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U.S. Fish and Wildlife Service
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AESO/SE
02-21-99-F-0208

February 20, 2003

Mr. Robert E. Hollis, Division Administrator
Federal Highway Administration, Arizona Division
One Arizona Center, Suite 410
400 East Van Buren Street
Phoenix, Arizona 85004

RE: Mt. Graham Rockfall Containment Project, State Route 366; Rockfall Mitigation Project,
HA-AZ STP 404-x(001) TRACS No. 366 GH H4261 01C

Dear Mr. Hollis:

We are responding to your letter dated July 23, 2002, and biological assessment and evaluation (BAE) dated July 8, 2002, requesting formal consultation regarding effects of the proposed Mount (Mt.) Graham Rockfall Containment project on Swift Trail on the threatened Mexican spotted owl (*Strix occidentalis lucida*)(MSO), pursuant to section 7 of the Endangered Species Act (16 U.S.C. 1531-1544), as amended (Act). Critical habitat was designated for the MSO on February 1, 2001, but none occurs on or near the project area; none will be affected.

We received your letter and BAE on August 1, 2002. In your letter, you requested our concurrence that the proposed action is not likely to adversely affect the endangered Mt. Graham red squirrel (*Tamiasciurus hudsonicus grahamensis*)(MGRS). We agree with your determination and provide our rationale in the Concurrence Section of this biological opinion (BO).

This BO is based on information provided in the July 8, 2002, BAE; meetings and telephone conversations among staff from the Arizona Department of Transportation (ADOT), Eco Plan Associates, Inc., the Coronado National Forest, and our office; field investigations; and other sources of information. Literature cited in this BO is not a complete bibliography of all literature available on the species of concern, roadway stabilization and its effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at our Phoenix office.

Consultation History

- April 28, 1999: Safford Ranger District of the Coronado National Forest requested our concurrence for ADOT to conduct a preliminary step (drilling), prior to completing the design for their proposed rockfall containment project on Mt. Graham.
- May 5, 1999: We mailed our concurrence (02-21-99-I-0208) that the drilling would not adversely affect the MSO.
- January 29, 2002: Formal meeting for the Mt. Graham Rockfall Containment project was held in the Tucson ADOT office.
- August 1, 2002: We received the BAE in our Phoenix office.
- December 18, 2002: We were notified this project would be delayed for two or more years, per telephone message from ADOT.
- December 30, 2002: We received an electronic message from ADOT requesting we begin formal consultation on this project and finish as soon as possible as the bid process was to begin in January or February of 2003.
- January 15, 2003: Further clarification of project information was electronically exchanged among ADOT, the Forest Service, and us.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed Mt. Graham Rockfall Containment project on SR 366 (Swift Trail) is located in the Pinaleno Mountains, Graham County, about 14 miles southwest of Safford, Arizona. It involves stabilization of cut slopes above and below the road, roadway re-alignment, and rock and vegetation removal at several locations on Swift Trail, totaling about one and one-half miles. The BAE details the steps, methods, timing, and activities that will be conducted. Clearly described methods, maps, and photographs are detailed in the BAE.

ADOT's best management practices (BMPs) include hazardous waste and vehicle maintenance plans; traffic control; pre-approved sites for storage of rock, materials, and vehicles; pre-approved waste rock disposal plans; erosion control; and record keeping. Further details are listed in the General Requirements section of the Special Provisions portion of the ADOT contract and were included in the BAE. Work will be conducted during daylight hours only, Monday through Friday, from May to November, for two consecutive years.

ADOT conservation measures include surveying the five affected PACs (named in this BO) for MSO occupancy and reproduction status. If MSO reproduction is confirmed, or a MSO nestling or fledgling is found close to the roadway where work is in progress, ADOT will stop work at that site and move at least 0.25 mile away on the road in order to continue work. ADOT will immediately notify the project monitor, the wildlife biologist on the Safford Ranger District, and the wildlife biologist in our Tucson office (or the Assistant Field Supervisor of that office). Discussion between the parties will resolve the appropriate way to protect the MSO at that site.

STATUS OF THE SPECIES

Mexican spotted owl (MSO)

The MSO is a medium-sized owl mottled with irregularly-patterned white and brown spotting on the body and head. In Mexico, it ranges from the state of Puebla throughout the Sierra Madre Occidentalis highlands, and into the Madrean Archipelago. In the United States, it ranges from southern Arizona, northward into southern Utah, across western and central New Mexico, and into southern Colorado and western Texas. Critical habitat was designated for the MSO on February 1, 2001, but none occurs in or adjacent to the project area. See the 1995 MSO Recovery Plan for further information and greater detail regarding the MSO, including biology and management recommendations.

MSO typically sleep during the daytime, but will forage and feed nestlings during the day if they have successfully hatched eggs. MSO nestlings generally fledge in early to mid-June (Ganey 1988). MSO fledglings usually leave their nest before they can fly, hopping onto branches and climbing up and down the nest tree or adjacent trees with their beaks and talons. Within a week of leaving the nest, most owlets can make short, clumsy flights between trees (USDI 1995). It is reasonably unlikely that MSO fledglings could depart the nest stand and immediately become self-sufficient; they depend on their parents for food during the early portion of the fledgling period and feeding by the adults has been known to continue into August and September.

The MSO was listed as a threatened species in a Federal Register notice in 1993 (58 FR 14248). The final rule listing the species cited even-aged timber management and risk of catastrophic fire as the primary threats to the species. Livestock grazing and recreation were believed to be minor threats at that time.

Subsequent to the MSO listing, we formed the Mexican spotted owl Recovery team which developed the Recovery Plan for the Mexican Spotted Owl (Recovery Plan). This document, signed in 1995, divides the U.S. range of the MSO into six recovery units (Rus). The proposed project is in the Basin and Range - West RU.

Since the MSO was listed, we have completed a total of 93 formal consultations. These formal consultations have identified incidences of anticipated incidental take of MSO in 252 PACs. The form of this incidental take is almost entirely harm or harassment. These consultations have primarily dealt with actions proposed by the Forest Service, Region 3; however, in addition to actions proposed by the Forest Service, Region 3, we have also reviewed 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 and sightseeing overflights, and other activities. Only one of these projects (release of site-specific MSO location information) has resulted in a biological opinion that the proposed action would likely jeopardize the continued existence of the MSO.

In 1996, we issued a biological opinion on Forest Service, Region 3's adoption of the Recovery Plan recommendations through an amendment of their Forest Plans. In this non-jeopardy biological opinion, we anticipated that approximately 151 PACs would be affected by activities that would result in incidental take of MSOs, with 26 of those PACs located in the Basin and Range West Recovery Unit (RU). To date, consultation on individual actions under the amended Forest Plans have resulted in 184 PACs adversely affected, with 58 of those in the Basin and Range - West RU.

ENVIRONMENTAL BASELINE

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

Within the Pinaleno Mountains, 23 MSO Protected Activity Centers (PACs) are designated around MSO sites. Of these 23 sites, five occur within 0.25 mile of the work sites designated by ADOT. The PACs are: Turkey Flat (0504A21), Wet Canyon (0504A20), Heliograph (0504A16), Hagens Point (0504A15), and Pitchfork Canyon (0504A22). The BAE includes maps of these five PACs, known MSO nest or roost sites (cores), and the call locations for 1999 through 2001. One known MSO nest site supported a MSO pair that fledged young owls in 1999 and is about 500 yards from a portion of Swift Trail proposed for project work. Other nest and roost sites lie in core areas within 0.5 mile of Swift Trail. We have determined the action area to be 0.5 mile wide on both sides of Swift Trail, from Ladybug Saddle to Shannon Campground, which encompasses those sites and surrounding portions of MSO PACs.

The project area lies in mountainous terrain between about 8,400 feet and 9,200 feet in elevation on the southwestern slope of the Pinaleno Mountains. Vegetation is ponderosa pine (*Pinus ponderosa*)-dominated Petran Montaine Conifer Forest (Pase and Brown 1994). Other vegetation includes mixed conifer and pine-oak woodland, and Douglas fir (*Pseudotsuga menziesii*) and white fir (*Abies concolor*) forest.

The Safford Ranger District of the Coronado National Forest administers the public lands in the Pinaleno Mountains. Activities occurring under their authority include summer homes, recreation, research, livestock grazing, thinning, prescribed burning, and facilities (including but not limited to Bible Camp, campgrounds, visitor information services, and a Forest Service administrative site). By Forest Service permit, three astronomical telescopes on Mt. Graham are administered by the University of Arizona (UA). Privately owned lands within the Forest boundaries support a small number of private homes.

In 1996, the Clark Peak wildfire burned greater than 1,000 acres of chaparral, mixed conifer, and spruce-fir forest. Successful erosion control/rehabilitation was conducted by the Forest Service in areas with topography that did not unnecessarily endanger crews. State activities in the project area concern those portions of Swift Trail under ADOT's administration for repair and maintenance.

Since 1999, forest insects have defoliated and/or killed greater than 3,500 acres of mixed-conifer and spruce-fir forest on Mt. Graham. A recovery team (made up of two subgroups) has been formed and is revising the Mt. Graham red squirrel recovery plan to include this relatively new threat to the species.

EFFECTS OF THE ACTION

Dust from earthmoving and rock work is expected to be confined to the work sites on the road, and is not expected to affect MSO due to distance. Blast operations, machinery, vehicle, and other construction noise is expected to be heard by MSO occupying the above-listed PACs if they are within about 0.5 mile of the road. Noise levels will vary in decibels and frequency and may not be constant. Blasting will be low-level, small, and infrequent. Daytime vehicle traffic will increase the existing ambient noise level due to a greater number and more frequent movement of trucks and equipment up and down Swift Trail from Treasure Park to the base of Mt. Graham.

Wildlife response to noise disturbance is complex, being neither uniform nor consistent. Delaney et al. (1997) reviewed literature on the response of owls and other birds to noise and concluded: 1) raptors are more susceptible to disturbance-caused nest abandonment early in the nesting season; 2) birds generally flush in response to disturbance when distances to the source are less than about 200 feet and when sound levels are in excess of 95 decibels; and 3) the tendency of a bird to flush from a nest declines with experience or habituation to the noise, although the startle response cannot be completely eliminated by habituation. In 1999, Delaney et al. found that ground-based disturbances elicited a greater flush response than aerial disturbances.

Our guidance is to limit potentially disturbing activities to areas equal to or less than 0.25 mile from MSO nest sites during the MSO breeding season (March 1 through August 31, annually). This corresponds with Delaney et al's (1999) 0.25 mile threshold for alert responses to helicopter flights. Maintenance activities associated with this project will occur within 0.25 mile of potential nesting habitat during the MSO breeding season. Delaney et al (1999) found that ground-based disturbances elicited a greater flush response than aerial disturbances.

Owls possess more sensitive hearing than other birds (Bowles 1995). When a sound source arouses an animal, it may affect its metabolic rate by making it more active. This increased activity can deplete energy reserves (Bowles 1995). Noisy human activity can cause raptors to expand their home ranges, but birds often return to normal use patterns when the humans are not present (Bowles 1995). Such expansions in home ranges could affect the fitness of the birds and their ability to successfully reproduce and raise young. Species that are sensitive to the presence of people may be displaced permanently, which may be more detrimental to wildlife than recreation-induced habitat changes (Hammit and Cole 1987, Gutzwiller 1995, Knight and Cole 1995). If animals are denied access to areas that are essential for reproduction and survival, then that population will decline. If animals are disturbed while performing behaviors such as foraging or breeding, that population will also likely decline (Knight and Cole 1995).

Birds may respond to disturbance during the breeding season by abandoning their nests or young; by altering their behavior such that they are less attentive to the young, which increases the risk of young being preyed upon; by disrupting feeding patterns; or by exposing young to adverse environmental stress (Knight and Cole 1995). If adult MSO are disrupted from their normal fledgling feeding behaviors and are unable to adequately feed their young, the fledglings may be negatively impacted. Evidence exists to indicate that disturbance during years of diminished prey base can result in lost predator foraging time. This can cause some raptors to leave an area or to not breed at all (Knight and Cole 1995). Topographic screening between the area of disturbance and the birds' location creates a noise buffer, and may assist in the reduction of noise disturbance (Knight and Cole 1995); however, the physical structure of canyons can magnify disturbances and limit escape/avoidance routes for owls (USDI 1995).

Noise levels will be louder on Swift Trail than those to which MSO are already habituated, but are anticipated to be somewhat reduced due to the buffering effect that trees provide in this setting. Swift Trail is towered over by geologic and topographic features along its length. Forested canyons and slopes absorb nearly all the background traffic noise; a human can lose ambient traffic sounds within 0.25 mile of the roadway in a typical forested setting (T. Newman, pers. comm. 2003). Sound travels upwards, especially in a canyon, but here it is expected to be somewhat attenuated by the heavily forested lands just above the roadway and across the top of the mountains, especially in the upper elevations and densely forested areas that best support MSO roost and/or nest sites. Ridges form terrain line barriers, but canyon walls provide a mechanism for multiple reflection, or reverberation, of blasting noise. These reflections are expected to increase the sound level in some areas and cause the blast noise to persist for a longer duration, perhaps several seconds. These effects have been found to be greatest in adjacent canyons with a direct line of sight to a blast area. Meteorological conditions may also significantly affect peak noise levels at distant receivers, potentially creating noise levels up to 20 decibels lower or higher in some instances. Meteorological factors that may cause pronounced effects on blast noise include wind and temperature inversion (Stachura 1981). Blast noise predictions analysis conducted on the Lincoln National Forest indicates that due to the proximity of known owl locations to the project area, the overall noise from blasting and other activities is likely to be perceived as louder by MSO than by humans.

ADOT will conduct formal MSO surveys in years 2003 and 2004, but their work will start simultaneously in March, 2003 and continue through November, 2004. The work will occur within 0.25 mile of five MSO PACs (#0504A21, 0504A20, 0504A16, 0504A15, and 0504A22), but will also increase the amount of disturbance to any MSO that may occupy the area. Based on past MSO survey information and the best MSO knowledge available for these specific PACs, we believe it reasonably likely that all five MSO PACs will be occupied by at least one adult MSO each. Some of these PACs may support pairs of MSO; some of these pairs may be expected to successfully fledge young. Surveys during the MSO breeding season will help locate MSO in the five PACs, but will also increase the amount of disturbance to any MSO that may occupy the area. ADOT expressed the flexibility to shift site-specific operations to further minimize noise disturbance to nesting or fledgling MSO found near work sites.

Vegetation removal at the sites will result in a permanent loss of about 100 trees of nine inches diameter breast height (dbh) or larger, as well as about 3,290 smaller diameter trees of varying species. These trees will be removed from alongside the roadway in a linear pattern. This will result in a reduction in perching sites or foraging habitat that MSO could use alongside the roadway, for a total of about 3.0 acres.

MSO are reasonably likely to fly, hunt, or roost and/or nest in appropriate habitat which does occur along Swift Trail. One nest site known from 1999 is adjacent to one of the project sites on the road; the MSO successfully fledged young at that site in 1999. We are reasonably certain that MSO activity would increase in intensity in appropriate habitat during their breeding season (March 1 through August 31, annually), especially if a MSO pair successfully produces offspring. This period will coincide with the blasting and construction work to be conducted along Swift Trail.

The three acres of MSO foraging habitat to be removed alongside Swift Trail is not anticipated to be a significant loss or result in a significant change in MSO behavior, especially when compared to the designated 600 acres of the highest quality MSO roost/nest habitat remaining in each PAC.

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. Mt. Graham is all Federally administered land. Most actions will have a Federal nexus and will be subject to section 7 of the Act.

We are not aware of any future actions of State, Tribal, or local or private parties in the project or action area.

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 our biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the MSO. Critical habitat for this species has been designated in Arizona; however, this action does not affect that area and no destruction or adverse modification of that critical habitat is anticipated.

We present our conclusions for the following reason:

1. The proposed activity is a short-term disturbance (a disturbance that will occur over greater than one, but less than three breeding seasons) that should not impair the future reproductive ability of the Turkey Flat, Wet Canyon, Heliograph, Hagens Point, and Pitchfork Canyon PACs.

The conclusions of this BO are based on full implementation of the project as described in the Description of the Proposed Action Section of this document and the BA, including any conservation measures incorporated into the project design.

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 defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). "Harass" is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. 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 Federal Highways so that they become binding conditions of any grant or permit issued to ADOT, as appropriate, for the exemption in section 7(o)(2) to apply. Federal Highways has a continuing duty to regulate the activity covered by this incidental take statement. If Federal Highways 1) fails to assume and implement the terms and conditions or 2) fails to require ADOT 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, Federal Highways or ADOT must report the progress of the action and its impact on the species to us as specified in the Incidental Take Statement [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

We anticipate five MSOs will be taken as a result of this proposed action, each year, for two years. Incidental take is expected to be in the form of harassment due to road construction noise for two MSO breeding seasons (March 1 through August 31, annually), that will occur within the designated boundaries of five MSO PACs. As a result of this action, breeding MSOs may raise fewer young, raise less fit young, or desert the area because of disturbance. We are using PACs to track incidental take of MSO. Our anticipated take for this proposed project will be 10 PACs that may reflect lost MSO reproduction. Until formal surveys are conducted in 2003 and 2004, we are unable to determine if additional MSO or their young will be affected. If surveys indicate otherwise, the incidental take may be adjusted.

The permanent loss of three linear acres of MSO foraging habitat (100 trees of nine inches or greater dbh) has a direct relationship to the issue of take for MSO. MSO nesting, roosting, and foraging habitat surrounds the project area and specific work sites. Recent MSO monitoring information is irregular or lacking in the five PACs. Based on past history and current MSO responses during other owl species surveys, we are reasonably certain that each MSO PAC supports at least one adult MSO per PAC.

EFFECT OF THE TAKE

In this BO, we determined this level of anticipated take is not likely to result in jeopardy to the MSO.

REASONABLE AND PRUDENT MEASURES & TERMS AND CONDITIONS

The following reasonable and prudent measures are necessary and appropriate to minimize take of MSO. In order to be exempt from the prohibitions of section 9 of the Act, you must comply with their accompanying terms and conditions, as follows, which implement the reasonable and prudent measures described, and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

Reasonable and prudent measure #1:

You shall survey for MSO occupancy and reproduction status.

The following terms and conditions implement reasonable and prudent measure #1:

- 1.1 You shall conduct formal MSO surveys for occupancy and reproductive status in the five MSO PACs (as listed in this BO) every year that construction occurs on this project.

- 1.2 You shall use the (revised) 2003 MSO Survey Protocol, or (during year 2003 only), the 2002 MSO Survey Protocol already in general use. Both are available from us.
- 1.3 You shall send us a report of annual MSO survey results. You may include it in your monitoring requirement report or send it separately. The report shall include maps and electronic information (such as Global Positioning Systems (GPS) data).
- 1.4 You shall mail the report to: USFWS/Tucson, 110 S. Church Street, Suite 3450, Tucson, AZ 85701 Attn: MSO biologist).

Reasonable and prudent measure #2:

You shall educate personnel working on the project regarding listed species.

The following terms and conditions implement reasonable and prudent measure #2:

- 2.1 You shall brief all personnel working on any part of the project about Mt. Graham listed species and their habitat needs.
- 2.2 You shall brief all personnel working on any part of the project to observe the posted speed limit, or drive slower if conditions warrant. Personnel shall be observant and immediately report to their supervisor and/or monitor the location (milepost numbers or other means) of any squirrel or owl species, seen or heard, on the road or at their work sites.
- 2.3 You shall ensure the project monitor(s) and/or supervisor, upon being informed of a listed species location, within the project area, immediately notifies (by telephone, electronic transmission, or facsimile) our Tucson office MSO biologist or Assistant Field Supervisor.

Reasonable and prudent measure #3:

You shall monitor incidental take resulting from the proposed project and report to us the findings of that monitoring.

The following terms and conditions implement reasonable and prudent measure #3:

- 3.1 You shall monitor the project areas (and other areas that could be affected by the proposed action) to determine take of individual MSO and/or loss of its habitat that causes harm or harassment to the species. This monitoring will be accomplished per the following:

- a. You shall ensure a biologist, informed about Mt. Graham listed species and their habitat needs, will visit the various work areas on Swift Trail at a minimum of once a week, noting possible take and/or habitat losses not anticipated by the original project description, and informing you, ADOT, and us immediately should take occur.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. You must immediately provide an explanation of the causes of the taking and review with us the need for possible modification of the reasonable and prudent measures.

Disposition of Dead or Injured Listed Species: Upon locating a dead, injured, or sick listed species, you shall make initial notification to our Law Enforcement Office, 2450 West Broadway, #113, Mesa, Arizona (telephone: 480-967-7900) within three working days of its finding. Written notification must be made within five calendar days and include the date, time, and location of the animal, a photograph if possible, and any other pertinent information. The notification shall be sent to the Law Enforcement Office with a copy to this office. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve the biological material in the best possible state; freezing the specimen is often useful. Communicate with our Law Enforcement Office for specimen collection solutions.

Reporting Requirement: You shall submit a brief annual report to us (USFWS/2321 West Royal Palm Road, Suite 103, Phoenix, AZ 85021 Attn: MSO Bio, Tucson suboffice) by December 15, annually, beginning in 2003, for each year of work conducted on this project. These reports shall briefly document for the previous calendar year the effectiveness of the terms and conditions and locations of listed species observed, and, if any are found dead, suspected cause of mortality. The report shall summarize tasks accomplished under the proposed minimization measures and terms and conditions. The report shall make recommendations for modifying or refining these terms and conditions to enhance listed species protection or reduce needless hardship on you or your permittees.

CONSERVATION RECOMMENDATIONS

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

1. We recommend only blasting under certain meteorological conditions (clear to partly cloudy skies with fleecy clouds and relatively warm daytime temperatures or cloudy days with rapidly changing winds, perhaps accompanied by brief showers), as this may minimize the noise created by the blasting.
2. We recommend you consider conducting blasting as late in the breeding season as can be arranged in order to minimize impacts to MSO attempting to reproduce.
3. We recommend that you and ADOT assist in the implementation of the recovery plan for this species, as needed.
4. We recommend you and ADOT continue formal MSO surveys for MSO PACs bordering Swift Trail for continuing baseline information for your future highway projects.

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

REINITIATION NOTICE

This concludes formal consultation on the action outlined in your request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

We appreciate your efforts to identify and minimize effects to listed species from this project. For further information please contact Thetis Gamberg at (520) 670-4619 or Sherry Barrett at (520) 670-4617 of my Tucson staff. Please refer to consultation number, 02-21-99-F-0208, in future correspondence concerning this project.

Sincerely,

/s/

Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Field Supervisor, Fish and Wildlife Service, Albuquerque, NM

Mr. Robert E. Hollis

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Shaula Hedwall, Fish and Wildlife Service, Flagstaff, AZ

Forest Supervisor, Coronado National Forest, Tucson, AZ

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

Regional Supervisor, Arizona Game and Fish Department, Tucson, AZ

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CONCURRENCE

Mt. Graham red squirrel (*Tamiasciurus hudsonicus grahamensis*) (MGRS)

In your July 8, 2002, BAE, you concluded the proposed project is not likely to adversely affect the MGRS. We agree and base our concurrence on the following:

- MGRS and their middens are scattered across the mountain range in mixed-conifer and spruce-fir forested areas. The Fall 2002 MGRS midden survey resulted in a MGRS population number of 269 squirrels. In suitable habitat along the road, individual MGRS live near the Swift Trail.
- The loss of about three acres of understory shrubs and ground cover in the proposed areas along Swift Trail, along with the loss of a variety of sizes and species of trees (see BAE, Table 3), will remove a small amount of MGRS traveling or foraging habitat. This loss is insignificant to the species.
- Construction noise may disturb individual MGRS occurring near the project areas. Some background noise (cars, trucks, and people) already exists along Swift Trail and in the forest where MGRS forage and nest. MGRS are highly mobile and will likely move to quieter areas, which are still likely within their general use locations.
- MGRS are highly mobile and are known to cross Swift Trail, but vehicles related to the project will be very slow-moving and anticipated to be traveling at or below the posted limits of 25 and 15 miles per hour, depending on the part of the road they are traveling and the loads they are carrying.
- No other actions of the proposed project are anticipated to affect the MGRS population. It is expected that any individual MGRS will move farther away from the roadside and the construction noise and the species will not be adversely affected by the proposed project.