United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

May 2, 2000

Cons. # 2-22-00-F-044

Mr. James W. Keeley
U.S. Department of Transportation
Federal Highway Administration
555 Zang Street, Room 259
Lakewood, Colorado 80228

Dear Mr. Keeley:

This responds to your February 2, 2000, request for formal consultation with the U.S. Fish and Wildlife Service (Service) under section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The request concerns the reconstruction of New Mexico Forest Highway 45, Sacramento River Road, Sunspot to Timberon (Sacramento River Road), within the Sacramento Ranger District of the Lincoln National Forest, Otero County, New Mexico. The Federal Highway Administration (FHWA) will redesign and construct 13.1 miles of the Sacramento River Road. The proposed action includes reconstructing the existing unpaved road to a two-lane paved road. FHWA has determined that the proposed action is likely to adversely affect the Mexican spotted owl (*Strix occidentalis lucida*) (owl), but is not likely to adversely affect the Sacramento Mountains thistle (*Cirsium vinaceum*) (thistle). We believe that there is the potential for the thistle to be adversely affected because the Scott Able creek has been dry for several years and thistle surveys have not been conducted since 1996. Therefore, this document represents the Service's biological opinion on the effects of that action on both the threatened owl and thistle and their habitats in accordance with section 7 of the Act.

This biological opinion is based on information provided in the September 1999, biological assessment (BA); the December 1999, corrected BA with an addendum; the December 1999, plant comments document; the 1999, Sacramento River Road Inventory and Monitoring Report for the Mexican spotted owl; the July 1999, Draft Environmental Impact Statement (DEIS); telephone conversations between our staffs; data presented in the final Recovery Plan (USDI 1995) for the owl; data in our files; Forest Service regional owl data; literature review; and other sources of information. References cited in this biological opinion are not a complete bibliography of all literature available on the owl, the proposed action 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

Informal consultation began on February 6, 1995, when the Forest Service submitted a scoping letter with request for comments on the proposed project. The Service provided comments and a species list on March 17, 1995. We received a scoping report on May 24, 1996, and a preliminary DEIS was submitted on April 24, 1997. We met with you on June 4, 1997, to discuss the project and any concerns with potential adverse impacts of the proposal. We received the DEIS and BA on October 12, and October 4, 1999, respectively. We commented on the DEIS and BA on November 3, and November 19, 1999, respectively. Subsequently, you submitted an addendum to the BA on January 5, 2000. We met with FHWA and Forest Service on January 13, 2000, and they provided additional information on the project. The New Mexico Ecological Services Field Office received the final BA with a request for formal consultation on February 2, 2000. The request for formal consultation was acknowledged by this office in a letter dated February 17, 2000.

BIOLOGICAL OPINION

It is the Service's biological opinion that the proposed redesign and construction of 13.1 miles of the Sacramento River Road, as addressed in this document, is not likely to jeopardize the continued existence of the either the Mexican spotted owl or Sacramento Mountains thistle.

DESCRIPTION OF THE PROPOSED ACTION

The existing road is narrow and inconsistent in width, varying between 13- and 26- feet and is composed primarily of dirt and gravel with shoulders inadequate or absent. The FHWA estimates that the current average daily traffic is 173 vehicles per day. This traffic includes logging trucks, recreational vehicles, school buses, and automobiles. The road is in very poor condition, with steep grades, washboarding of the road surface, and muddy areas during wet weather and considerable amounts of dust during dry weather. Further, significant amounts of sediment from the road currently drain into the Sacramento River. The proposed improvement would provide a safer, more comfortable facility for increasing volumes of logging trucks, recreational vehicles, school buses, and automobiles. The FHWA expects traffic on the Sacramento River Road to increase after paving, and estimates a 3 percent per year growth rate in traffic. Therefore, the volume of traffic for the no-action alternative (i.e., no road improvements or reconstruction) is projected to be 312 vehicles per day by the year 2020, and, if the road is improved, the projection increases to 555.

The FHWA is proposing to redesign and construction of 13.1 miles of the Sacramento River Road. The project begins at the junction of Forest Road (FR) 537 and State Highway 6563, near Sunspot and extends southeaster along FR 537 and the Sacramento River to Timberon. The current project includes improving the existing one- to two-lane gravel road to a two-lane paved road, with a design speed of 30 mph. The new road will be shifted approximately 375 east, up and away from the river, wetlands, and riparian areas, and will include improved drainage structures, shoulders, pullouts, and guardrails. The travel lane and shoulder width will total 24 feet, with applicable curve and guardrails. The amount and extent of disturbance along the proposed alignment will be variable depending on topographic conditions; however, cut and fill slopes will be minimized, but designed to achieve a 4:1 ratio within the existing right-of-way (100 feet either side of centerline).

The stated purpose and need for the action is to: 1) provide safe, functional, all-weather access from Sunspot to Timberon; 2) reduce adverse environmental effects, especially those resulting from the proximity of the road to the stream; and 3) provide a safe, functional, and appropriate access to a portion of the Lincoln National Forest for recreational uses and administrative needs. The project will also meet road design standards and project year 2020 traffic volumes.

The proposal, as identified in the DEIS and BA, will produce the following impacts:

1) Vegetation, including all trees and shrubs (i.e., clearing of 75.7 acres of timber and 9.4 acres of meadow), will be removed to accommodate the powerline, poles, and access road.

2) Gravel will be hauled into the project area from three possible sites (Cathy, Hornbuckle, and Danley) and excess materials may be hauled off of the project site, possibly to Snakey Canyon. There may be six staging areas (City land, Danley Canyon pit site, Sac Lake, Apple Tree, Fairchild forest, and Wormwood flat) for construction equipment.

3) Dust palliatives (calcium chloride or magnesium chloride) may also be used, either between phases of construction or as a treatment for gravel surfacing, if paving is delayed.

4) Some segments along the 13.1 miles of rights-of-way (except for the southern end) may be fenced. For example, barriers for vehicles greater than 50 inches will be installed in Corral, Thousand Mile, Apple Tree, and Spiller canyons and cattle lanes will be constructed along some areas to provide access for livestock between the road and fenced wetland areas.

5) An additional 93 acres would be modified through the felling of hazard trees within 100 feet of the road. Trees that are dying or leaning toward the road or powerlines will be removed. An additional 20 acres would be isolated.

According to FHWA, the project would begin during Fall 2000, and be completed in 2 segments, each lasting approximately 2 to 3 years. Therefore, it may take about 5 years to complete the entire project. The proposed action contains the following measures which will be implemented as part of the project to avoid or otherwise minimize potential adverse affects of the action on sensitive and listed species:

1) Occupancy surveys for the owl will be conducted annually in unoccupied suitable habitat (e.g., mixed conifer), including gravel pits, staging and blasting areas. Likewise, formal reproductive monitoring will also be conducted annually within the known PACs. Based on the results of these data, the following will apply:

a) If construction activities are is within 1/4 mile of an owl nest, then seasonal restrictions (March 1-August 31) will be placed on that segment of the project; or

b) If the nest site is greater than 1/4 mile from the project segment, construction activities will not have a seasonal restriction.

STATUS OF THE SPECIES (range-wide)

The Mexican spotted owl was listed as threatened on March 16, 1993 (58 FR 14248). Critical habitat for the owl was designated on June 6, 1995 (60 FR 29914), but was subsequently withdrawn on March 25, 1998 (63 FR 14378). Background and status information on the owl is found in the Final Rule listing the owl as a federally-threatened species (58 FR 14248), previous biological opinions provided by the Service to the Forest Service, and the final Recovery Plan. The information on species description, life history, population dynamics, status, distribution, and range-wide trends provided in those documents is included herein by reference and is summarized below.

The American Ornithologist's Union currently recognizes three spotted owl subspecies, including the California spotted owl (*Strix occidentalis occidentalis)*; Mexican spotted owl (*S. o. lucida)*; and northern spotted owl (*S. o. caurina)*. The Mexican spotted owl is distinguished from the California and northern subspecies chiefly by geographic distribution and plumage. The Mexican spotted owl is mottled in appearance with irregular white and brown spots on its abdomen, back and head. The spots of the Mexican spotted owl are larger and more numerous than in the other two subspecies giving it a lighter appearance. Several thin white bands mark an otherwise brown tail. Unlike most owls, spotted owls have dark eyes.

The *lucida* subspecies is a distinguishable taxon based on allozyme electrophoresis (Barrowclough and Gutiérrez 1990). Analysis of mitochondrial DNA shows further evidence that the three designated subspecies are valid. Despite the demonstrated phylogenetic

relatedness, there is evidence of reduced gene flow between the subspecies, indicating the three subspecies should be treated as separate conservation units (Barrowclough *et al.* 1999).

The Mexican spotted owl has the largest geographic range of the three subspecies. The range extends north from Aguascalientes, Mexico, through the mountains of Arizona, New Mexico, and western Texas, to the canyons of southern Utah, and southwestern Colorado, and the Front Range of central Colorado. Because this is a broad area of the southwestern United States and Mexico, much remains unknown about the species' distribution within this range. This is especially true in Mexico where much of the owl's range has not been surveyed. The owl occupies a fragmented distribution throughout its United States range corresponding to the availability of forested mountains and canyons, and in some cases, rocky canyon lands. Although there are no estimates of the owl's historic population size, its historic range and present distribution are thought to be similar.

According to the Recovery Plan, 91 percent of owls known to exist in the United States between 1990 and 1993 occurred on land administered by the Forest Service; therefore the primary administrator of lands supporting owls in the United States is the Forest Service. Most owls have been found within Region 3, which includes 11 National Forests in New Mexico and Arizona. Forest Service Regions 2 and 4, including 2 National Forests in Colorado and 3 in Utah, support fewer owls. The range of the owl is divided into 11 Recovery Units (RU), 5 in Mexico and 6 in the United States, as identified in the Recovery Plan (USDI 1995). The Recovery Plan also identifies recovery criteria and provides distribution, abundance, and density estimates by RU. The Upper Gila Mountain Recovery Unit has the greatest known concentration of owl sites (55.9 percent), followed by the Basin and Range-East (16.0 percent), Basin and Range-West, (13.6 percent), Colorado Plateau (8.2 percent), Southern Rocky Mountain-New Mexico (4.5 percent), and Southern Rocky Mountain-Colorado (1.8 percent) RUs.

A reliable estimate of the numbers of owls throughout its entire range is not currently available due to limited information. Fletcher (1990) calculated that 2,074 owls existed in Arizona and New Mexico in 1990 using information gathered by Region 3 of the Forest Service. Fetcher's calculations were subsequently modified by the Service (USDI 1991), who estimated a total of 2,160 owls throughout the United States. However, these numbers are not considered reliable estimates of current population size for a variety of statistical reasons. While the number of owls throughout the range is currently not available, the Recovery Plan reports an estimate of owl sites based on 1990-1993 data. An owl "site" is defined as a visual sighting of at least one adult owl or a minimum of two auditory detections in the same vicinity in the same year. Surveys from 1990 through 1993 indicate one or more owls have been observed at a minimum of 758 sites in the United States and 19 sites in Mexico. In addition, these surveys indicate that the species persists in most locations reported prior to 1989, with the exception of riparian habitats in the lowlands of Arizona and New Mexico, and all previously occupied areas in the southern States of Mexico.

In a summary of all territory and monitoring data for the 1995 field season, a total of 869 management territories (MT) were reported to the Service (U.S. Forest Service, in litt. January 22, 1996). Based on this number of owl sites, total numbers in the United States may range from 869 individuals, assuming each known site was occupied by a single owl, to 1,738 individuals, assuming each known site was occupied by a pair of owls. The 1996 data are the most current compiled information available to the Service; however, more recent surveys efforts have likely resulted in additional sites being located in all Recovery Units.

Mexican spotted owls breed sporadically and do not nest every year. This owl's reproductive chronology varies somewhat across its range. In Arizona, courtship apparently begins in March with pairs roosting together during the day and calling to each other at dusk (Ganey 1988). Eggs are laid in late March or typically early April. Incubation begins shortly after the first egg is laid, and is performed entirely by the female (Ganey 1988). The incubation period for the owl is assumed to be 30 days (Ganey 1988). During incubation and the first half of the brooding period, the female leaves the nest only to defecate, regurgitate pellets, or receive prey from the male, who does all or most of the foraging (Forsman *et al.* 1984, Ganey 1988). Eggs usually hatch in early May, with nestling owls fledging four to five weeks later, and then dispersing in mid-September to early October (Ganey 1988).

Little is known about the reproductive output for the spotted owl. It varies both spatially and temporally (White *et al.* 1995), but the subspecies demonstrates an average annual rate of 1.001 young per pair. Current demographic research in Arizona and New Mexico has documented populations that are declining at "greater than" 10 percent a year (Seamans *et al.* 1999). Possible reasons for the population declines are declines in habitat quality and regional trends in climate (Seamans *et al.* 1999). Based on short-term population and radio-tracking studies, and longer-term monitoring studies, the probability of an adult owl surviving from one year to the next is 0.8 to 0.9. Juvenile survival is considerably lower, at 0.06 to 0.29, although it is believed these estimates may be artificially low due to the high likelihood of permanent dispersal from the study area, and the lag of several years before marked juveniles reappear as territory holders and are detected as survivors through recapture efforts (White *et al.* 1995). Little research has been conducted on the causes of mortality, but predation by great horned owls, northern goshawks, red-tailed hawks, and golden eagles, as well as starvation, and accidents or collisions, may all be contributing factors.

Mexican spotted owls nest, roost, forage, and disperse in a diverse array of biotic communities. Nesting habitat is typically in areas with complex forest structure or rocky canyons, and contain mature or old-growth stands that are uneven-aged, multi-storied, and have high canopy closure (Ganey and Balda 1989a, USDI 1991). In the northern portion of the range (southern Utah and Colorado), most nests are in caves or on cliff ledges in steep-walled canyons. Elsewhere, the majority of nests appear to be in Douglas fir trees (Fletcher and Hollis 1994, Seamans and Gutierrez 1995). A wider variety of tree species is used for roosting; however, Douglas fir is the most commonly used species (Ganey 1988, Fletcher and

Hollis 1994, Young *et al.* 1998). Spotted owls generally use a wider variety of forest conditions (mixed conifer, pine-oak, ponderosa pine, piñon-juniper) for foraging than they use for nesting/roosting.

Seasonal movement patterns of Mexican spotted owls are variable. Some individuals are year-round residents within an area, some remain in the same general area but show shifts in habitat use patterns, and some migrate considerable distances 12-31 miles during the winter, generally migrating to more open habitat at lower elevations (Ganey and Balda 1989b, Willey 1993, Ganey *et al.* 1998). Home-range size of Mexican spotted owls appears to vary considerably among habitats and/or geographic areas (USDI 1995), ranging in size from 647 - 3,688 acres for individuals birds, and 945 - 3,846 acres for pairs (Ganey and Balda 1989b, Ganey *et al.* 1999). Little is known about habitat use of juveniles during natal dispersal. Ganey *et al.* (1998) found dispersing juveniles in a variety of habitats ranging from high-elevation forests to piñon-juniper woodlands and riparian areas surrounded by desert grasslands.

Mexican spotted owls consume a variety of prey throughout their range but commonly eat small and medium sized rodents such as woodrats (*Neotoma* spp.), peromyscid mice, and microtine voles. They may also consume bats, birds, reptiles, and arthropods (Ward and Block 1995). Habitat correlates of the owl's common prey emphasizes that each prey species uses a unique habitat. Deer mice (*Peromyscus maniculatus*) are ubiquitous in distribution in comparison to brush mice (*Peromyscus boylei*), which are restricted to drier, rockier substrates, with sparse tree cover. Mexican woodrats (*N. mexicana*) are typically found in areas with considerable shrub or understory tree cover and high log volumes or rocky outcrops. Mexican voles (*Microtus mexicanus)* are associated with high herbaceous cover, primarily grasses; whereas, long-tailed voles (*M. longicaudus*) are found in dense herbaceous cover, primarily forbs, with many shrubs, and limited tree cover. A diverse prey base is dependant on the availability and quality of diverse habitats.

The Mexican Spotted Owl Recovery Plan provides for three levels of habitat management: protected areas, restricted areas, and other forest and woodland types. "Protected habitat" includes all known owl sites, and all areas in mixed conifer or pine-oak forests with slopes "greater than" 40 percent where timber harvest has not occurred in the past 20 years, and all reserved lands. Protected Activity Centers (PACs) too are delineated around known Mexican spotted owl sites. A PAC includes a minimum of 600 acres designed to include the best nesting and roosting habitat in the area. The recommended size for a PAC includes, on average from available data, 75 percent of the foraging area of an owl. The management guidelines recommended in the recovery plan for protected areas are to take precedence for activities within those areas. "Restricted habitat" includes mixed conifer forest, pine-oak forest, and riparian areas; the recovery plan provides less specific management guidelines for these areas. The recovery plan provides no owl-specific guidelines for "other habitat."

Past, current, and future timber harvest practices in Region 3 of the Forest Service, in addition to catastrophic wildfire, were cited as primary factors leading to the listing of the owl as a federally-threatened species. Other factors that have or may lead to the decline of this species include a lack of adequate regulatory mechanisms. In addition, the Recovery Plan notes that forest management has created ecotones favored by great horned owls, increasing the likelihood of predation on the owl. Increases in scientific research, birding, educational field trips, and agency trips are also likely to increase. Finally, there is a potential for increasing malicious and accidental anthropogenic harm, and the potential for the barred owl to expand its range, resulting in competition and/or hybridization with the spotted owl.

The Sacramento Mountains thistle was listed as a threatened species under the Act on June 16, 1987 (52 *Federal Register* 22933). This plant is known only from the Sacramento Mountains of south-central New Mexico within a range of approximately 150 square miles. The remaining thistle populations are mostly on the Lincoln National Forest in mixed conifer/mountain meadow associations. There are occupied habitats on private and Mescalero Apache lands in the same general area. However, the Forest Service is the principal land management agency within the range of this species.

The Sacramento Mountains thistle is a stout biennial, 3.3 - 5.9 feet tall, with many ascending, brown-purple branches. The basal leaves are green, not hairy, 12 - 20 inches long, up to 8 inches wide, ragged edged, and divided nearly to the midrib, the divisions tipped with slender yellow spines. Flowering heads are bell-shaped, deep red-purple, and tipped with short yellowish spines.

When we determined that the Sacramento Mountains thistle was a threatened species, there were 20 known population areas (within six large canyon drainages) with an estimated 10,000 to 15,000 sexually reproducing individuals. Since that original estimate, 62 sites (mostly subdivisions of the original 20 populations) on a total of 77 acres of suitable habitat have been documented. Of the sites located on the Lincoln National Forest, there are an estimated 63,000 plants. Populations that have been closely monitored appear to be somewhat stable in terms of mortality and recruitment (Thomson and Huenneke 1990a). Three additional sites occur on Mescalero Apache land and one site is on private property. Major threats to the thistle include water development, direct and indirect impacts from grazing, road building, recreation, logging, and the invasion of exotic plants.

The Sacramento Mountains thistle is a riparian plant that requires saturated soils at springs, seeps, and streams. These occupied wetlands are unique in their calcium carbonate content. As the ground water reaches the surface, the change in pressure and temperature precipitates the calcium carbonate onto organic materials. These continuously wet travertine deposits are the most common habitats of the Sacramento Mountains thistle (Thomson and Huenneke 1990b). Wet areas downstream from these features are often sparsely inhabited by this

thistle. A few valley bottoms with wet calcareous soils, such as Scott Able Canyon and Silver Springs Canyon, are occupied by very large populations. Nevertheless, there are numerous examples of scattered plants that occur along streams and wet seeps below and between the larger populations.

ENVIRONMENTAL BASELINE

Under section 7(a)(2) of the Act, when considering the effects of the action on federally listed species, the Service is required to take into consideration the environmental baseline. Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone section 7 consultation, and the impacts of State and private actions that are contemporaneous with the consultation in progress. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

A total of 222 and only several projects have undergone formal consultation for the owl and Sacramento Mountains thistle, respectively. Of that aggregate, 81 projects resulted in a total anticipated incidental take of 183 owls. No jeopardy opinions have been issued for the thistle. The owl consultations have primarily dealt with actions proposed by the Forest Service, Region 3, but have also addressed the impacts of actions proposed by the Bureau of Indian Affairs, Department of Defense (including Air Force, Army, and Navy), Department of Energy, National Park Service, and Federal Highway Administration. These proposals have included timber sales, road construction, fire/ecosystem management projects (including prescribed natural and management ignited fires), livestock grazing, recreation activities, utility corridors, military overflights, and other construction activities. The thistle consultations addressed the impacts proposed by the Forest Service and included grazing allotment management plans (e.g., Sacramento allotment).

On the Lincoln National Forest, past and present Federal, State, private, and other human activities that may affect the owl or the thistle and their habitats include Hay and Scott Able Timber Sales, Bridge Salvage Sale, other vegetation manipulations (various small sales, fuelwood gathering activities, salvage sales, and prescribed burns), livestock grazing, recreational activities, development of recreation sites (campgrounds) and scenic vistas, road construction and maintenance activities, land exchanges, issuance of rights-of way, off-road motorcycle events, and powerline construction. Forest management activities (timber sales, etc.) on adjacent Tribal and private lands, urban development in and around Cloudcroft, and fire suppression also affect the environmental baseline. In addition, the risk of catastrophic habitat loss due to fire is extremely high. Past fires such as the Burgett and Bridge fires, have modified thousands of acres of habitat and impacted several owl territories.

The proposed road alignment crosses a relatively large region of land managed by the Forest Service, but it also traverses some private land and a very small area of State-owned land. In addition to this road, other roads and facilities, such as the Sacramento Peak Solar Observatory and the Scott Able 4-H camp already exist in the area. The proposed reconstruction activities will improve access to Timberon and may result in growth of commercial or private development. Therefore, the proposed action may significantly add to the environmental baseline by supporting further development of owl and/or thistle habitat.

STATUS OF THE SPECIES (within the Action Area)

Mexican Spotted Owl

The Lincoln NF is within the Basin and Range - East Recovery Unit (RU). This RU contains the second highest concentration of known owl sites (16.0 percent) in the United States. Because of the high concentration of owls, this RU has been referred to as an important owl distribution center in the Recovery Plan. Owls occur in isolated mountain ranges scattered across this RU, but the largest portion of the owl subpopulation occurs in the Sacramento Mountains. They are most common in mixed-conifer forest, but have been located in ponderosa pine forest and piñon/juniper woodland on a few occasions (Skaggs and Raitt 1988). Owl sites have been reported on National Forest lands in the Sandia, Manzano, Sacramento, and Guadalupe Mountains, as well as the Guadalupe National Park and on Mescalero Apache Tribal lands.

Owls occurring in the Sacramento Mountains have been exposed to various disturbances for more than a century. Disturbances include forest fires and human disturbances, including timber and fuelwood harvest, grazing, land development, and recreation. Coniferous forests, especially the mixed-conifer, were extensively logged during an era of railroad logging from 1890 to 1945 (Glover 1984). After the railroad logging era, trees grew rapidly and attained merchantable sizes in about 40-50 years on favorable sites. Consequently, much of the habitat currently used by owls in the Sacramento Mountains is regrowth forest that has attained a high density of moderately sized trees, poles, and saplings, together forming multiple layers. According to the Recovery Plan, the greatest threats in this RU, in order of potential effects, are catastrophic fire, timber harvest, fuelwood harvest, grazing, human developments, and forest insects and disease. Other activities that are considered potential threats to the owl include certain military operations, other habitat alterations (such as powerlines and roads), mining, and recreation. Recovery in this unit will require maintenance of existing and future populations by conserving habitats in areas not only inhabited by owls, but also in areas between occupied sites.

Currently, there are a total of 131owl PACs on the Lincoln National Forest. Of these,106 are on the Sacramento Ranger District, where the proposed project is located (G. Garcia, Lincoln National Forest, pers. comm., January 2000). Of these PACs, only 36 do not have an open

road occurring within them. Of the nine PACs within the Sacramento River Road corridor (i.e., the action area), only Scott Able and Bridge have open roads within the PACs. The other PACs in the action area have a variety of other uses including: grazing, powerlines, winter recreation (e.g., snowmobile use), and other recreational uses (e.g., hunting, camping, hiking, etc.).

Forest Service lands, in many of the areas surrounding the proposed alignment, were surveyed for owls as follows:

1) The area east of the current Sacramento River Road and Moore and McAfee canyons were surveyed in 1988 and 1989;

2) The area south of Sacramento Lake was surveyed in 1990 and 1991;

3) The Sunspot area was surveyed in 1994 and 1995;

4) The most suitable private land area was surveyed informally in 1996 and 1999;

5) The private land area and the southern half of the Sacramento River Road, starting at Sacramento Lake were surveyed in 1996;

6) Three timber salvage areas within 0.5 miles of the Sacramento River Road were surveyed in 1996;

7) Surveys regularly and intermittently conducted over the past 10 years including 1999 within the area surrounding the Sacramento River Road including Bridge, Moore, Apple Tree, Scott Able, Corral, Thousand Mile, Danley, Spiller, and Circle Cross PACs (Table 1) and the entire Sacramento River Road.

Table 1. Monitoring of owl PACs surrounding

PAC	1991	1992	1993	1994	1995	1996	1997	1998	1999
Bridge	pair [a]	no resp [b]	— [c]	pair	pair	male	pair/1	---	pair
Moore	pair	pair/2	pair	male	pair	pair/2	---	pair/nf [d]	pair
Apple Tree	male	no resp	---	no resp	---	no resp	---	no resp	male
Scott Able	pair	pair/1	---	pair	no resp	male	pair	no resp	pair

Table 1. Continued									
Corral	---	---	---	---	---	male	---	---	pair
Thousand Mile	---	---	---	---	---	no resp	---	---	no resp
Danley	pair/1	pair/1	male	male	---	1d/1a [e]	pair/2	pair	pair/2
Circle Cross	pair/2	no resp	---	pair	unocc [f]	male	single bird	no resp	pair/1
Spiller									pair [g]

[a]pair located/number of young fledged

[b]no response

[c]not monitored

[d]nest failed

[e]one dead and one alive fledgling

[f]unoccupied

[g] new owls found and PAC created in 1999

On the Lincoln NF, mixed conifer habitat is considered either protected or restricted habitat as defined in the owl Recovery Plan (USDI 1995). There are currently 18,000 acres of mixed conifer habitat within the S2 Ecosystem area, which includes the project area. This project proposal has 5.4 miles of road within mixed conifer habitat. Most of the ponderosa pine forest type along the eastern side of the Sacramento River Road, from the top of the Sacramento drainage to Spiller canyon is considered suitable owl habitat. This project has the potential to occur within 6 different PACs and within 0.5 miles of three others. This project will also impact slopes that are greater than 40 percent. PACs and slopes greater than 40 percent are considered protected habitat. Finally, there are two areas of suitable owl nesting/roosting habitat along the alignment. These areas were surveyed and determined to be unoccupied in 1996. The areas are: 1) at the north end of the road from Sunspot Highway to Sacramento Lake on the west side of the Sacramento River Road; and 2) from the Danley burn south to the Bridge PAC on the west side of the road. Presently, it is unknown if there are owls in these areas, because they have not been surveyed since 1996. We believe there is the potential for additional PACs to be established in these two areas. These and other unoccupied areas and the nine PACs are scheduled to be surveyed annually to either confirm absence of breeding owls or identify where breeding season restrictions would occur.

Sacramento Mountains thistle

The occurrence of the thistle was documented by reviewing records of surveys completed in the project area. The project area was surveyed informally in 1996 for this project. The Scott Able Creek and Wells wet area are the only known occupied sites within 0.25 miles of the project. There are historic records of two plants on the Sacramento River, below the intersection of Scott Able Creek. These plants have not been documented in recent years, including 1996. Two plants, out of several thousand in the Scott Able drainage, would be directly impacted during construction activities for a new throw down camping site and access road through Scott Able Creek. These plants were located in the creek crossing area. Nevertheless, the project is designed to increase the amount of suitable habitat (wet area) on the uphill side of the crossing.

For the purpose of analyzing the potential impacts of the proposed action an analysis area (approximately one mile around the project area) was examined. This analysis area encompasses 9 PACs on Forest Service land, habitat adjacent to the road on several small non-Federal (i.e., private) parcels, and some other areas of State-owned land, which was recently burned (i.e., Bridge fire).

EFFECTS OF THE ACTION

The Service's primary task in developing a biological opinion is to determine whether the proposed action is likely to jeopardize the continued existence of any listed species (51 *Federal Register* 1962). The jeopardy/non-jeopardy determination is based on an evaluation of: (1) a species' status in the project area and range wide (see above sections); (2) the effects of the proposed action on the survival and recovery of a listed species (including effects of interdependent and interrelated actions); (3) the aggregate effects of other Federal actions on a listed species (e.g., amount of take occurring as a result of Federal actions subject to previous consultations); and (4) the cumulative effects on a listed species (i.e., future non-Federal actions that are reasonably certain to occur in the action area).

The FHWA estimated that approximately 66 acres, all within mixed conifer, will be directly impacted from road and powerline construction activities. Of this, approximately 17 acres are currently within Corral, Thousandmile, and Apple Tree PACs and another 5 acres are on slopes greater than 40 percent, but outside of PACs. Another 93 acres will have hazard trees (all trees that are leaning toward the road within 100 feet of the centerline) removed during the project and any subsequent hazard trees will be removed at approximate 10-year intervals. About 34 of these 93 acres are within Corral, Thousandmile, Apple Tree, and Danley PACs. The new alignment will also isolate an additional 20 acres, of which, 13 are within Corral, Thousandmile, and Apple Tree PACs. All of the acres impacted are within the outer areas of the PACs.

The proposed project area occurs within or adjacent to 9 PACs (listed in Table 1) and on slopes greater than 40 percent. Owls are known to occupy the area and the nearest known PACs are less than 0.25 miles from the areas of construction. Direct impacts to suitable owl habitat would include removal of vegetation due to clearing, excavating, filling, and re-grading for the reconstruction and realignments. This would result in the loss of forest habitat, including mature trees, along the existing and future alignments. The effects to suitable owl habitat are considered adverse, especially since these actions are not consistent with the recovery plan (e.g., cutting trees in PACs; USDI 1995). However, the impacts to owl habitat are linear, small in extent, and located on the outer edges of PACs; therefore, we believe that these effects are not likely to adversely affect the integrity of these PACs or potential occupancy by owls.

Although we do not anticipate adverse effects on owls from habitat loss, there is potential for take of owls to occur from collisions with vehicles. In fact, at least five owls have been killed since 1993, by collisions with vehicles traveling on paved roads in the Lincoln National Forest (D. Salas, Lincoln National Forest, pers. comm., 2000). Therefore, it is expected that the probability of mortality from vehicles will increase as a result of this project. In addition, potential prey are more visible in open areas, so owls may be attracted to the opening in the forest created by the roadway, thereby increasing the potential for mortality due to collisions with vehicles.

The current recreational access to PACs is unlimited. The proposed road design will place access barriers in Corral, Thousandmile, Apple Tree, and Spiller canyons to restrict access from vehicles greater than 50 inches wide. Further, the current number parking spaces along the alignment will be reduced and rights-of-way may also be fenced. We expect these actions will limit the amount of recreational use; consequently, we believe that recreational use in PACs will not increase beyond current levels. The project itself, is not expected to add to the amount of human activity within nearby PACs after implementation. Hence, we conclude that recreational use of these nine PACs will not adversely affect the owl.

Sound and visual disturbance could also affect six PACs (Corral, Thousandmile, Apple Tree, Danley, Scott Able, and Bridge) and other potential nest/roost habitat along the Sacramento River Road, because these areas are located less than 0.25 miles from the project area. Noise levels during construction could become elevated from construction activities involving heavy equipment and blasting. Consequently, the zone of potential sound disturbance is primarily within 0.25 miles of the proposed alignment of the Sacramento River Road. Some sounds caused by construction activities could reach 0.5 miles or more, but gradually would be attenuated by vegetation, topography, and wind. According to the district biologist and the BA, known PACs in and around the project area have all been inventoried during 1999; however, at least two unoccupied areas of suitable nest/roost habitat outside the nine PACs (discussed under Status of Species, above) have the potential to be occupied by owls. We estimate that about half of the acres of suitable nesting/roosting habitat within the Corral

PAC and Thousandmile PAC, and the 2 unoccupied areas are within 0.25 miles of the road, whereas about one-third of the acres of suitable nesting/roosting habitat within Apple Tree and Danley PACs are within 0.25 miles. If the proposed reconstruction of Sacramento River Road occurs during the breeding season, there is the potential to adversely affect owls not only in within the six PACs (Corral, Thousandmile, Apple Tree, Danley, Scott Able, and Bridge) that are within 0.25 miles of the project, but also in the inadequately surveyed areas. To avoid and/or minimize adverse effects to owls, FHWA indicated in our January 13, 2000, meeting that some segments of the project may be subject to seasonal restrictions during the breeding season. Annual surveys will be conducted to determine nest sites of owls. If, for example, owls are determined to be nesting in a given year, no construction activity can conducted within 0.25 miles of the nest site during the breeding season (March 1-August 31). Therefore, these effects from sound and visual disturbance are not expected to be adverse.

Sacramento Mountains thistle

Impacts to the thistle from the proposed action will be due to the direct and indirect effects of road construction activities and subsequent increases in recreational use (e.g., camping, hiking), which increases the possibility of impacts through trampling of plants. Direct impacts to habitat would include removal of vegetation due to clearing, excavating, filling, and re-grading for the access road to a dispersed camping area that will cross Scott Able creek. This would result in the loss of approximately 36 square yards of occupied Sacramento Mountain thistle habitat, including a minimum of two plants. Furthermore, a staging area is proposed adjacent to historic, but unoccupied thistle habitat. A potential indirect impact from these actions is the introduction of noxious weeds.

The Service must consider indirect effects and the effects of interdependent and interrelated actions of this project to the owl and thistle. Indirect effects are those that are caused by, or result from, the proposed action, and are later in time, but are reasonably certain to occur. Interrelated actions are actions that are part of a larger action, and are dependent on the larger action for their justification. Interdependent actions are actions that have no independent utility apart from the action under consideration. Camp ground construction, hazard tree removal, access roads, fencing, etc., are all considered interrelated and interdependent with the road construction, maintenance, and operation.

The most significant indirect effects are expected to result from increased development and recreation in and around this segment of roadway. The direct impacts of the project on owl habitat, in and of themselves, are not significant; however, the upgrade and realignment of the Sacramento River road will make travel easier throughout the year (e.g., decrease muddy conditions) and may facilitate even more development of the area, which could result in additional habitat degradation. Additionally, travel speeds and the amount of traffic will increase through this road segment. Although much of the proposed road alignment is on Forest Service land, the available private land on the southern segment of the road and in and

around Timberon will have a greater likelihood of being developed as residential property; thus, adding to the environmental baseline. Increased recreational development and homesite development also brings with it the increased potential and risk of damage from wildfire, one of the primary threats to the owl throughout its range.

The owl recovery plan considers the reduction of large trees outside of Protected Areas a threat to the owls in the Basin and Range East RU (USDI 1995). Sound, visual, and habitat disturbance from recreation may impact owl habitat at a local scale. Concentrated human development may affect dispersing and wintering owls by reducing the spatial extent of habitat (USDI 1995). Owls (particularly juveniles) that have been displaced or forage and/or disperse through disturbed areas may be more vulnerable to predation; therefore, there may be a greater loss of owls over time.

Although 6 of the 9 PACs are less than 0.25 miles from the Sacramento River Road, the potential for effects from interdependent and interrelated actions from proposed project (sound disturbance, etc.) are expected to be limited and not likely to cause avoidance/abandonment or lead to future unoccupancy of these areas. These PACs and adjacent unoccupied areas, are not expected to be adversely affected for the following reasons: 1) the current alignment is graveled and heavily traveled; 2) dispersed recreation is not expected to increase because of the realignment and paving; and 3) the majority of owls in these PACs have demonstrated occupancy and reproduction under current conditions (Table 1).

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the foreseeable future 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. In past Biological Opinions, it has been stated that, "Because of the predominant occurrence of the owls on Federal lands, and because of the role of the respective Federal agencies in administering the habitat of the owl, actions to be implemented in the future by non-Federal entities on non-Federal lands are considered of minor impact." However, there has been a recent increase of harvest activities on non-Federal lands (e.g., timber harvest on neighboring Mescalero Apache Reservation, private land timber sales on inholdings in and around the Lincoln National Forest). In addition, future actions within or adjacent to the Forest Service lands that are reasonably expected to occur include urban development, road construction, land clearing, logging, fuelwood gathering, and other associated actions.

The project area is located south of Sunspot, New Mexico. It is surrounded by mostly National Forest land and includes the Sunspot Observatory, the Scott Able 4-H camp, Forest Service trails, existing infrastructure (e.g., powerlines), dispersed camping areas, and

Timberon and surrounding areas, where activities occur either seasonally or year-round. Other past, present and foreseeable future Forest Service projects that may contribute to cumulative effects are: the proposed Sacramento, Scott Able, and North Bluewater Allotment grazing permits (2000), the Sacramento Allotment Management Plan (1995), the Bridge fire fuelwood salvage (1995), and the Fresnal Canyon water pipeline (1993), and programmatic biological opinions for the Forest Service's Land and Resource Management Plans (1997) and existing forest plans and the spotted owl (1996). These activities reduce the quality and quantity of thistle habitat and owl nesting, roosting and foraging habitat, and cause disturbance to breeding owls and contribute as cumulative effects to the proposed action.

CONCLUSION

After reviewing the current status of the owl and the thistle, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the owl or the thistle. The implementation of the proposed project, as described in this biological opinion, has the potential to adversely affect owl and thistle habitat, and the extent and magnitude of the impacts are expected to result in "take" of owls known to occupy the area. Noise-related impacts (e.g., blasting) from construction activities will be avoided or minimized by a seasonal restriction imposed on areas that have owl nests within 0.25 miles of the road. Direct impacts of habitat loss are expected to occur in occupied owl habitat within the project area, removal of mixed conifer habitat within Corral, Thousandmile, Apple Tree, and Danley PACs. Nevertheless, these impacts are not considered adverse for the owl because of the small amount of habitat that will be impacted. We believe that implementation of the proposed action will not render any currently known PACs or suitable, but unoccupied habitat unsuitable for nesting and roosting of owls. Alternatively, we are extremely concerned about the adverse affects of habitat isolation, because it may likely lead to mortalities of owls hit by cars.

Based on the current level of human activity, we believe that the habitat in the affected area will still provide for nesting and roosting, and areas outside of the known PACs will continue to provide foraging and dispersal habitat. Recreational use of the surrounding forest is not expected to increase beyond current levels, and access will be limited by the installation of barriers to prevent vehicles greater than 50 inches from accessing Corral, Thousand Mile, Apple Tree, and Spiller Canyons. Subsequently, the potential for disturbance from recreational activities and the potential for human-induced wildfires will likely not increase from implementing the proposed action. The Service believes that although there will be impacts to owl habitat at a local level, these impacts and the anticipated level of incidental take from vehicle collisions is not be expected to impede the owl's ability to nest, roost, forage, or disperse within the Basin and Range-East RU. Sufficient owl habitat will remain

for owls to nest, roost, forage, and disperse. No critical habitat is currently designated for this species; therefore, none will be affected.

INCIDENTAL TAKE

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct. Harass is further defined by the Service as intentional or negligent actions that creates 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. Harm is further defined by the Service 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. 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 a prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered or threatened plants. All prohibitions of section 9(a)(2) of the Act implemented by 50 CFR 17.71 for threatened plants apply. Sections 7(b)(4) and 7(o)(2) of the Act generally do not apply to listed plants. However, protection of listed plants is afforded to the extent that the Act requires a Federal permit for the removal or reduction to possession of endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law.

The measures described below are non-discretionary and must be implemented by the FHWA and Forest Service so that they become binding conditions of any grant or permit issued, as appropriate, in order for the exemption in section 7(o)(2) to apply. The FHWA has a continuing duty to regulate the activity that is covered by this incidental take statement. If the FHWA: 1) fails to require that contractors adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, grant, or contract 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. In order to monitor the impact of incidental take, the FHWA and the Forest Service must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR § 402.14(1)(3)].

The current section 7 consultation policy states that incidental take can only be supported if an activity compromises the integrity of a PAC. Action outside PACs will not be considered incidental take, except in cases when areas that may support owls have not been adequately surveyed. The Service anticipates that the proposed action, as described in this biological opinion, will lead to incidental take of owls. This determination is based on the knowledge that nesting owls will be affected; survey data indicate that owls currently occupy the proposed project area, the project will isolate habitat within PACs, and the potential for vehicle collisions from owls foraging in these and other areas will likely occur.

Using available information as presented within this document, the Service has identified take that is likely for owls foraging through areas bisected by the Sacramento River Road. The most likely areas include those portions of Corral, Thousandmile, and Apple Tree PACs that contain isolated habitat. Nevertheless, we believe all areas of suitable habitat adjacent to the road may also be used by foraging owls. Therefore, owls will be exposed to an increased probability of mortality from vehicle collisions, from faster driving conditions and increased traffic levels. Based on the best available information concerning the owl, habitat needs of this species, the project description, and information furnished by the FHWA and the Forest Service, take is considered likely for the owl as a result of the following:

1) Mortalities by collision caused by the improvement and long-term use of Sacramento River Road within and adjacent to areas isolated in Corral, Thousandmile, and Apple Tree PACs.

2) Mortalities by collision caused by the improvement and long-term use of Sacramento River Road within and adjacent to areas isolated in inadequately surveyed owl nest/roost habitat (e.g., the north end of the road from Sunspot Highway to Sacramento Lake on the west side of the Sacramento River Road; and from the Danley burn south o the Bridge PAC on the west side of the road).

Amount or Extent of Take

Mexican spotted owl - The Service anticipates that the proposed project may result in the incidental take of two owls from collisions with vehicles. Incidental take is expected to be in the form of killing or harm due to disruption of normal reproduction and behavior and increased risk of collision with vehicles along the Sacramento River Road. We assume that up to two owls could be killed as a result of isolating habitat in Corral, Thousandmile, or Apple Tree PACs or other foraging areas adjacent to the road, as a result of increased traffic levels and speeds. We believe that owls could be "taken" for as long as Sacramento River Road is used and maintained.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the owl.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take.

1) Minimize disturbance to the owl during and after construction of the Sacramento River Road.

2) Conduct all proposed activities in a manner that will minimize modification and loss of owl habitat.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the FHWA and Forest Service and their employees, contractors, or subcontractors must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are nondiscretionary.

The following Terms and Conditions are established to implement Reasonable and Prudent Measure 1.

1.1 Occupancy surveys for the owl shall be conducted annually in unoccupied suitable habitat (e.g., PACs), including gravel pits, staging and blasting areas. As specified in the Recovery Plan, new PACs shall be drawn for any additional owl locations.

1.2 Formal reproductive monitoring shall be conducted annually for the duration of construction of the project within Corral, Thousandmile, Apple Tree, Danley, Scott Able, Bridge, and 2 unoccupied suitable habitat areas (i.e., 1. at the north end of the road from Sunspot Highway to Sacramento Lake on the west side of the Sacramento River Road; and 2. from the Danley burn south to the Bridge PAC on the west side of the road). These surveys will take place early in the breeding season with the objective of determining nesting status within each PAC to determine if a breeding season restriction if necessary. Surveys of PACs will be conducted by a qualified biologist with the oversight of the Forest Service. If owls are determined to be nesting in a given year, no construction activity may occur within 0.25 miles of the nest site during the breeding season (March 1-August 31). If the area is determined to be unoccupied, construction may proceed without this restriction.

1.3 Construct and install barriers to prevent vehicles greater than 50 inches from accessing Corral, Thousand Mile, Apple Tree, and Spiller Canyons. Design the barriers so that access is restricted by:

a. Placing boulders, bollards, or gating and other means to eliminate access from vehicles greater than 50 inches wide.

b. These barriers must be installed immediately upon completion of these portions of the project and inspected at least quarterly for the duration of construction of the project. These barriers shall be repaired immediately if damaged or broken, or redesigned, if they are found to be ineffective (i.e., vehicles greater than 50 inches wide are accessing the canyons). They will also be maintained in perpetuity by either the FHWA or Forest Service, or until they are deemed by the Service to no longer be needed.

1.4 Turn-around and staging area will not be located in known PACs or potential nest/roost habitat.

The following Terms and Conditions are established to implement Reasonable and Prudent Measure 2.

2.1 The FHWA shall ensure that their employees, contractors, or subcontractors shall designate a field contact representative (FCR) who shall be responsible for overseeing compliance with the protective measures outlined in these Terms and Conditions. The FCR shall have the authority to halt all associated project activities that may be in violation of the Terms and Conditions of the Biological Opinion.

2.2 The FHWA and Forest Service and their employees, contractors, or subcontractors shall strictly limit their activities, vehicles, equipment, and construction materials to the proposed project area(s), staging areas, and routes of travel. The construction area(s) shall be the minimal area necessary to complete the project. To this end, all construction areas, including parking and laydown areas, shall be clearly delineated (e.g., stakes, flags, paint, etc). All personnel onsite during construction activities shall be instructed by the FCR that their activities are restricted to the construction areas. These actions could also be facilitated by having a biologist on site during construction and flagging/painting trees that are scheduled for removal.

2.3 All clearing, grubbing, and timber cutting activities shall occur between September 1-February 28 to avoid impacts to nesting birds.

2.4 All unauthorized impacts (i.e., impacts outside of the project description) shall be immediately reported to the Service by the FHWA, Forest Service, or their employees, contractors, subcontractors, or the FCR.

2.5 The FHWA shall ensure that all equipment maintenance, staging, and dispensing of fuel, oil, or coolant, or any other such activities occur outside of riparian areas in designated upland areas. These designated upland areas shall be located in such a manner as to prevent any runoff from entering Waters of the United States.

2.6 The Service hereby incorporates by reference the "measures to minimize impacts" identified in the DEIS (pages 71-74; Attachment A) into this incidental take statement as "Terms and Conditions".

2.7 The FHWA shall provide a report documenting how the project is in compliance with the Reasonable and Prudent Measures and the Terms and Conditions of this Biological Opinion. This report shall be submitted to the Service annually at the beginning of the calendar year (i.e., January) for the duration of construction of the project. These reports shall also document the effectiveness of vehicle exclusion barriers and whether FHWA or the Forest Service is responsible for their maintenance (see Term and Condition 1.3 above).

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. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for these species.

1. The Forest Service should work with private landowners and communities adjacent to and within the Lincoln National Forest to emphasize the benefits of ecological diversity and the contribution that the Mexican spotted owl provides to that diversity and forest health.

2. The Forest Service should provide information (e.g., the Service's HCP handbook and *Federal Register* notices) regarding the Habitat Conservation Plans (HCP) and Safe Harbor Agreements to private landowners, communities, or businesses (e.g., White Sands Forest Products) for potential direct and indirect impacts to the owl and possibly other sensitive species. This program would benefit these non-Federal entities by allowing incidental take of federally-listed species, thus reducing their risk of violating any enforcement provisions of the Act.

3. FHWA and Forest Service should require its employees, contractors, or subcontractors to restore disturbed areas on the project site by using only native vegetation and actively control exotics plants within their rights-of-way to ensure that exotics are not being introduced into the adjacent lands.

4. FHWA and Forest Service should emphasize and implement restoration of lowland riparian habitats for the owl (see Consultation number 000032RO; July 12, 1996).

5. Because the health of the thistle is linked to the health of riparian areas on the Lincoln National Forest, the needs of the species should be included in riparian management plans developed and/or implemented by the FHWA or Forest Service (including restoration of areas identified in "measures to minimize impacts" in the DEIS).

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

DISPOSITION OF DEAD OR INJURED LISTED ANIMALS

Upon finding a dead, injured, or sick individual of an endangered or threatened species, initial notification must be made to the nearest Service Law Enforcement Office. In New Mexico, contact (505/346-7828) or the New Mexico Ecological Services State Office (505/346-2525). Written notification must be made within five calender days and include the date, time, and location of the animal, a photograph, and any other pertinent information. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible condition. If feasible, the remains of intact specimens of listed animals shall be submitted to educational or research institutions holding appropriate State and Federal permits. If such institutions are not available, the information noted above shall be obtained and the carcass left in place.

Arrangements regarding proper disposition of potential museum specimens shall be made with the institution before implementation of the action. A qualified biologist should transport injured animals to a qualified veterinarian. Should any treated listed animal survive, the Service should be contacted regarding the final disposition of the animal.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the reconstruction of New Mexico Forest Highway 45, Sacramento River Road submitted by the FHWA on February 2, 2000. As required by 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 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. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation of consultation.

In future communications regarding this project, please refer to consultation #2-22-00-F-044. If you have any questions or would like to discuss any part of this biological opinion, please contact Eric Hein of my staff at (505) 346-2525 extension 135.

Sincerely,

Joy E. Nicholopoulos

Joy E. Nicholopoulos
Field Supervisor

cc:
District Ranger, U.S. Forest Service, Lincoln National Forest, Sacramento Ranger District, Cloudcroft, New Mexico
Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, Phoenix, Arizona

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ATTACHMENT A

FHWA-FPNM-EIS-99-1-D

New Mexico Forest Highway 45
Sacramento River Road
Sunspot to Timberon

Otero County, New Mexico

DRAFT ENVIRONMENTAL IMPACT STATEMENT

Submitted Pursuant to 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303 by the
Federal Highway Administration
Central Federal Lands Highway Division

July 28, 1999

Cooperating Agency:
U.S.D.A. Forest Service
U.S. Army Corps of Engineers

Additional information may be obtained from:
Mr. Robert Nestel
Environmental Biologist
Federal Highway Administration
555 Zang Street, Room 259
Lakewood, Colorado 80228
Telephone: 303-716-2142

Larry C. Smith, P.E. 9/20/99
Division Engineer Date
Central Federal Lands Highway Division

The incremental impact of the proposed Sacramento River Road improvement will result in only minor additional cumulative effects when added to other past, present, and reasonably foreseeable future actions. As noted in the "Purpose and Need" section, one of the primary purposes of the project is to reduce adverse environmental effects, especially those resulting from the proximity of the existing road to the stream. The project is designed to improve these resources by reducing sediment discharge into the stream, reducing dust, and moving the road away from the canyon bottom. Many of the effects from the proposed project can be mitigated through the mitigation measures discussed under the individual impacts within this document and under the "Measures to Minimize Harm" section.

Unavoidable Adverse Impacts of the Proposal

Social and Economic: There would be some inconvenience to travelers due to construction delays.

Water Quality: Before cuts and fills revegetate, increased erosion and degradation of water quality can be expected.

Wildlife: Clearing required for the roadway would remove wildlife habitat. Increased traffic and speeds would increase the potential for animal-related traffic accidents. Animals would be subjected to increased disturbance factors caused by increased traffic and recreation use.

Visual Quality: Steep, high cut slopes where revegetation is not normally successful will cause adverse visual impacts for the highway user.

Recreation: The addition of a wider, paved road with a right-of-way fence would change the character of the area, especially for recreationists who value the remote, quiet, and natural qualities of the area. There would be fewer locations for parking for activities such as hunting and camping.

Cultural Resources: Alternative B would affect eight sites, while Alternatives C and D would affect six sites. To mitigate adverse impacts, data recovery would be done on all affected sites that are eligible for the NRHP.

Measures to Minimize Impacts

The following measures would be used in any action alternative to minimize the adverse effects to the environment. These measures include construction contract provisions, features built into the design of alternatives, and management practices with established effectiveness to mitigate, prevent or reduce adverse environmental effects. Following is a summary of the measures:

1. Vegetative ground cover would be established during or immediately after grading and filling operations.

2. The FHWA will obtain a NPDES permit. The Notice of Intent and the Storm Water Pollution Prevention Plan will be sent to the EPA, and copies will be sent to the FS, COE, and NMED, Non-point Pollution Division.

3. The contractor would be required to incorporate all permanent erosion control features into the project at the earliest practicable time, as outlined in the accepted schedule, in order to minimize the need for temporary erosion control measures.

4. The contractor would be required to designate an individual, other than

the project superintendent, whose primary responsibility would be to serve as the water quality supervisor for the duration of the project.

5. The project engineer would limit the area of excavation, borrow, grading, and embankment operations to be commensurate with the contractor's capability and progress in accomplishing finished grading, mulching, seeding, and other erosion control measures.

6. Reconstruction of the Sacramento River Road will require successive construction contracts. The success of revegetation efforts would be evaluated by the cooperating agencies during each construction contract to determine whether additional revegetation work is needed. Additional work would be included in successive construction contracts and revegetation procedures modified for these contracts, as needed.

7. The construction project engineer would monitor turbidity during the construction of this project to assure compliance with state water quality standards. Turbidity would be measured using an EPA approved turbidimeter. Measurements would be taken upstream from the project area as a control and 150 m (500 ft) downstream in the area of highest turbidity whenever noticeable turbidity is being generated from the project. If these measurements show an increase of ten Nephlometric Turbidity Units or more, the engineer shall suspend construction operations in the vicinity of the problem area and modify the erosion control measures to eliminate the cause of increased turbidity. Records would be kept of measurements, and the data would be available for review by the FS and the NMED.

8. The reconstructed road would have many more ditch relief culverts than are currently present. Bottoms of ditches would be riprapped in steep areas.

9. Prior to construction activity, the contractor would be required to develop an Oil and Hazardous Substance Spill Contingency Plan and Spill Prevention Control and Countermeasure Plan for acceptance by the project engineer.

10. Riparian vegetation would be restored if it is disturbed. Revegetation with native species would be accomplished in coordination with the FS.

11. FHWA would work with the COE and the NMED to satisfy Section 404 and Section 401 (water quality) requirements.

12. Where available and where terrain allows, topsoil would be removed and stockpiled. After grading, it would be replaced, mulched, and seeded. Selection of locations for placing topsoil would be coordinated with the FS prior to construction. Special revegetation techniques would be used on steeper cut slopes if needed to aid revegetation efforts. Consideration would be given to structural design (guardrails, culverts, retaining walls, etc.) to enhance visual appearance. Slope rounding and warping would be required, except in solid rock (see Figure 4).

13. The contractor would be required to comply with all federal, state, and local laws and regulations controlling pollution of the environment. The contractor would be required to take necessary precautions to prevent pollution of

streams, lakes, ponds, and reservoirs with silt, fuels, oils, bitumens, or other harmful materials, and to minimize pollution of the atmosphere from particulate and gaseous matter.

14. Waste material (including reject material) disposal areas, construction roads, and staging areas would be located and constructed in a manner that would keep sediment from entering streams and other bodies of water.

15. Unless otherwise permitted by the contract, all designated material sources, waste, or disposal areas on FS land would be located so that they would not be visible from any public highway. They would be developed so that water would not collect and stand therein.

16. When the contract requires restoration of a materials source, overburden would be stripped and stockpiled for later use in obliteration and restoration of the site.

17. The contractor would be required to conduct all work in such a manner as to assure the safety and convenience of the general public and the residents along the highway and to assure the protection of persons and property. Care would be taken to protect visitors and campers in the LNF.

18. In order to control dust during construction, water would be applied as directed by the project engineer. After the roadway is graded, a dust palliative (probably magnesium chloride) may be applied to prevent dust if paving is delayed until a later project.

19. The contractor would be required to keep work areas in an orderly condition, to dispose of all refuse properly, and to obtain appropriate permits. Permits may be needed for the construction and maintenance of construction camps, stores, warehouses, latrines, and other structures in accordance with the applicable requirements of the landowners or agencies of jurisdiction. All organic trash (foodstuffs) should be deposited in bear-proof containers. No edible foodstuffs should be stored in locations accessible by bears (e.g., coolers under travel trailers). The NMDG&F shall be contacted immediately if bears are observed to be causing problems in the contractor's work areas.

20. Inconvenience to travelers resulting from road closures would be minimized. A schedule will be developed after consultation with the FS, local landowners, and Timberon residents. School bus and commute use will need to be accommodated. A possible schedule might have the road closed for four hours in the morning and another four hours in the afternoon following an open period. Emergency vehicles will be accommodated at all times without delay.

21. Servicing sites, refueling sites, and staging areas would be located at least 45 m (150 ft) from designated sensitive areas, such as wetlands and stream courses, where practicable.

22. Any disturbed areas, including sections of abandoned roadbed, would be revegetated as soon as possible.

23. All seeds used for revegetation would be certified weed-free.

24. All material used for mulching and/or erosion control would be certified weed-free.

25. Herbicides are not normally applied during construction of Forest Highway projects. If used, State and Federal regulations regarding herbicide use would be followed. Herbicide applications on LNF lands would be done in accordance with the "Environmental Assessment for Noxious Weed Management, Lincoln National Forest", May 1996.

26. Areas within the right-of-way and sections of the abandoned roadbed will be monitored by the FS on an annual basis for five years following the completion of the project, and herbicides will be applied as needed.

27. Permanent sanitary facilities would be installed by the FS near the intersection with the Scott Able road under Alternative C.

28. Access will be provided to a flat bench located above the Sacramento River and Scott Able road for dispersed camping under Alternatives B and D.