generally occur between May and October in the years of project implementation. Mild winters may allow for longer working timeframes. Portions of the route will be closed to through traffic during construction. Future and ongoing maintenance activities are not being analyzed in this biological opinion.

The proposed action will require the use of heavy equipment. The types of heavy equipment used may include any or all of the following: bulldozers, track hoes (backhoes with bulldozer type tracks), a boom or derrick (for lifting bridge into place), sheep's foot rollers, graders, paving machines, scrapers, and various types of trucks (water, gravel, asphalt). FHWA personnel will be onsite to oversee all construction activity with frequent coordination with the Apache-Sitgreaves National Forests.

Portions of FH 43 currently not fenced will be fenced with a four-strand (top and bottom smooth and two middle wires barbed) wire fence. The fence will be constructed to facilitate big game movement, but prevent livestock from entering the roadway.

Noise-reduction equipment (mufflers) will be required on heavy vehicles and equipment. Hours of construction operations will generally be limited to Monday through Friday, ½ hour after sunrise to ½ before sunset and, if necessary, Saturdays, from 8 a.m. to 6 p.m.

The life of the project is 20 years. The design life is 20 years after the completion of the construction. During that time only minor maintenance work performed by ADOT (patching, ditch maintenance) is anticipated. After 20 years it is possible that more substantial road work like a complete resurfacing might be required to extend the "design life" but, given the very low 20-year projection in future traffic, FHWA does not anticipate road widening being required. Due to the uncertainty concerning maintenance work performed by ADOT, those ongoing actions will not be addressed in this consultation. Future section 7 consultation may be necessary to address ongoing maintenance of FH 43.

Conservation Measures

As part of the project FHWA has proposed the following conservation measures to reduce the short- and long-term impacts of the proposed action. These actions are considered integral to the proposed action.

Railroad grade removal and Stream Restoration

The proposed new bridge over the WFLCR will directly impact approximately 0.59 acre of riparian habitat due to the placement of roadway embankment, bridge abutments, and piers. The total footprint of the improvement is approximately 0.88 acre. This includes the permanent riparian impact of 0.59 acre, and the temporary construction impact to erect the bridge.

To offset these impacts, FHWA proposes to remove the railroad embankment that crosses the WFLCR, approximately 2,300 feet upstream of the new bridge. The railroad embankment occupies approximately 0.35 acre of the WFLCR floodplain. The railroad embankment is approximately 20 ft high and 90 ft wide at its base. It extends across the stream and floodplain. It crosses the WFLCR using two 60-inch culverts that regularly clog with debris which results in a damming effect on the river. The culverts have also resulted in constricted flows, channelization of the river below the culverts and, in doing so, have altered the natural hydrological function of the river.

Removal of the railroad embankment will consist of the following actions: access to the north end of the embankment will be established from the exiting road which will require the reopening of approximately .2 mile of abandoned road. This re-opened road will be converted to a multi-use trail at completion to replace the existing multi-use trail that crosses the railroad embankment. The south end can be accessed by an existing road. Heavy equipment, such as loaders, bulldozers, and dump trucks, will be used to remove the embankment. Soil removed will be used for fill at other locations of the FH 43 reconstruction. The slopes will be re-contoured to the natural slope and the area will be reseeded with native seed and replanted with native willows.

As a result of a higher stream bed on the upstream side of the culvert in relation to the downstream side, in-stream weir-type structures will be installed in place of the embankment to prevent scour and reduce sedimentation movement down stream. It may be necessary to divert the WFLCR during the construction phase. Silt fences and other erosion control devices will be installed and maintained during the removal of the embankment/culverts.

Refer to the Conceptual Stream Restoration Plan prepared by Ecosystem Management for complete details of the area and project design (Ecosystem Management 2002).

East Fork Little Colorado River Willow Restoration

The existing East Fork Little Colorado River (EFLCR) road crossing will require widening to comply with expected increased traffic, hydraulic, and safety concerns. This will result in the loss of some riparian and willow habitat adjacent to the new bridge. In order to mitigate this loss and promote willow habitat, an elk exclusion fence would be installed from the Phelps Cabin Research Natural Area (RNA) southwest (upstream) of the existing roadway to a point approximately 500 feet northeast (downstream) of the existing roadway. The fence would have a total length of approximately 3,000 ft and would eliminate herbivory from ungulates, which are believed to be the primary cause for willow decline at this location. The elk exclusion fence would consist of two cells 246 to 328 feet wide separated by the proposed roadway. The total area to be fenced is approximately 33 acres (13.5 hectares).

Relocation of Road in Burro Creek Headwaters

The existing dirt roadway closely parallels the headwaters of Burro Creek resulting in increased sedimentation discharge into Burro Creek. The new alignment will extend northeast of the existing roadway along the ridge top and will continue for approximately 2.4 miles. This will relocate the highway away from the creek by 1,170 feet.

Relocation of East Baldy Trailhead

A new parking-lot/trailhead will be constructed adjacent to FH 43. The 0.3 mile long road and existing parking area will be obliterated and rehabilitated. A connector trail will be constructed in the tree line from the new parking-lot/trailhead to the trail. Impacts to riparian habitat along the EFLCR are expected to decrease as a result of this relocated parking-lot/trailhead.

Status of the Species (range wide and/or recovery unit)Bald Eagle

The bald eagle south of the 40th parallel was listed as endangered under the Endangered Species Preservation Act of 1966 on March 11, 1967 (U.S. Fish and Wildlife Service 1967), and was reclassified to threatened status on July 12, 1995 (U.S. Fish and Wildlife Service 1995). No critical habitat has been designated for this species. The bald eagle was proposed for delisting on July 6, 1999 (U.S. Fish and Wildlife Service 1999). The bald eagle is a large bird of prey that historically ranged and nested throughout North America except extreme northern Alaska and Canada, and central and southern Mexico.

The bald eagle occurs in association with aquatic ecosystems, frequenting estuaries, lakes, reservoirs, major rivers systems, and some seacoast habitats. Generally, suitable habitat for bald eagles includes those areas which provide an adequate food base of fish, waterfowl, and/or carrion, with large trees for perches and nest sites. In winter, bald eagles often congregate at specific wintering sites that are generally close to open water and offer good perch trees and night roosts (U.S. Fish and Wildlife Service 1995).

There were an estimated one-quarter to one-half million bald eagles on the North American continent when Europeans first arrived. Initial eagle population declines probably began in the late 1800s, and coincided with declines in the number of waterfowl, shorebirds, and other prey species. Direct killing of bald eagles was also prevalent. Additionally, there was a loss of nesting habitat. These factors reduced bald eagle numbers until the 1940s when protection for the bald eagle was provided through the Bald Eagle Protection Act (16 U.S.C. 668). This legislation accomplished significant protection and slowed the decline in bald eagle populations by prohibiting numerous activities adversely affecting bald eagles and increasing public awareness of bald eagles. The widespread use of dichloro-diphenyl-trichloroethane (DDT) and other organochlorine compounds in the 1940s for mosquito control and as a general insecticide caused additional declines in bald eagle populations. DDT accumulated in individual birds following ingestion of contaminated food. DDT breaks down into dichlorophenyl-dichloroethylene (DDE) and accumulates in the fatty tissues of adult females, leading to impaired calcium release necessary for egg shell formation. Thinner egg shells led to reproductive failure, which is considered a primary cause of declines in the bald eagle population. DDT was banned in the United States in 1972 (U.S. Fish and Wildlife Service 1995).

Since listing, bald eagles have increased in number and expanded in range due to the banning of DDT and other persistent organochlorine compounds, habitat protection, and additional recovery efforts. We estimated that the breeding population exceeded 5,748 occupied breeding areas in 1998 (U.S. Fish and Wildlife Service 1999).

Although not considered a separate subspecies, bald eagles in the southwestern United States have been considered as a distinct population for the purposes of consultation and recovery efforts under the Endangered Species Act. A recovery plan was developed in 1982 for bald eagles in the Southwest recovery region. New information has indicated that the bald eagles in Arizona and the Southwest recovery region are not a distinct, reproductively isolated population

as was previously believed. However, the Arizona Game and Fish Department (1999) concluded that “evidence from the banding and identification of breeding adults defends the theory that Arizona’s breeding population is not supported or maintained by immigration from other states or regions”. A demographic analysis based upon banding of Arizona eagles projects future declines in the Arizona bald eagle population ranging from 3.6 to 5.5 percent annually (Allison *et al.* 2003).

Bald eagle breeding areas in Arizona are predominantly located in the upper and lower Sonoran life zones. The Luna Lake Breeding Area, and recently discovered Crescent Lake Breeding Area, are two of the few territories in Arizona found in coniferous forests, as opposed to the majority which occur in Sonoran vegetation communities. All breeding areas in Arizona are located in close proximity to a variety of aquatic habitats including reservoirs, regulated river systems, and free-flowing rivers and creeks. The alteration of natural river systems has had both beneficial and detrimental affects to the bald eagle. While large portions of riparian forests were inundated or otherwise destroyed following construction of dams and other water developments, the reservoirs created by these structures enhance habitat for the waterfowl and fish species (often nonnative species) on which bald eagles prey.

In addition to breeding bald eagles, Arizona provides habitat for wintering bald eagles, which migrate through the state between October and April each year. In 1997, the standardized statewide Arizona winter count totaled 343 bald eagles, including 193 adults, 134 subadults, and 16 of unknown age; in 1998, 183 adults, 103 subadults, and 4 of unknown age were recorded. The highest numbers of bald eagles in both years occurred on the Verde River and San Carlos Reservoir (Beatty and Driscoll 1999).

Even though the bald eagle has been reclassified to threatened, and the status of the birds in the Southwest is on an upward trend, the Arizona population remains small and under threat from a variety of factors. Human disturbance of bald eagles is a continuing threat which may increase as numbers of bald eagles increase and human development continues to expand into rural areas (U.S. Fish and Wildlife Service 1999). The bald eagle population in Arizona is exposed to increasing hazards from the regionally increasing human population. These include extensive loss and modification of riparian breeding and foraging habitat through clearing of vegetation, changes in groundwater levels, groundwater pumping, surface water diversion, alteration of natural hydrologic regimes, changes in water quality, and alteration of prey base from exotic aquatic species. Threats persist in Arizona largely due to the proximity of bald eagle breeding areas to major human population centers and recreation areas. Additionally, because water is a scarce resource in the Southwest, recreation is concentrated along available water courses. Some of the continuing threats and disturbances to bald eagles include entanglement in monofilament fish line and fish tackle; overgrazing and related degradation of riparian vegetation; malicious and accidental harassment, including shooting, off-road vehicles, recreational activities (especially watercraft), and low-level aircraft overflights; alteration of aquatic and riparian systems for water distribution systems and maintenance of existing water development features such as dams or diversion structures; collisions with transmission lines; poisoning; and electrocution (Arizona Game and Fish Department 1999, Stalmaster 1987).

Apache Trout

Apache trout are medium-sized fish listed as endangered in 1967 under the Endangered Species Preservation Act, and reclassified to threatened in 1975. Critical habitat has not been designated. Apache trout live in small headwater streams using pools for resting and riffles for feeding. It spawns in spring and early summer over gravel substrates. Apache trout feed mainly on aquatic insects.

Apache trout were formally described by R.R. Miller. Based on Miller's (1972) examination of museum specimens, it is believed the 19th century distribution of Apache trout included the White and Black river drainages, the headwaters of the Little Colorado drainage, and the Blue River. These streams are all within close proximity in the White Mountains, Arizona. Survey records from the 1980's (Rinne and Minckley 1991, Loundenslager *et al.* 1986, Dowling and Childs 1992, Carmichael *et al.* 1993) indicated that populations of Apache trout still remained in several streams of the Fort Apache Indian Reservation and Apache-Sitgreaves National Forests.

Habitat loss and degradation from cattle grazing, logging, mining, agriculture, road construction, water diversions, and reservoir construction, along with over-fishing, predation, hybridization, and competition from non-indigenous trout, have greatly reduced Apache trout distribution and numbers. Many watersheds formerly inhabited by Apache trout have been routinely stocked with non-native rainbow trout (*Oncorhynchus mykiss*), cutthroat trout (*Oncorhynchus clarki*), brook trout (*Salvelinus fontinalis*), or brown trout (*Salmo trutta*) since the early 1900s (Silvey 1984). Non-indigenous salmonids exhibit tendencies to out compete Apache trout for resources such as food, cover, and other similar niche requirements, and to prey on them. Such competition from brown trout and brook trout has been identified as a cause of the decline of Apache trout (Rinne *et al.* 1981, Rinne and Minckley 1991, Carmichael *et al.* 1993). Cutthroat and rainbow trout were spread extensively by stocking over the entire range of Apache trout, although natural barriers prevented hybridization in some watersheds.

The only pure populations of Apache trout remaining by the 1950s were those that were isolated in headwater streams where non-native trout were not stocked, most of which were upstream of natural waterfalls. These created natural barriers to upstream movement of non-native trout. By the 1960s, pure Apache trout populations had been reduced from a range of about 600 mi of stream to a low of about 30 mi (Harper 1978). The White Mountain Apache Tribe undertook the first attempts at conservation of Apache trout in the late 1940s and early 1950s when the only known populations existed on the Fort Apache Indian Reservation. In 1955, all Mt. Baldy streams on the reservation were closed to fishing. In 1963, the AGFD began stocking of Apache trout throughout Arizona for both restoration and sport fishing.

The FWS formed a recovery team in 1975 and the Apache trout was downlisted to threatened status. The threatened status allowed action agencies more flexibility to manage for Apache trout; this has included establishing sport fishing and hatcheries just for Apache trout. The recovery team produced the initial recovery plan in 1979, revised it in 1983, and another draft was written in 2001.

Our information indicates that, rangewide, 12 formal consultations have been completed or are underway for actions affecting Apache trout (Appendix C). Adverse effects to Apache trout have occurred due to these projects and many of these consultations have included reasonable and prudent measures to minimize effects to Apache trout. The Forest Service, White Mountain Apache Tribe, Fish and Wildlife Service, AGFD, and other cooperators are currently implementing many projects and recovery actions that provide habitat protection for Apache trout.

ENVIRONMENTAL BASELINE [in the action area]

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 which 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.

The general topography of the project area is gentle and rolling, with adjacent mountainous terrain. The proposed FH 43 project ranges in elevation from 9,088 ft to 9,383 ft, with the grade line of the road moving between ridges and drainages. The more significant drainages influenced by the roadway include Hall Creek, Benny Creek, the West and East Forks of the Little Colorado River, Colter Creek, and Burro Creek. FH 43 traverses forested and nonforested areas, but the majority of the route is located in dry meadow areas, particularly near drainages, and in upland areas where rock is at or near the ground surface and tree growth is sparse. Typically, in flat areas associated with drainages, there are wetlands and wet meadow depressions (cienegas) with associated riparian vegetation. Several cienegas (marshy lakes) have been modified to store water and are now reservoirs (i.e. Basin Lake, Colter Reservoir, White Mountain Reservoir, Crescent Lake, and Lee Valley Reservoir). Big Lake and Lee Valley Recreation Areas are popular recreation complexes on the Forest.

Naturally occurring changes in habitat type across the landscape are influenced by soil, aspect, elevation, and slope. Terrestrial habitats range in vertical structural complexity from late-successional mixed conifer and spruce/fir forest to open grassland. The highway intersects with roughly six different vegetation types: meadow/grassland, wetland, aspen, ponderosa pine, Douglas-fir/mixed conifer, and spruce/fir.

Riparian and riparian-shrub habitats can be found along the perennial and intermittent streams and along lakeshores in the vicinity of the project area. Important elements of riparian habitats include predominance of deciduous woody plant communities (willows), presence of surface water and soil moisture, closeness of diverse structural features (such as live and dead vegetation, water bodies, non-vegetated substrates), extensive edge providing structurally heterogeneous wildlife habitats, and distribution in long corridors that provide protective pathways for wildlife migrations and movements between habitat blocks.

In general, the area has been altered by road construction, recreation development, livestock grazing, dam/reservoir construction, and past timber harvest.

A. Status of the species within the action area

Bald Eagle

At present, little is known on the foraging patterns for the eagles that nested at Crescent Lake. According to AGFD, the eagles laid eggs but they failed to hatch in 2003 (James Driscoll, AGFD, pers comm, June 16, 2003). In 2004, the pair was found at the same nest as in 2003. Informal monitoring of the pair indicates that the birds breed later than the pair at nearby Luna Lake. In mid-March the pair was observed displaying mating behavior (Charles Denton, Apache-Sitgreaves National Forest, pers comm., March 16, 2004) and appeared to be incubating eggs by the end of March. The eagles are likely foraging at numerous lakes and reservoirs in the area. Basin, Crescent, and Big lakes, and Dipping Vat and Lee Valley reservoirs are all within a reasonable foraging distance for these eagles. Wintering eagles and infrequent summering eagles have been detected at Big Lake which is adjacent to the proposed project. The Forest Service has not closed the nesting area to recreation use.

Apache Trout

Within the action area, pure Apache trout are in Lee Valley Creek, and hybridized Apache trout populations occur within the West Fork of the Black River. Brown trout, brook trout, rainbow trout, and hybrids are scheduled for removal through renovation in the East and West Fork Little Colorado River and Lee Valley Creek, and subsequent stocking of pure Apache trout is scheduled. Section 7 consultation has been completed for Lee Valley Creek; however, the Forest Service is re-evaluating reintroduction of Apache trout into the West Fork of the Black River, East, West, and South Fork of the Little Colorado River, and Centerfire, Hayground, Stinky, and Conklin creeks, which may require additional section 7 consultation.

Streams scheduled for stocking within the action area

EAST FORK LITTLE COLORADO RIVER (EFLCR)

AGFD fish survey records indicate that the EFLCR was surveyed in 1987, 1993, and 2001 utilizing General Aquatic Wildlife System (GAWS) survey methodologies. These surveys documented the overall suitability of the EFLCR to support a viable population of Apache trout as well as the presence of nonnative trout. Currently the EFLCR does not support any Apache trout. However, there are plans to renovate the river followed by stocking of pure Apache trout.

LEE VALLEY CREEK

Lee Valley Creek is a northeasterly flowing tributary to the EFLCR. Lee Valley Reservoir is a 35 surface acre impoundment. It is currently managed as a Featured Species sport fishery, featuring Arctic grayling (*Thymallus arcticus*) and Apache trout. Although the reservoir seeps into Lee Valley Creek, spillover from the reservoir also flows into a channel leading into the West Fork Little Colorado River.

Arizona Game and Fish Department fish survey records indicate that Lee Valley Creek was surveyed in 1977, 1990, 1995, and 2001. The 1990 (only habitat data was collected), 1995, and

2001 surveys utilized GAWS survey methodologies, and documented the overall suitability of Lee Valley Creek to support a viable population of Apache trout. There are plans to renovate Lee Valley Creek followed by stocking of pure Apache trout.

WEST FORK LITTLE COLORADO RIVER (WFLCR)

The West Fork Little Colorado River is a northeasterly flowing tributary to the Little Colorado River in southern Apache County. The WFLCR is currently managed by the AGFD as an Intensive Use sport fishery. Stocking of approximately 11,000 catchable Apache trout at Sheeps Crossing occurs from April through September of each year.

Arizona Game and Fish Department fish survey records indicate that the WFLCR was surveyed in 1993 utilizing GAWS survey methodologies. The survey documented the overall suitability of the WFLCR to support a viable population of Apache trout and the presence of nonnative trout. Currently the WFLCR does not support any Apache trout. However, there are plans to renovate the river followed by stocking of pure Apache trout (Section 7 Consultation, 2-21-02-F-101, April 19, 2002).

Factors affecting the species' environment within the action area

Bald Eagle

Bald eagle nesting was first documented within the action area in 2003. The nest tree is located approximately one mile south of the proposed bridge near Crescent Lake dam. Crescent Lake may be one location where the eagles are foraging. However, it is more likely that the eagles are primarily using Big Lake while foraging. Information on wintering bald eagles is not available but they likely pass through the area.

The Crescent Lake eagles may be foraging at Crescent Lake. However, Crescent Lake has suffered winter kills of fish in 2001-2002 and 2002-2003. The kills were most likely due to the depletion of oxygen under the ice. Winter kills such as this occur commonly at Crescent Lake, but conditions have been worsened by the low water levels in the last several years.

Crescent Lake is an extremely fertile lake, which grows trout quickly, but also leads to vascular weed problems and algae blooms (both bluegreen and green). This in turn leads to high pH problems, which occasionally leads to a summer kill (most recently in 2000). Normally the Arizona Game and Fish Department cuts as many of the vascular aquatic plants as they can during the summer with a weed harvester which takes the cut weeds out of the system. Due to the low water levels, Arizona Game and Fish Department has been unable to launch the weed harvester at any of the boat ramps in the last three years.

According to Arizona Game and Fish, Big Lake is perhaps the best lake for fishing in the White Mountains area (Mike Lopez, Arizona Game and Fish Department, pers comm., October 21, 2003). Big Lake maintains good water quality throughout the year and has not had a fish kill in decades. Arizona Game and Fish stocks Big Lake very heavily. However, Big Lake gets considerable fishing pressure and much of the stocking is in response to this demand. Big Lake

also maintains open water longer into the winter and earlier in the spring than Crescent because of its size and exposure to winds.

Apache trout

Currently, recreational access to Sheep Crossing is allowing for parking along the roadway for quick access to the stream corridor. Current use in this area is estimated to be the highest of any of the Springerville Ranger District's high-elevation mountain stream habitats. The existing level of use is due to easy accessibility, the high scenic quality of the area, and the continued stocking of catchable sized Apache trout by Arizona Game and Fish Department. As a result, areas heavily used by recreationists occur both upstream and downstream from the current bridge crossing. Negative impacts to the riparian community have resulted from this use. Excessive trailing and compacted stream banks are especially evident downstream from the current bridge crossing. Current levels of use by recreationists should diminish with the removal of roadside access to Sheep Crossing, although over time, it is assumed that use of this area will increase due to increased numbers of Forest users.

EFFECTS OF THE 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. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

Bald Eagle

Since little is known about the Crescent Lake eagles, the best available information that we have concerning eagles in the area is from the behavior of the eagles at nearby Luna Lake (approximately 20 miles away) in Alpine. We do know that the Crescent Lake eagles were unsuccessful in their breeding attempt in 2003. However, bald eagles often fail to successfully breed in their few attempts when a new breeding territory is established (Arizona Game and Fish Department 1999). Additionally, these birds are breeding a little later than birds in southern parts of the state. We believe that in 2004 they laid eggs near the end of March.

Construction

Direct effects of construction include increased disturbance by humans, heavy machinery, and associated harassment. Project development (heavy equipment, land clearing, blasting, and paving) will likely disturb normal bald eagle breeding and feeding behavior.

An increase of potential disturbance activities will occur during the construction of the bridge at Crescent Lake. The degree of disturbance that raptors can tolerate is generally believed to be a function of the magnitude of the disturbance, the distance from the breeding site, and the raptor's habituation to human activities. Raptors in frequent contact with human activities tend to be less

sensitive to additional disturbance than raptors nesting in remote areas. Where prey is abundant, raptors may even occupy areas of high human activity, such as cities and airports (Newton 1979). The timing, frequency, and predictability of the disturbance may also be factors. It is unknown how much disturbance the Crescent Lake eagles are accustomed to within their breeding area. We know that FH 43 receives more use on weekends than during the week. The increased continued disturbance from construction-related activities may result in lower productivity of the pair, abandonment of the nest, or leaving the nest area.

The extent of disturbance to breeding eagles from January to June (or whenever construction begins) is unknown. Construction activities will generally occur between May and October in the years of the project; however, mild winters may allow for longer working timeframes. Therefore, construction on FH 43 may occur during a portion of the bald eagles breeding season for two to three years. The noise and activity associated with nearby heavy machinery use during the species' breeding season may result in the eagles not attempting nesting, abandoning the nest, or neglecting their young unless the birds are able to acclimate to the noise. Any foraging that the birds do at Crescent Lake during construction activities may be disturbed due to construction activities. The birds may forage at Big Lake or other nearby bodies of water to avoid construction noise and activity.

Paving the road around Crescent Lake will decrease the amount of dust and sedimentation that is presently generated by the soil and gravel roadway surface. This will have a positive effect on air quality and reduce the amount of potential soil sediment damaging the wetlands and other waters in the project area. The road will include improved drainage structures and safety features such as shoulders and guardrails. Ditches will be established or reshaped, as necessary, to improve drainage.

Recreation

Roads facilitate increased human access to formerly remote areas. By improving the road and making it wider, straighter, and flatter, an increase in the number and speed of vehicles using the road is expected. Improved routes often mean more users. The Forest Service expects use of the area to continue to increase and the road will facilitate this use. Currently, Forest Highway 43 is considered a destination route. Recreationists use the road to access the numerous camping and day use facilities located along the length of the road. Forest Highway 43 is also connected to many other rural highways that provide access to other areas of the Forest.

The draft Bald Eagle Conservation Assessment and Strategy notes that recreational pressures are increasing (Arizona Game and Fish 1999). Even the high-elevation breeding area at Luna Lake is exposed to increasing recreational use. Recreation will continue to increase even without the improved access, however, the paving of FH 43 will likely promote additional visitor use of the area.

Effects of recreation use on foraging bald eagles depends on many factors, including timing and availability of food, the number and quality of foraging sites available to the eagles, and the persistence, timing, intensity, and proximity of recreation activities in the vicinity. Successful and adequate foraging during nesting season is important for reproductive success.

Some individual birds may habituate to differing levels of disturbance or noise, but high levels of disturbance have been shown to cause strong reactions in nesting birds. Reactions of the bald eagles in this area are unpredictable; they could range from continued foraging and nesting in the area, to moving their nest farther away and continuing to forage (with or without reproductive success), to abandonment of nesting and foraging at this site.

Recent studies have demonstrated how recreation can influence the behavior of foraging and nesting eagles. McGarigal *et al.* (1991) discovered that foraging eagles typically avoided an area around a stationary boat. Their study confirmed that boating activities have the potential to significantly affect eagle spatial use patterns and can effectively cause eagles to avoid use of an area. Another study along the Gulkana River in Alaska (Steidl and Anthony 1999) assessed the effects of increased recreation to nesting eagles. Human activity decreased some eagle activity by 59 percent and the time they left their nest area unattended increased 24 percent. This resulted in birds consuming 29 percent less prey per day. It is possible that the bald eagles at Crescent and Big lakes may experience similar effects. Due to recreation use in the areas the eagles may travel longer distances to forage and in turn spend less time at the nest. This could ultimately result in lower productivity for this breeding pair.

Disturbance to foraging of the Crescent Lake bald eagles will likely increase during late spring and early summer, peak in mid-summer, and continue until the road closes or the weather turns too cold. The frequency of disturbance from people at this site is likely to be highest and most often on weekends during the daylight hours during the summer months (FH 43 is closed due to snow during winter months). Anecdotal information indicates that the Big Lake campgrounds, which are the destination of the road, are at capacity during holiday weekends, so the project will not likely increase campground use during those times. Nevertheless, improved access could increase Forest use for other recreational activities, which could lead to more recreation-related conflicts with the eagles. If disturbance levels are too high or activities and presence of people in or on the lakes alters or prevents successful foraging, bald eagle reproduction could suffer. During breeding season, bald eagles spend approximately half their time incubating eggs or attending nestlings and half their time foraging. If forced by disturbance to forage for longer periods of time, or to shift foraging sites, time and energy expended would be taken from incubation or nestling attendance. Eggs and young would be more vulnerable and exposed to temperature changes and predation for longer periods of time. This could result in reduced or failed reproduction.

In summary, human activity can disturb bald eagles, and the growing popularity of outdoor recreation increases the potential for direct conflicts between recreationists and eagles. The effects of human activity on the distribution, occupancy, activity, success, and productivity of bald eagle nesting sites have been widely studied (Stalmaster and Kaiser 1998, Grubb and King 1991, McGarigal *et al.* 1991) and significant disturbances to eagles have been documented. General management plans are available for protecting bald eagles; however, the recommendations often do not apply for the specific circumstances at individual breeding areas. The Crescent Lake breeding area may benefit from management that reduces recreational activities at foraging and breeding areas around Crescent and Big Lake. The direct and indirect effects of the proposed project may take the form of sustained or increased human activity levels, increased possibility of disturbance by construction noise and possible conflicts during foraging attempts. These impacts would occur during the life of the proposed project.

Apache Trout

At present, FH 43 is a gravel road with some paved areas with a high level of use. The current roadway is an active source of sediment into the WFLCR and EFLCR and into Burro Creek. The larger separation between the highway and Burro Creek should reduce the amount of sedimentation entering the creek and the surrounding wet meadow area from the current highway alignment. Realignment of FH 43, including bridge construction and obliteration of the old road segments, will eventually reduce sediment runoff but may result in short term adverse impacts to the populations of Apache trout in the WFLCR, EFLCR, and WFBR. This action could result in localized bank damage, disturbance to substrates and benthic invertebrate populations, damage to eggs and fry of the Apache trout if construction takes place during the spawning season, and disturbance to adult trout. Spawning in White Mountain streams is known to occur from March through mid-July, varying with stream elevation (USFWS 2001). Construction of the new bridge and reconstruction and obliteration of the current FH43 alignment will also cause short-term increases in surface erosion that will enter the LCR drainages and Burro Creek/West Fork Black River. Adherence to the project erosion control measures should reduce the impacts to Apache trout from increased sedimentation within the EFLCR. Located less than 0.5 mile downstream from the current highway alignment, Colter Reservoir will act as a catch basin for sediment generated by this project that might have otherwise been carried downstream. Increased turbidity within the drainages will likely occur during construction and will be monitored in accordance with required Best Management Practices. Should turbidity readings increase by 10 N.T.U.s or greater from control reach readings in the EFLCR or WFLCR, construction activities will be suspended in the vicinity of the problem area until the erosion control plan is modified to reduce erosion into channels. Short-term adverse effects to the species will result from sediment-induced alterations in stream substrates utilized during Apache trout spawning, incubation, juvenile rearing, and in food production. Long-term effects will be beneficial as construction and rehabilitation sites stabilize and surface erosion from the roadbed is diminished from current levels through road paving.

Removal of the existing railroad grade will result in sedimentation, bank damage, and loss of riparian vegetation at the construction sites. Instream work is anticipated to last from one to two weeks. Apache trout in the WFLCR will be adversely affected, in the short-term, by the sediment loading generated by the railroad grade removal. Increased turbidity during construction will be monitored as indicated in the Best Management Practices. Long-term benefits from railroad grade removal include restoration of the WFLCR channel to a more natural grade which will provide increased channel stability. A more natural flow regime within WFLCR would allow for more effective use of the floodplain which will aid in water energy dissipation as well as the recruitment and retention of desirable deciduous species in the riparian community upstream of the current railroad grade crossing. Once the railroad grade is removed, adverse impacts to Apache trout will occur until the channel stabilizes to a more natural grade. Installation of instream sediment structures should ameliorate some of the sediment movement that might be expected during each high flow event. After channel stabilization, the species will benefit from unobstructed movement throughout the reach as culverts are removed and channel geometry is restored.

Many of the recreation conflicts due to access to the river that are now occurring will be resolved with the new project design. Recreation use will be better managed with access encouraged through the existing Sheep Springs Trailhead rather than along the roadway. Continued angler use of the area is expected to occur, as well as the continued stocking of catchable Apache trout at Sheep Crossing. The construction of the turn around area, trails, and hardened fishing area adjacent to WFLCR will result in a short-term increase in sedimentation during construction for up to two years after construction, until disturbed sites become revegetated.

Willow fencing along the EFLCR will promote riparian habitat development resulting in improved conditions for Apache trout. Short-term sedimentation may occur as a result of the fencing activities, but is not likely to be at a level to adversely affect Apache trout. Over the long-term, this treatment will provide a healthy deciduous riparian stand that will maintain stream bank integrity during high flows and trap sediment.

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. Since the entire project area is within the Apache-Sitgreaves National Forests, all legal actions likely to occur are considered Federal actions.

CONCLUSION

Bald Eagle

After reviewing the current status of the bald eagle, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is our biological opinion that the proposed paving and reconstruction of portions of FH43, as proposed, is not likely to jeopardize the continued existence of the bald eagle. No critical habitat has been designated for this species; therefore, none will be affected. We present this conclusion for the following reasons:

1. The population status of the bald eagle continues to improve both within the Southwest and range-wide.
2. This is a new territory that has never been known to reproduce successfully. Thus, even if this territory is prevented from becoming a contributor to the population of the Southwest, it would not be a significant setback to the species' survival and recovery.

Apache Trout

After reviewing the current status of the Apache trout, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is our biological opinion that the proposed paving and reconstruction of portions of FH43, as proposed, are not likely to jeopardize the continued existence of the Apache trout. No critical habitat has been designated for this species; therefore, none will be affected. We present this conclusion for the following reasons:

1. In general, there is an upward trend in Apache trout numbers due to recovery efforts by the Forest, Arizona Game and Fish Department, and other cooperators. These recovery efforts, involving Apache trout stocking, are expected to continue.
2. The adverse effects will be transitory and are expected to be of short duration.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, 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 (50 CFR 17.3) 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. "Harass" is defined (50 CFR 17.3) 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. "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 Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Federal Highway Administration so that they become binding conditions of any grant or permit issued to contractors, as appropriate, 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 assume and implement the terms and conditions or (2) 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, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Federal Highway Administration or applicant must report the progress of the action and its impact on the species to the FWS as specified in the incidental take statement [50 CFR §402.14(i) (3)].

AMOUNT OR EXTENT OF TAKE

Apache trout

The FWS anticipates incidental take of Apache trout in the form of killing or harm will be difficult to observe for the following reasons. Apache trout eggs, fry, and young fish are small, blend into their environment, and occur underwater in a flowing river. Project implementation will temporarily increase sedimentation, thus creating a turbid river environment making it difficult to see fish. Water flow may move specimens out of the immediate area of detection. Heavy equipment may be used around the stream bank which may further increase sedimentation. We anticipate the extent of incidental take to include fish, fry, and eggs in the action area when construction on Sheep's Crossing Bridge and the removal of the railroad grade occur. Authorized take will be considered to have been exceeded if more than 15 dead Apache trout are detected during one event within 0.5 miles upstream and 0.5 miles downstream of construction activities at Sheep's Crossing and it is reasonably certain that such mortality was caused by the proposed action. This would include any indications that the Best Management Practices are not working to control sediment input, or that a more severe problem has occurred.

Bald eagle

Using available information as summarized within this document, we have identified conditions of incidental take for the bald eagles at Crescent Lake associated with increased recreation as a result of the construction of Forest Highway 43. Based on the best available information concerning bald eagles, habitat needs of the species, the project description, and information furnished by the Federal Highway Administration, take is anticipated for bald eagles as a result of noise and disturbance from heavy machinery during construction of FH 43 and the predicted high levels of recreation use within the Big Lake Recreation Area.

We anticipate that the eagles at Crescent Lake will have a lowered productivity due to increased recreation in the area. The incidental take is expected to be in the form of harm to foraging bald eagles and eagles at the nest during spring and summer months. The proposed action is expected to disrupt essential breeding behavior. Due to the harm we anticipate that the pair will be unsuccessful or will have lower productivity. This take is expected to occur for the life of the campground.

Currently little is known about the productivity rates of the eagles at Crescent Lake since the breeding area was established in 2002. We do know that the eagles have laid eggs for two consecutive breeding seasons. Statistics are available for nearby Luna Lake (average of 1.3 eagles fledged per year) (Table 1). However, the Luna Lake eagles are slightly more productive than the statewide average (Table 2). We would assume that, once established, the eagles at Crescent Lake will have a similar average productivity somewhere between those eagles at Luna Lake and the statewide average. Therefore, we will assume authorized incidental take to have been exceeded if, after 10 years beginning in 2005 the birds do not have similar or higher breeding productivity than the statewide average currently at .60 eagles and that take is associated with recreation. For example, the amount of authorized incidental take will have been exceeded if the birds fledge less than six eagles in the 10-year period starting in 2005 and that take is associated with increased recreational activities attributable to the project.

Table 1: Luna Lake Bald Eagle Productivity Summary 1971 – 2003
Number of eagles fledged per year

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Average
Luna	1	1	2	3	1	1	1	F	2	1	1.3

*F = Failed

Table 2: Statewide Bald Eagle Productivity Summary
(Total Fledged Bald Eagles/Occupied Breeding Areas)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Average
Statewide	.66	.83	.83	.67	.58	.86	.57	.75	.9	.58	.723

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 the FWS 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 and TERMS AND CONDITIONS

In order to be exempt from the 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 below and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

Bald eagle

The following reasonable and prudent measures are necessary and appropriate to minimize take of bald eagles:

1. The Federal Highway Administration shall monitor and report results of all surveys and incidental take resulting from the proposed action to the FWS.
 - 1.1 A monitoring plan should be developed and coordinated with the Apache-Sitgreaves National Forest and Arizona Game and Fish Department.
 - 1.2 At a minimum, monitoring shall include productivity of the nest, responses of bald eagles to construction, and responses to recreational use.

Apache trout

The following reasonable and prudent measures are necessary and appropriate to minimize take of Apache trout:

1. FHWA shall conduct all proposed actions in a manner which will minimize direct mortality of Apache trout.
 - 1.1 FHWA and the construction contractors will use Best Management Practices, technical advice, and biological information on ways to minimize adverse effects to Apache trout and its habitat (e.g. protection against toxic spills into the river and floodplain, reduction of sedimentation, minimizing loss of riparian vegetation).
2. FHWA shall maintain complete and accurate records of actions which may result in take of Apache trout.
 - 2.1 FHWA shall submit an annual report to this office each year until construction activities are completed within and immediately adjacent to the river corridor. This report shall include monitoring results for Apache trout discovered at the construction site, a description and explanation of any project mitigation measures which were not implemented or which had a result not otherwise expected, and complete and accurate records of any incidental take that occurred during the course of the project.
 - 2.2 This office shall be notified immediately (602-242-0210) if more than 15 dead Apache trout are detected during any one event within 0.5 miles upstream and 0.5 miles downstream of construction activities at Sheep's Crossing bridge. Any construction actions that may be contributing to the introduction of toxic materials or other causes of fish mortalities must be immediately stopped while we are contacted and until we agree the situation is remedied.

Review requirement: 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. If, during the course of the action, the level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The Federal Highway Administration must immediately provide an explanation of the causes of the taking and review with the AESO the need for possible modification of the reasonable and prudent measures.

Disposition of Dead or Injured Listed Species

Upon locating a dead, injured, or sick listed species, initial notification must be made to the FWS's Law Enforcement Office, 2450 W. Broadway Rd, Suite 113, Mesa, Arizona, 85202,

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 sick or injured animals to ensure effective treatment and care and in handling dead specimens to preserve the biological material in the best possible state.

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. We recommend the following two conservation measures.

1. Develop and promote an outreach presentation that educates and explains the importance of protection of all species, with an emphasis on recovering listed species. For example, outreach materials at Sheep's Crossing could inform recreationists about Apache trout, Southwestern willow flycatcher, and the importance of riparian habitat.
2. We recommend that the Federal Highway Administration fund a study to look at resource allocations among bald eagles at the high elevation lakes.

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.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in your request. 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 the 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.

The FWS appreciates the Federal Highway Administrations efforts to identify and minimize effects to listed species from this project. For further information please contact Jennifer Graves (x232) or Debra Bills (x239). Please refer to the consultation number, 2-21-97-F-0229, in future correspondence concerning this project.

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ES)
Forest Supervisor, Apache-Sitgreaves National Forests, Springerville, AZ
Shaula Hedwall, Arizona Ecological Services Field Office, Flagstaff, AZ
Leslie Ruiz, Pinetop Fishery Resource Office, Pinetop, AZ

Bob Broscheid, Arizona Game and Fish Department, Phoenix, AZ

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APPENDICES

APPENDIX A: CONCURRENCE FOR MEXICAN SPOTTED OWL

The entire FH 43 is located on the Springerville Ranger District on the Apache-Sitgreaves National Forests. The Springerville Ranger District is located within the Upper Gila Mountains Mexican spotted owl Recovery Unit (RU) as described in the Mexican Spotted Owl Recovery Plan (USDI Fish and Wildlife Service 1995). Spotted owls are widely distributed in this RU. They occur most commonly in mixed-conifer forests dominated by Douglas fir and/or white fir and canyons with varying degrees of forest cover (Ganey and Balda 1989, Ganey and Dick 1995). Owls also occur in ponderosa pine-Gambel oak forest, where they are typically found in stands containing well-developed understories of Gambel oak. On November 18, 2003, critical habitat for the Mexican spotted owl was proposed (U.S. Fish and Wildlife Service 2002). An email transmission from the Forest Service indicates that the project is not within proposed critical habitat.

General management recommendations for use throughout the range of the Mexican spotted owl are given in the Mexican Spotted Owl Recovery Plan (USDI Fish and Wildlife Service 1995). Recommendations include three levels of habitat management: (1) protected habitat which includes protected activity centers (PACs) around known sites (approximately 600 acres each) and suitable habitat on steep slopes; (2) restricted habitat, which includes unoccupied areas, that will be managed to produce foraging habitat and replacement nest/roost habitat; and (3) "other forest and woodland types", which require no specific management. Spotted owl PACs have been designated for all known owl sites on the ASNF and are being managed according to recommendations in the Recovery Plan.

The proposed project will include an increased disturbance during construction and realignment of the existing road and an increase in recreation use to the area. The response of wildlife to noise disturbance is complex, being neither uniform nor consistent. Delaney *et al.* (1997) reviewed literature on the response of owls and other birds to noise and concluded the following: 1) raptors are more susceptible to disturbance-caused nest abandonment early in the nesting season; 2) birds generally flush in response to disturbance when distances to the source are less than approximately 200 feet and when sound levels are in excess of 95 dBA; and 3) the tendency to flush from a nest declines with experience or habituation to the noise, although the startle response cannot be completely eliminated by habituation.

Our guidance is to limit potentially disturbing activities to areas 0.25 mile from MSO nest sites during the breeding season (March 1 through August 31). This corresponds well with the Delaney *et al.*'s (1999) 0.25 mile threshold for alert responses to helicopter flights. Maintenance activities associated with this project will not occur within 0.25 mile of potential nesting habitat during the MSO breeding season. However, Delaney *et al.* (1999) found that ground-based disturbances elicited a greater flush response than aerial disturbances. The Fish and Wildlife Service's Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (2002) recommends a spatial buffer of 0.5 mile around MSO nests during the breeding season for maintenance and construction activities during the post-brooding nestling period. The full buffer is recommended because there is the risk that these activities will adversely impact the MSO's ability to successfully rear young.

Surveys for MSOs were conducted in the vicinity of the proposed project area in 1989, 1990, 1993, and 1994 for the Burro Timber Sale and the Little Colorado Ecosystem Planning Unit. No owls were detected during these efforts. Surveys specifically for the proposed FH 43 road project were conducted in 1998 and 1999. An additional complete survey will be completed before construction starts. Surveys for the FH 43 project are being conducted according to the U.S. Fish and Wildlife Service approved Mexican spotted owl inventory protocol (March 1994).

In 1998, a pair of MSO was located in the WFLCR drainage approximately 1.5 miles down stream of the Sheep Crossing Bridge. In 1999 a pair of MSO were again located in the WFLCR drainage in the same general area as 1998. Mousing efforts were successful in locating a nest tree approximately 2 miles down stream of the existing bridge at Sheep Crossing. A 645 acre PAC (WFLCR #010613) was established encompassing all MSO detection sites. The southern PAC boundary is 0.10 mile from the existing road as it drops into Sheep Crossing and approximately 0.5 mile from the proposed bridge site at Sheep Crossing. This PAC was informally monitored in 2000, 2001, and 2002. In 2000 a pair of MSO was located near the documented nest site. Reproductive success could not be determined at that time. Informal monitoring completed in 2001 was unable to locate any MSO within the established PAC. In 2002, a pair of MSO was located near the historical nest site. Again, reproductive success could not be determined. Yearly PAC monitoring will continue through 2004.

Only one other PAC is in the vicinity of the proposed project (Burro Mountain PAC #010610T). The tip of the PAC's northern boundary is approximately 0.25 mile from the existing road alignment along Burro Creek. The PAC was established in 1995 and is designated around two historical owl sightings and recent sightings in the same general area. Two survey outings in 1989 failed to locate MSO in the area. In 1993, a MSO was documented flying during the day from tree to tree on the south slope of Burro Mountain, approximately 2 miles from FH 43 and one mile from the historical roost site. Shortly after this daytime sighting, two night time surveys were conducted and no MSO were detected. In 1999 and 2000 the Burro PAC was resurveyed and again no MSO were detected.

The vast majority of the project will remain on the existing alignment. Modification of the road alignment, including the removal of all trees within the new roadway, will occur at the WFLCR crossing, Voigt Cabin, and at Burro Creek. The realignments will result in the following habitat modification: 1) WFLCR bridge crossing -- approximately 1 acre of spruce fir forest type, 2) Voigt Cabin -- 1 acre of mixed conifer habitat, 3) Burro Creek --1.5 acres of mixed conifer and 3.5 acres of ponderosa pine. The ponderosa pine and spruce-fir are considered "other forest types" in the MSO Recovery Plan and are under no specific management guidelines for Mexican spotted owls. These "other forest types" could provide potential foraging habitat. The loss of 4.5 acres of "other forest type" will not significantly impact prey base habitat. The 2.5 acres of mixed conifer is considered "restricted" in the MSO Recovery Plan. The underlying objective of the guideline in the Recovery Plan is to manage the landscape to maintain and replace owl habitat where appropriate, while providing a diversity of stand conditions across the landscape. The removal of the railroad grade and obliteration of roadway adjacent to Burro Creek will result in the restoration of approximately 2 acres of "restricted" habitat and could improve potential prey base habitat.

Potential disturbance levels could increase in the project area during the construction and paving of the roadway. Disturbance could be higher at bridge sites and river crossings where equipment will be concentrated for longer periods of time. The Burro Mountain PAC is located 0.25 mile from the existing roadway that will be obliterated, 0.5 mile from the new road alignment, and 0.75 mile from the Burro Mountain pit that can be used as a staging area. The road obliteration will not require a concentration of equipment near the PAC. The new road alignment and pit/staging area are greater than 0.5 mile from the PAC boundary. Due to the distance between the Burro PAC boundary and the actual project area, disturbance impacts to the Burro PAC will be discountable.

The WFLCR PAC is located approximately 0.5 miles downstream of the new bridge site at the WFLCR, and 0.1 mile from the closest point along the roadway. Surveys and monitoring over the last 5 years has resulted in the documentation of some general MSO habitat use patterns within the PAC. Night-time audio responses have occurred through out the PAC and as close as 0.5 miles from the new bridge site and 0.1 mile from the roadway on the north side of the WFLCR. Because the owls were heard at night it can be expected that the MSOs were foraging. The only MSO roost or nest site known in the PAC is 1.25 miles to the closest point on the roadway and 1.8 miles from the new bridge site. This nest/roost site has been used 4 of the 5 years monitored.

The monitoring information obtained over a five-year period of the WFLCR PAC indicated that foraging is occurring throughout the PAC. However, foraging outside the PAC should be expected. MSOs forage almost exclusively during the nighttime when there would be no construction activity. Although noise levels will increase near the roadway and the bridge site during daylight hours, MSOs foraging at night will not be impacted by this increased disturbance. The only documented nest/roost area known to be used 4 of the 5 years monitored is located over 1.25 miles from the closest potential construction noise source and 1.8 miles from the new bridge site. Due to the distance, vegetation, and topography, any potential effect from an increase in noise to the nest/roost site should be discountable. No seasonal timing restrictions are being proposed.

The speed limit for the existing and improved roadway will remain at 40 mph. The speed limit at the WFLCR crossing will increase from 25 mph to 35 mph. Traffic is currently increasing yearly and is expected to continue to increase once paving is completed. This increase in traffic can be expected to occur mainly during the daylight hours because this road primarily provides a route to recreational destinations on the Forest and does not provide a route to any communities or residential areas. Traffic count data from September 19, 2001 to September 24, 2001 illustrate that the highest volume of traffic occurs during the daylight hours. The graphs indicate that by 4 p.m there is a decrease in traffic use on FH 43.

We concur with your determination that the proposed realignment of FH43 may affect, but is not likely to adversely affect, the Mexican spotted owl for the following reasons:

1. The roost/nest site of the WFCLR PAC is over 1.25 miles away from the road; therefore, construction disturbance is discountable.
2. Traffic data indicate that there is not a high volume of night-time travel on FH 43 and night-time travel is not expected to increase due to paving and realignment. The

speed limit for the road will remain the same. The probability of an owl colliding with a car due to these factors is discountable.

3. Habitat loss will be insignificant.

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APPENDIX B: Maps

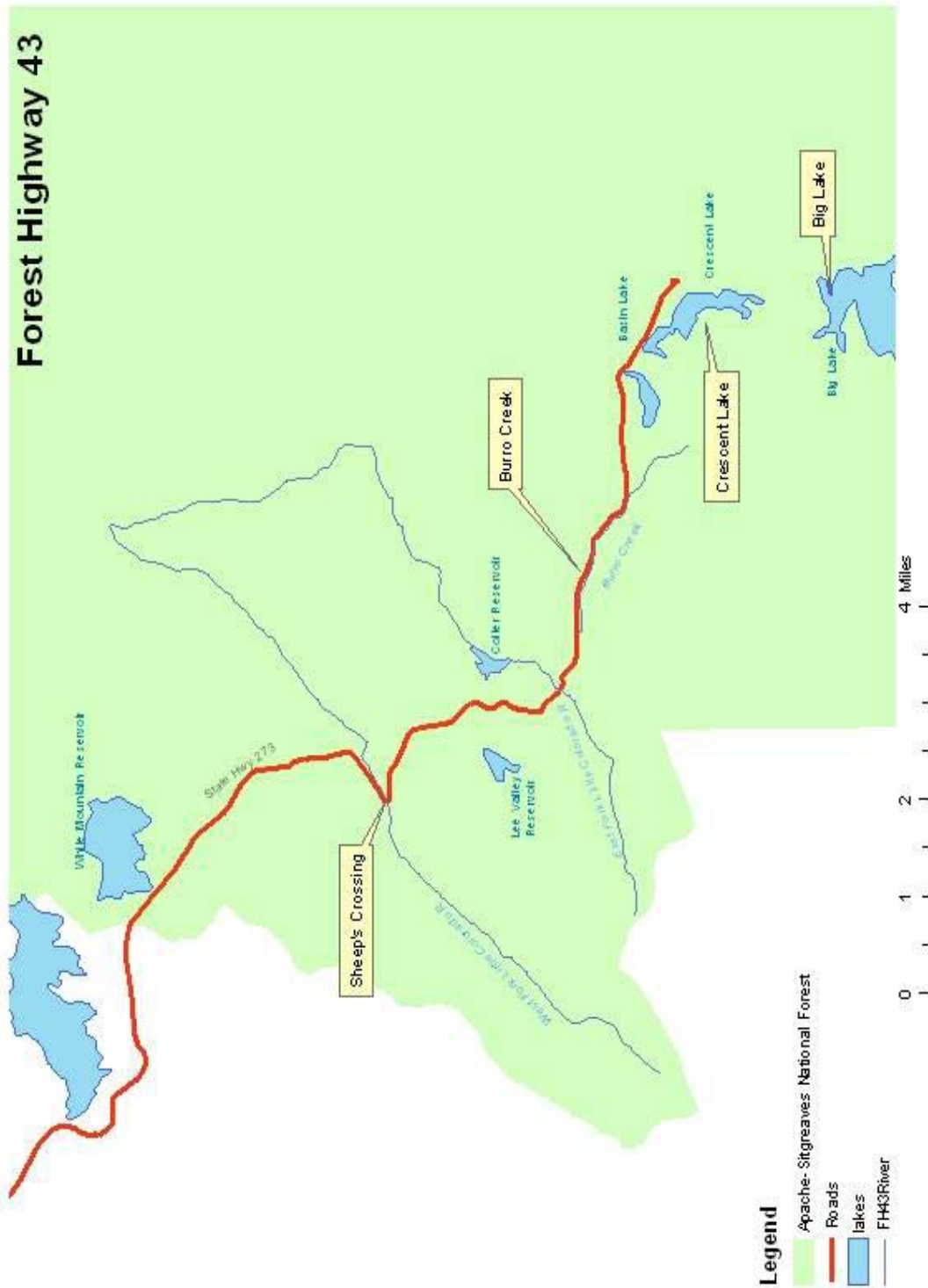


Figure 1: Overview Map of Forest Highway 43 Project Area.

Appendix C: Formal Apache trout consultations to date

Consultation Number	Date	Name	Anticipated Incidental Take
2-21-90-F-222	November 7, 1990	Pinaleno Mountains Recreation Projects	Yes, 2 Apache trout per year
2-21-91-F-076	December 4, 1992	West Fork Allotment Management Plan	Yes, take anticipated, however, take is not quantifiable so surrogate measures are provided
2-21-91-F-054	May 7, 1993	Effects to Loach Minnow and Apache Trout from proposed Campbell and Isabelle Timber Sale	Yes, take anticipated, however, take is not quantifiable so surrogate measures are provided
2-21-90-F-120, 2-21-92-I-666	July 20, 1993	Proposed Burro Creek, Hayground, and Reservation Allotment Management Plan Revision and A Watershed Approach to Coldwater Fisheries West Fork of the Black River	Yes, take anticipated, however, take is not quantifiable so surrogate measures are provided
2-21-94-F-437	December 22, 1994	The Effects of the Apache Trout Habitat Improvement Project on the Threatened Apache Trout	Yes, take anticipated, however, take is not quantifiable so surrogate measures are provided
2-21-95-F-0503	October 27, 1995	10-Year term permit for livestock grazing on the Sprucedale-Reno and KP/Raspberry Allotments	Yes, take anticipated, however, take is not quantifiable so surrogate measures are provided
2-21-92-F-550 and 2-21-96-F-187	December 11, 1998	Arizona Water Quality Standards	Yes, take anticipated, however, take is not quantifiable so surrogate measures are provided
02-21-90-F-119a	April 17, 2001	Revised Biological Opinion on Transportation and Delivery of Central Arizona Project Water to the Gila River Basin in Arizona and New Mexico and its Potential to Introduce and Spread Nonnative Aquatic Species	Yes, take anticipated, however, take is not quantifiable so surrogate measures are provided
02-21-02-F-030	April 5, 2002	Mineral Ecosystem Management Area (MEMA) Apache Trout, Apache Sitgreaves National Forest	No
02-21-02-F-101	April 19, 2002	Apache Trout Reintroduction	Yes, up to 200 Apache trout killed and 25% of released Apache trout harassed
02-21-03-F-0298, 02-21-03-F-0299, 02-21-02-F-0501	July 8, 2003	Biological Opinion for Allotment Management Plans for the Voigt, Greer, and Sheep Springs Allotments	Yes, take anticipated, however, take is not quantifiable so surrogate measures are provided
02-21-97-F-0229	In Consultation	Biological Opinion for Sunrise Park-Big Lake Road - Forest Highway 43	In Consultation