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AESO/SE  
2-21-99-F-266

February 29, 2000

Mr. John McGee, Forest Supervisor  
Coronado National Forest  
300 West Congress  
Federal Building, 6<sup>th</sup> Floor  
Tucson, Arizona 85701

Dear Mr. McGee:

This document responds to your request for consultation for the proposed Madera Canyon Developed Recreation project, consisting of the following two projects: the Madera Canyon Recreation and the Four Springs Trail, located in Santa Cruz County, Arizona, in accordance with section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended.

These projects are combined in your biological assessment (BA) dated June 29, 1999, due to overlapping impacts to threatened and endangered species in the area. The BA listed five species that might occur in the action area: the American peregrine falcon (*Falco peregrinus anatum*), the Chiricahua leopard frog (*Rana chiricahuensis*), the lesser long-nosed bat (*Leptonycteris curasoae yerbabuena*), the Mexican spotted owl (MSO) (*Strix occidentalis lucida*), and the Pima pineapple cactus (PPC) (*Coryphantha scheeri* var. *robustispina*).

This biological opinion was prepared using information provided in the June 29, 1999, biological assessment, maps and related attachments, letters, field investigations, telephone and electronic communications, other sources, and our files. Appendices referred to in this biological opinion are in the BA unless otherwise noted. References cited in this biological opinion do not comprise a complete bibliography of all literature available on the species of concern, recreation management and its effects, or on other subjects considered in this opinion. A complete administrative record is on file at this office.

### **Consultation history**

Your June 29, 1999, request for formal consultation was received by us on June 30, 1999. Discussions between wildlife biologists from the U.S. Fish and Wildlife Service and the Forest Service led the Service to temporarily suspend work on this project pending a possible revised

preferred alternative. A letter from the Nogales Ranger District dated October 19, 1999, advised that the Service could proceed with the project as originally described. Further discussions between the district and the Service updated information and project details and included additional maps and a memo clarifying some definitions used in the BA (see Appendix A).

The Forest Service has made the following effects determinations:

<b>Species</b>	<b>Project Name</b>	<b>Effect Determination</b>
American peregrine falcon (Delisted)	Madera Canyon Recreation	No effect
	Kent Springs Prescribed Burn	No effect
	Four Springs Trail	No effect
Chiricahua leopard frog (Not Listed)	Madera Canyon Recreation	No effect
	Kent Springs Prescribed Burn	No effect
	Four Springs Trail	No effect
Lesser long-nosed bat	Madera Canyon Recreation	May affect, not likely to adversely affect
	Kent Springs Prescribed Burn	May affect, not likely to adversely affect
	Four Springs Trail	May affect, not likely to adversely affect
Mexican spotted owl	Madera Canyon Recreation	May affect, likely to adversely affect
	Kent Springs Prescribed Burn	May affect, not likely to adversely affect
	Four Springs Trail	May affect, likely to adversely affect
Pima pineapple cactus	Madera Canyon Recreation	No effect
	Kent Springs Prescribed Burn	No effect
	Four Springs Trail	No effect

The American peregrine falcon (*Falco peregrinus anatum*) has been removed from the Federal list of Endangered and Threatened Wildlife (64 FR, August 25, 1999). Federal agencies are no longer required to consult with the Service under section 7 of the Endangered Species Act (Act) in the event activities they authorize, fund or carry out, affect peregrine falcons. Removal of the protection of the Act will not affect the protection afforded all peregrine falcons under the Migratory Bird Treaty Act. The Act requires monitoring of the species for at least five years after delisting. This monitoring will consist, at a minimum, of annual occupancy surveys for assessing productivity, determining contaminant concentrations, and monitoring levels of take of

peregrine falcons for falconry purposes (63 FR: 45446). The Service is currently developing a monitoring plan which will be available in the near future. We appreciate the Forest Service's continuing commitment to conservation of this species as seen in the biological assessment.

The Chiricahua leopard frog is not federally listed or proposed at this time. The Service appreciates the Forest Service's consideration of nonlisted species.

The Service concurs with the Forest Service's determinations that the proposed actions may affect but are not likely to adversely affect the lesser long-nosed bat and that the Kent Springs Prescribed burn may affect but is not likely to adversely affect the MSO. Rationale for all concurrences is detailed in the Concurrences section at the back of this document.

The Service does not comment on an agency's "no effect" determination unless we believe the proposed action would adversely affect a listed species or its critical habitat, in which case the Service would request the agency enter into formal consultation on species adversely affected [50 CFR 402.14(a)]. Information available to us does not warrant such a request at this time for the Pima pineapple cactus; however, we recommend that the Forest Service maintain a complete administrative record documenting the decision process and supporting information for their "no effect" determination.

## **BIOLOGICAL OPINION**

### **Description of proposed action**

Actions evaluated in this opinion include two separate projects: a planned series of road and designated camping/day use improvements and construction of four trail sections to convert existing deadend trails into looped trails. The Forest Service advised the Service that some planned improvements may not occur because all projects are based on assumptions of adequate funding, planning, and personnel to carry them out, and those factors are currently unknown, as budgets are unstable and revised annually. The Forest Service will communicate to the Service as these projects, or portions of them, are or are not funded and planned for implementation, prior to actual work beginning. The Forest Service is also considering the implementation of a fee program for Madera Canyon in the near future, but no building or construction improvements will be required for that program.

The proposed actions will occur in Madera Canyon, a heavily-used recreational area located in the western foothills of the Santa Rita Mountains, approximately 40 miles south of Tucson and 12 miles east of Green Valley, in southern Arizona. The Forest Service administers the canyon as the Madera Canyon Recreational Complex (MCRC), and it includes the Mt. Wrightson Wilderness Area. A popular day and overnight use area, the complex supports four day use picnic areas and one overnight campground, and serves as the trailhead for five trails entering the wilderness area.

Two other trails, an interpretive trail accessible to disabled persons, a self-guided nature trail, the Santa Rita Lodge (a private enterprise) and numerous private summerhome residences exist in the canyon alongside the roadway. Annual visitation numbers in the MCRC average approximately 260,000 people, with major activities including picnicking (45%), day hiking (42%), and birdwatching (23%). Peak use occurs on holiday weekends, with a maximum capacity of cars allowed to enter the canyon at any time (165) usually being reached by 10:00 a.m. on Saturday mornings. The Forest Service is responsible for maintaining and enforcing federal regulations in the canyon pertaining to Forest Service-administered lands. Maps were included with the biological assessment and greatly assist in understanding the precise location of the proposed project components.

### **Project Details**

Specific project place names appear in **bold** print the first time they are described in this document.

#### **Madera Canyon Recreation**

Madera Canyon Road (paved) enters the MCRC from the north. Driving uphill from the Forest Boundary, the first existing facility is the **Entrance Station**. The Forest Service proposes to complete a split-roadway traffic design to create a permanent and safer traffic pattern. This will involve approximately 100 feet of new construction within the existing disturbed area to eliminate two sharp turns, with signing and pavement lane painting afterwards.

The **Proctor parking lot**, adjacent to the Entrance Station, is on the west side of Madera Canyon Road. This site supports an interpretive ramada, a trailhead, and a paved parking area. No improvements are planned here.

The next site (south of the Proctor parking lot) is the **Whitehouse Picnic Area**. It is between Madera Creek and the Madera Canyon road on the west side of the road. This existing picnic area has one toilet and several picnic benches underneath one of the existing ramadas and the public cannot reserve it for group use. The Forest Service proposes to build the **Whitehouse Reserved Group Site (ramada, toilet, parking)** nearby and located to the northwest, between the stream and the road. This second ramada would accommodate reserved day use by groups. It would include one additional toilet and a 20-vehicle parking area with a separate entrance and locked gate. This reserved site would accommodate a maximum of 50 people and remain closed unless reserved, or possibly be opened only to provide additional space for the holiday weekends when visitor use is exceptionally heavy in the canyon.

Continuing uphill (and south) into the canyon, the Forest Service proposes to reconfigure the existing parking area at the **Madera Picnic Area** to provide safer and more efficient parking for visitors. Existing tables will be relocated farther away from the stream to discourage access, and the streamside will be replanted with native species. The existing lower parking area will be

removed and rehabilitated. These actions will neither increase nor decrease the number of available spaces or facilities; they are meant to rearrange and improve existing conditions and improve riparian conditions at this site.

The next site is the **Bog Springs Campground Road (Forest Road 70A)**. This existing road turns east off Madera Canyon Road and makes a loop through the Bog Springs Campground, returning to the Madera Canyon Road. No road relocation would occur, and the road would be repaved within the existing road prism. Sight distance would be improved at the intersection of this road and the Madera Canyon road by signing and some minor brush removal.

The Forest Service proposes to reconstruct the **Bog Springs Campground**. There are 13 existing camp sites, and the Forest Service would construct 10 additional sites along Bog Springs Campground Road (FR 70A) capable of accommodating recreational vehicles up to 30 feet long. These 10 new sites would have water and electrical hookups, eliminating the need for generators. Reconstruction in the existing campground would include toilet facilities, parking sites, tables, grills, erosion control features, water systems, bear-proof garbage cans and food storage boxes and signing. Reconstruction at this site includes elimination of all day use trailhead parking for the Dutch John, Bog Springs, and Kent Spring Trails. The **Amphitheater Trailhead** (further south and uphill on the road) will serve for trailhead parking. Appropriate signing will be included in this reconstruction.

The next existing site is the **Madera Trailhead Picnic Area**. It will be retained and no improvements are planned.

Continuing south and uphill into the canyon is the **Amphitheater Trailhead and Interpretive Area**, where the Forest Service proposes to grade the parking area (gravel/dirt) to improve drainage and reduce erosion and sedimentation into the creek. Signing and the construction of a new toilet facility will accommodate redirected use of this site as the only day use trailhead and parking area for several wilderness trails. The BA described other improvements that would have included a wildlife viewing deck, amphitheater, and paved parking lot. These features will not be built and are not included in this consultation.

Two single-lane existing **bridges** occur between the Amphitheater Trailhead and Interpretive Area and the next existing site, the **Roundup Picnic Area and Trailhead**. These bridges are single-lane and would be reconstructed to accommodate two-way traffic. The short stretch of roadway between them would be widened to accommodate two-way traffic, greatly improving traffic safety.

At the southernmost end of Madera Canyon Road, the **Roundup Picnic Area and Trailhead** would be reconstructed. This involves moving the existing 18 picnic benches farther away from the riparian area, as well as building new pathways accessible by disabled persons, to aid in the elimination and prevention of unauthorized, "pioneered" trails in the area. Cut slopes, old roadbeds, trails and picnic sites near the riparian area would be revegetated. The existing toilet

would be replaced, and new signing would be installed. The existing parking area would be rearranged and expanded to accommodate 120 parking spaces, an increase from the existing 68 spaces. These additional spaces will accommodate vehicles that used to park at the Bog Springs Campground area, because those day use parking areas are eliminated as described above.

For the Madera Canyon Recreation project, approximately 4.0 acres of vegetation would be removed from the existing canyon watershed area of 4,800 acres. Currently, approximately 12 acres are occupied by existing facilities in the canyon. One acre of riparian habitat will be revegetated and rehabilitated. All new facilities are very close to, if not within, the existing occupied and disturbed sites in the canyon (see the two maps accompanying the BA). All work will be conducted to accommodate proper drainage without creating erosion problems, and can include measures such as slope-appropriate grading, anchoring ditches, and other practices that minimize disturbance to the site yet allow for appropriate water drainage without creating erosional difficulties.

Total vehicle parking in the canyon would increase from the existing 165 spaces to 247 spaces (82 additional spaces). Data from road counter studies show that more vehicles enter the canyon than parking capacity exists at any time; this indicates people tend to enter the canyon for day use activities for part of a day, then leave.

Due to the exponential growth of Tucson and surrounding communities, Madera Canyon alone is expected to experience a seven percent recreational increase whether or not any work is done on recreational facilities. The entire MCRC is expected to experience a 25% increase in recreational use in the next 10 years, whether or not any work is done on recreational facilities. Visitor demand will increase, and the Forest Service will continue to “cap” the canyon use level at current numbers, but the proposed addition of 82 parking spaces in the canyon is not regarded as a significant factor contributing to increased use.

### **Four Springs Trail**

The Forest Service proposes to construct approximately 0.25 mile of trail using hand tools to connect the **Amphitheater** site (on Madera Canyon road) to the **Bog Springs Campground trail**. Another 1.75 miles of new trail construction using hand tools are proposed to connect the **Dutch John, Bog Springs, and Kent Springs** dead-end trails into two loop trails, and a final 3.0 miles are proposed to connect the **Kent Springs Trail** to **Armour Springs**. These are the four components of the **Four Springs Trail**.

Trails will be constructed to a “more difficult” standard. This requires hand-scraping a narrow, 18" tread width with only a four-foot wide and eight-foot high trimmed vegetation clearance, with no anticipated effect on the upper canopy (trees nine to 18 inches dbh). Trees 18" diameter breast height (dbh) and larger will not be cut. Most trees nine inches dbh and larger can be avoided by trail positioning, but the slope contour and the geology (rocks, cliffs, etc.), may

necessitate cutting a few trees in this size class. This trail specification is not anticipated to significantly alter or open the upper vegetation canopy.

The Forest Service proposes the following procedures during implementation of activities to reduce impacts to the environment, plant and wildlife species and their habitats, private residences located in the canyon, and the general public.

### **Status of the Mexican spotted owl**

A detailed account of the taxonomy, biology, and reproductive characteristics of the Mexican spotted owl was published in the Federal Register listing of the MSO as a threatened species on March 16, 1993, 58 FR 14248, and in the 1995 MSO Recovery Plan (Recovery Plan). Critical habitat was designated in the Federal Register on June 6, 1995, 60 FR 29913, but was later revoked on March 25, 1998, 63 FR 14378). The information provided is included here by reference.

MSO inhabit a physically diverse landscape in the southwestern United States and Mexico. The range of the MSO in the United States is divided into six Recovery Units (RU), and they are further detailed in the Recovery Plan. MSO distribution and status are also detailed in the Recovery Plan.

The Madera Canyon Recreation Complex is located on the west slope of the Santa Rita Mountains, in the Basin and Range-West RU. This RU is dominated by Madrean elements in vegetation and climate and is detailed in the Recovery Plan.

Twenty MSO Protected Activity Centers (PACs) are located on the Nogales Ranger District; of those, 15 occur in the Santa Rita Mountains. These 15 PACs range in size from 600 acres (the recommended minimum) to 862 acres. The PACs occupy a large, contiguous block of habitat in the Santa Rita Mountains, and almost all lie within federally designated wilderness. Of the 15 PACs in the Santa Rita Mountains, eight (01, 02, 03, 04, 06, 07, 11, and 14) are within one mile of some proposed action in this consultation and may experience impacts.

MSO surveys and monitoring among the 15 PACs in the Santa Rita Mountains since 1995 have resulted in considerable information, but data on MSO occupancy, reproductive status, or nest and/or roost sites, were not collected for any PAC in 1999. Core delineations and nest and/or roost sites are based on patterns noted from data gathered since 1990. Because these PACs are so close together, their past histories are considered a reliable indicator of current possible occupancy.

The Recovery Plan notes three types of MSO habitat: protected, restricted, and “other” (see descriptions in Volume I, Part III, pages 84 to 96). The proposed recreation portion of this consultation would affect “other” habitat type. The trail portions of this consultation would impact protected, restricted, and “other” habitat types. The Recovery Plan notes that project activities which occur within one mile of a PAC may affect MSO. Using “one mile from a PAC”

as a measure for impacts, PACs 03, 05, 08, 12, 13, 18, and 20 would not be affected by any proposed project actions.

Other PACs are less than one mile away from various actions of the proposed project components, and some PACs may experience multiple effects.

## **Effects of the Action**

### **Recreation:**

Madera Canyon has received recreation and visitor use for decades. Capacity is limited to 165 vehicles entering the canyon at any one time. The canyon becomes steeper as the road proceeds south, and the relatively low noise levels generated by visitors (vehicle traffic, voices, music) are confined to the canyon bottom by the topography. The majority of canyon-oriented use is by people who spend the day hiking, birding, sightseeing, or picnicing. Excessively loud noise (music, amplifiers, megaphones, etc.) is actively discouraged, and noise levels drop significantly after dark.

Privately-owned summerhomes and several Forest Service developed recreation facilities exist within one mile of PACs 04, 06, 11, and 14. The Whitehouse facility is within one mile of PAC 14, the Bog Springs Campground and the Amphitheater sites are within one mile of PACs 04, 06, 07, and 14, and the Roundup parking area is within one mile of PACs 04, 06, 07, 11, and 14.

The MSO breeding season is from March 1 to August 31, annually, and all construction and trail work will be conducted outside those months. The forest Service expects to take several seasons (years) to complete all components of the proposed project. The exact number of years required to complete the proposed project depends on a number of unknown factors (budget, terrain, number and availability of workers, etc.). As these factors become firmly established each year, a realistic timeline for completion will be developed by the Forest Service and reported to the Service.

Short-term effects to MSO from developed recreation and trail building are expected to include noise, dust, and the presence of people in MSO PACs on an intermittent basis. The noise levels are anticipated to be shielded from the likely nest and roost sites of MSO in the PACs by the combination of distance and topography. Trail construction through the PACs will be on a mid-slope contour that crosses the predominately western and southern slope aspects. These slope faces support few trees and more brushy and open country. The likely nest and/or roost site is over the ridgetop and down in the adjacent drainage with mixed conifer and has a northern aspect.

Noise from large machinery operating on and near the canyon roads and noise from voices and intermittent use of chainsaws during trail construction is expected to occur during daylight hours only, in one PAC at a time, or in one or two developed recreation sites at a time, and be

intermittent. Work in PACs will be outside the MSO breeding season (March 1 through August 31, annually), and recreation noise is expected to be confined to the canyon by its steep topography.

The presence of new trails in PACs will have short- and long-term impacts. People already hike and camp in PACs. Current use (without the new trails) concentrates people in the vicinity of MSO nest and/or roost sites for extended periods of time. Greater numbers of people using the MCRC will occur without any additional trails. To better manage the people who use the trail system, the new trails will encourage people to continue to other, less-biologically-sensitive destinations and not camp in the nest and/or roost drainages. The new sections will provide greater access to the eastside trail system, and will lessen the concentration and time of people in nest and roost sites.

Dust from recreation construction and trail building is expected to be minimal and localized, and is considered to be insignificant.

#### **Four Springs Trail (four trail portions):**

Approximately 32 miles of roads and trails exist in the Santa Rita Mountains. The Forest Service proposes to construct approximately **5.0 total miles** of new trail. Of these 5.0 miles, approximately **0.25 miles** of trail (from the Amphitheater to Bog Springs Campground) is outside any PAC, but within one mile of two PACs (04 and 14). Approximately **4.75 miles** of the remaining proposed trail portions would be built through protected and restricted MSO habitat types in four PACs (01, 02, 04, and 14). The Santa Rita Mountain PACs share common boundaries and approximately 1.0 mile of trail will be arranged to lie directly upon designated MSO PAC boundaries. Topography and geology prevent the rest of the trails from being aligned this way, and portions will be constructed through PACs.

Of the three MSO habitat types (protected, restricted, and “other”), the proposed recreation would impact “other” habitat types located outside the PACs. The Four Springs Trail portions would impact protected, restricted, and “other” habitat types. The Forest Service proposes minimizing disturbance and impact to MSO by their trail specifications, method and timing of hand-construction, and other restrictions as noted in the project description.

The adverse effects of constructing trails through PACs will be short- and long term. Short-term effects will be noise from voices, hand tools, and chainsaws, and localized dusty conditions. Long-term effects will be that, narrow as they are, the trails will be a permanent fixture on the landscape, and will create a slight edge effect on the slopes they pass through. This effect is considered to be insignificant in size and length, because of the few trees and low brush conditions that the trail will pass through. Another long-term effect will be improved movement and management of the people using the trails system, which will result in lessened impacts of noise and time spent by people being restricted to trails that end in drainages that support MSO.

Forest Service minimization measures to reduce effects to MSO while carrying out the proposed project include:

1. Construction will occur over a period of years, with only one or two sites experiencing active construction work at any time.
2. Construction will be during times of low recreational use, reducing effects to the public due to road or facility closures.
3. Construction activities will occur between October 1 through February 28, annually, at specific sites, reducing impacts to MSO. The MSO breeding season is from March 1 to August 31, annually.
4. Best Management Practices will be used to rehabilitate all sites denuded of vegetation and experiencing erosion.
5. Trail construction will be held to a “more difficult” trail standard (see earlier discussion).
6. Tables and picnic sites will be moved away from riparian areas as much as possible (see discussion for the Madera and Roundup Picnic Areas).
7. Riparian tree species (cottonwood, ash, willow, sycamore, etc.), will not be removed during construction actions. All final plans for facilities will be developed using this restriction.
8. Cultural resource surveys will be conducted by qualified personnel prior to ground disturbance activities to ensure sensitive site integrity.
9. Approximately one acre of revegetation will be conducted in riparian areas, with approximately 0.8 acre of revegetation occurring in the Madera Picnic area.
10. All roadway reconstruction will include concrete curbing flush to the asphalt road surface. This design reduces the need for standard-sized road shoulders and overall soil disturbance and vegetation removal.

PAC 04 would be impacted by approximately 1.0 mile of trail built through it, and PAC 14 would be impacted by approximately 2.0 miles of trail built through it. An additional circumstance in PAC 14 is approximately 0.125 mile of the trail would cross through the designated MSO “core” in this PAC. A “core” is the site of a known MSO nest, and/or is the largest collective area of the highest quality MSO nesting and/or roosting habitat available in a PAC, and contains a minimum of 100 acres.

The core in PAC 14 is approximately 100 acres of protected habitat within a wide canyon drainage that runs approximately one mile from southeast to northwest. The proposed 0.125 mile

of this north-south trail route bisects a narrow part of this core. It would be built on the contour line of the predominately southern-exposure slopes as it connects Dutch John Spring to Bog Springs and continues south to connect Bog Springs to Kent Spring. The contour line selected for the trail is the line with the fewest trees to be cut. The remaining 0.75 mile of trail connects Armour Spring to the Florida Saddle Trail, forming a link to the eastern Santa Rita Mountains trail system.

The current situation is that three trails deadend at sensitive riparian areas (Dutch John Spring, Bog Springs, and Kent Spring). Bog Spring supports a known MSO nest (PAC 14). People currently hike these three trails to their ends, picnic and hike off-trail and camp overnight in the immediate area, then return to their original trailhead. Building new portions between the springs will connect these three deadend trails into looped trails, offering other destinations to recreational users. Other new trails will connect these to the eastern Santa Rita Mountains designated trail system. With signing and education, the Forest Service believes people will be encouraged to continue hiking past these sensitive areas instead of spending long periods of time in the riparian area.

In PACs 01 and 02, the trail would be located away from the core areas. In PAC 04, the trail would be a series of switchbacks through the northcentral portion of the PAC, but avoid the core and known MSO locations in the southern end of the PAC.

The premise of building the Four Springs Trail project is in conflict with the 1995 MSO Recovery Plan, which says trail-building in PACs generally should be avoided. The Recovery Plan continues to say trail-building in PACs may be allowed on a case-specific basis if pressing management reasons are demonstrated.

Connecting deadend trails into loops is expected to promote a more even distribution of hikers on the trail system, resulting in reduced disturbance to MSO. Short-term effects may result from some noise disturbance (hand construction of trails) to MSO which may be in the immediate vicinity of active trail crews, but these effects will occur outside the MSO breeding season and are anticipated to be minimal. The trails are arranged to avoid the known nest and/or roost sites in the affected PACs, and will be hand-constructed to strict, non-canopy-opening dimensions.

### **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. All future activities in this area are anticipated to have a Federal nexus because the land is administered by the Forest Service.

### **Conclusion**

After reviewing the current status of the MSO, 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 Madera Canyon Developed Recreation project, as proposed, is not likely to jeopardize the continued existence of the MSO. We base this conclusion of the following:

- 1) the proposed project will reduce the effects of current and future anticipated recreational activities on MSO, and;
- 2) the minimization measures provided will reduce the effects of construction activities on MSO.

Critical habitat was designated for the MSO on June 6, 1995 (60 FR 29914), but was revoked on March 25, 1998 (63 FR 14378); thus, no critical habitat will be affected.

### **INCIDENTAL TAKE STATEMENT**

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 to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. 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 essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service 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 Forest Service so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Forest Service has a continuing duty to regulate the activity covered by this incidental take statement. If the Forest Service (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 Forest Service or applicant 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(i)(3)].

#### **Amount or Extent of Take**

The Service does not anticipate the proposed action will result in any incidental take of MSO. The minimization measures that the Forest Service proposes to implement as part of the proposed project will avoid harm or harassment to MSO during the project.

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.

### **REINITIATION NOTICE**

This concludes formal consultation on the actions outlined in the Madera Canyon Developed Recreation 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.

## 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 Forest Service should:

1. place informational signs at Madera Canyon trailheads explaining the sensitivity of streamside and riparian drainages and water sources, and ask visitors to camp well away from these areas;
2. arrange to post Arizona Game and Fish Department signs that explain it is against Arizona state law to camp within 0.25 mile of a water source, and post these signs at Dutch John, Bog Springs, and Kent Springs.
3. conduct Forest-wide inventories and surveys for lesser long-nosed bat roosts, followed by annual monitoring and surveys for activity and occupancy;
4. Determine and map saguaro and agave plant populations on a Forest-wide basis, using Global Positioning Satellite (GPS) positioning if possible, and tracking future Forest actions that impact these populations; and
5. monitor MSO PACs 01, 02, 04, and 14 for occupancy and reproductive status for one year after trail completion, and report MSO status to the Service at the end of that season's monitoring.

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.

## CONCURRENCES

### **Kent Springs Prescribed Burn**

The canyon will be subjected to future fire situations; it is a matter of when, not if, it will happen. Human-caused fires and lightning ignitions have occurred and will continue to occur in this crowded complex. There are three parts to the prescribed burn project in Madera Canyon. The following list details the prescribed fire methods and objectives.

1. Live and dead fuels will be reduced in a 16-acre area in Madera Canyon (T20S, R14E, Sections 1 and 2). The Madera Canyon road and the Kent Springs Learning Center road (FR 4075) meet in a T-shaped intersection. The proposed burn area alongside the Madera Canyon

road is 0.2 mile long, and the proposed burn area alongside the Kent Springs Learning Center road is 0.5 mile long. The T-intersection of these two roads is included in these 16 acres to be treated.

Chainsaws will be used to thin from below, and tree boles, snags, logs, and fuel accumulations will be chipped or removed. In the area below the Kent Springs Learning Center road and the drainage, the objective is to reduce the fuel ladder and retain crown closure. In the area above the Kent Springs Learning Center road, the objective is to increase the spacing between trees to produce a shaded fuelbreak. This is strategically positioned to protect the Kent Springs Learning Center, provide an escape route for Center visitors and fire crews, reduce the rate and intensity of fire spread, and ensure that fire stays on the ground instead of escaping into the crown. After this treatment, future fires will result in greatly lessened negative consequences and effects.

2. Live and dead fuels will be reduced by burning in a 26-acre block north of the Bog Springs Campground road, and around and downslope of the Bog Springs Campground to the Madera Canyon road in the SE 1/4 of Section 35, T19S, R14E.
3. Live and dead fuels will be reduced by burning in a 12-acre block on the south side of the Bog Springs Campground road.

The treatment objective for the burns around the Bog Springs Campground and north and south of the campground road is to consume fine fuels (grasses, small, dead woody fuels such as fallen twigs, small seedlings, trees, and shrubby vegetation). Reduction of these fine fuels will reduce the existing high risk of fire spreading into the campground from a start on either side of Madera Canyon road.

The majority of canyon structures (summerhomes, the lodge, the learning center) are located on higher ground above this site. Because fire burns much hotter and faster up-slope than downslope or across flat terrain, these structures are more vulnerable to uncontrollable fire situations. Prescribed burning in these two sites will reduce the chances of a lower-canyon fire burning upcanyon and destroying these structures. Firing techniques and control lines will ensure fire intensity remains low. Smoke management will be in accordance with the Arizona Department of Air Quality permit requirements issued for these burns, and is not expected to be significant due to the small area, air movement, and low fire intensity.

The Service concurs with the Forest Service's effect determination that the Kent Springs Prescribed Fire, as proposed, may affect, but is not likely to adversely affect the Mexican spotted owl.

### **Kent Springs Prescribed Burn**

Lesser long-nosed bat locations are known to exist in the Santa Rita Mountains, but informal surveys have not documented any roost sites in Madera Canyon. A low density (three to five plants per acre) of widely scattered, individual agave plants occur in areas that will be disturbed

by the proposed project actions. Agave plants will be protected against direct disturbance by avoidance in the developed recreation and trail-building project actions. Agave plants in the proposed prescribed fire areas occur at a very low density (one to two plants per acre), and the fire prescription may damage or kill plants that exist in an occasional group of dense grasses. Firing techniques will avoid direct ignition of agave plants. Some agave plants are expected to be killed due to the proposed fire, but the number of lost plants is considered insignificant and discountable due to the low density of their occurrence.

The Service concurs with the Forest Service's effect determination that the Madera Canyon Developed Recreation project, as proposed, may affect, but is not likely to adversely affect the lesser long-nosed bat.

The Service appreciates the Forest Services' efforts on behalf of threatened and endangered species and the public lands they inhabit. For further information please contact Thetis Gamberg (520/670-4619) or Sherry Barrett (520-670-4617) of my Tucson office staff. Please refer to consultation number, 2-21-99-F-266, in all future correspondence concerning this project.

Sincerely,

/s/ David L. Harlow  
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (PARD-ES; Steve Chambers)  
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM  
Michele James, Fish and Wildlife Service, Flagstaff, AZ

John Kennedy, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

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**APPENDIX A**

File Code: 2310

Date: February 11, 2000

Subject: Madera Canyon Developed Recreation

To: Thetis Gamberg, FWS

This letter documents our phone conversation of 2/9/2000 regarding your request for clarification of the Madera Canyon Developed Recreation project description. Specifically you wanted to know what would be done where we had described the action as using “best management practices” or “accommodating proper drainage without creating an erosion problem”.

The most appropriate way to clarify what these phrases would mean is to give examples of how actions might be implemented. The phrases themselves are really processes or series of management practices that may get applied as projects move toward and during actual implementation.

The first example involves the Amphitheater Trailhead and Interpretive Area. The description of the action is: Grade the existing gravel parking lot to improve drainage and reduce erosion and associated sedimentation. The existing parking lot is sloped toward the west. Water from the lot drains toward the creek, there is no retaining wall and rills are cut into the bank where water drains from the lot. What is intended is to build up the lower end of the existing lot and grade the remainder of the lot to make it a more gentle grade. We would likely put in some sort of retaining wall along the creek side so that the lot would be stable and not erode.

In addition during the design phase, engineering solutions to control and handle runoff water would be incorporated into the project. There would likely be several solutions that may be looked at, such as draining the parking lot into the road ditch, or providing one or more drains into a culvert with energy dissipater and then into a rock armored drainage. However even into actual construction stage, plans may be changed as the process continues and new opportunities that would provide an system to handle storm water that may work better or equally well but may be a cheaper solution. The details of projects are simply not available and there is a very good chance that they may change before to project is completed. The intent now is to recognize a problem such as the present design of the amphitheater parking lot does not properly handle storm events, and erosion result from water that drains from the lot. There are engineering solutions that range from using culvert, an asphalt or concrete lined ditch leading to a bedrock area or providing a rock lined channel.

Perhaps what is envisioned for the Roundup picnic area is a good example of best management practices. Our intent is to keep the same number of picnic sites (18), but make them easier for the public to find and use, make operation more efficient, and reduce impact to the riparian area along Madera Creek. As we reconstruct the parking area we would look for opportunities to place the picnic sites into areas that were already cleared rather than have to clear vegetation to create space for a picnic site. The areas from where the picnic tables, etc., were removed would then be ripped,

Mr. John McGee

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mulch, seeded, and fenced as necessary. Soil may have to be imported (locally) and the site irrigated to support vegetation. We just don't know specifically what will be required to rehabilitate the site.

I hope this information will be sufficient.

/s/Tom Newman  
TOM NEWMAN  
Wildlife Biologist  
February 11, 2000