



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
3616 W. Thomas, Suite 6
Phoenix, Arizona 85019

2-21-91-F-488

December 27, 1991

MEMORANDUM

TO: Regional Director, Bureau of Reclamation, Lower Colorado Regional Office, Boulder City, Nevada

FROM: Field Supervisor, Fish and Wildlife Service, Phoenix

SUBJECT: Biological Opinion, Coolidge Dam Safety of Dams Repairs.

This memorandum responds to your request of September 25, 1991 for formal consultation, pursuant to Section 7 of the Endangered Species Act (Act) of 1973, as amended, on Coolidge Dam Safety of Dam Repairs. The species of concern is the American peregrine falcon (Falco peregrinus anatum). The 90-day consultation period began on September 27, 1991, the date your request was received in our office. The following biological opinion is based on information provided in the Biological Assessment, data in our files, and other sources of information.

BIOLOGICAL OPINION

It is the Service's biological opinion that Coolidge Dam Safety of Dam Repairs is not likely to jeopardize the continued existence of the American peregrine falcon.

BACKGROUND INFORMATION

Species Description

The peregrine falcon was listed as an endangered species on October 13, 1970 (35 FR 16047). No critical habitat has been designated for this species. The peregrine falcon is a medium-sized raptor with various subspecies distributed worldwide. The American peregrine falcon occurs across much of North America. The peregrine falcon tends to nest on cliffs near sources of avian prey. The peregrine falcon has traditionally been strongly associated with cliffs near large bodies of water such as seacoasts, lakes and large rivers (Ratcliffe 1980). However, the arid American southwest has recently been demonstrated to not only support breeding peregrines, but to support the largest concentration of them known in North America, excluding Alaska. Recent studies have documented high densities of breeding pairs in the Southwest, particularly the Colorado Plateau (Burnham and Enderson 1987, Hays and Tibbitts 1987, Tibbitts and Bibles 1990, Tibbitts and Ward 1990a and 1990b, Enderson et al. 1991, Brown 1991).

In the Southwest, breeding peregrines are currently found almost anywhere large [≥ 100 meters (m)] cliffs are available, with the exception of the hottest and driest desert regions (Tibbitts and Ward 1990a). Large cliffs overlooking chaparral, pinyon-juniper woodland, conifer forest, and riparian habitats apparently provide high-quality habitat. These cliffs are currently occupied by breeding pairs almost wherever they occur in Arizona and southern Utah, even where surface water may be many miles distant. Even in the Sonoran desert, peregrine falcons may be found breeding where perennial surface water and associated riparian prey populations are available.

Project Description

Coolidge Dam was designed and constructed by the Bureau of Indian Affairs (BIA) on the Gila River, just below its confluence with the San Carlos River. The dam is on the San Carlos Indian Reservation, with the right portion of the dam (looking downstream) in Gila County and the left portion in Pinal County. Coolidge Dam is a multiple-dome reinforced-concrete structure serving as a major water storage component of the San Carlos Irrigation Project.

Coolidge Dam was completed in 1931. In 1979, the Bureau of Reclamation (BR) conducted an evaluation of the dam, identifying safety deficiencies related to the dam's inability to pass an updated probable maximum flood (PMF). The dam's outlet works were experiencing problems, and portions of the penstocks were deteriorated (USDI, Reclamation 1980). At the request of BIA, BR replaced the penstocks in 1986. In May 1989, the BR completed a report for the BIA entitled "Technical Evaluation on Safety of Dams Deficiencies and Recommended Corrective Action" (USDI, Reclamation 1989). The proposed project is intended to correct remaining safety deficiencies at Coolidge Dam, by implementing that report's recommended modifications.

Modification of Coolidge Dam is necessary to correct hydrological, structural, and stability problems that render the dam unsafe. The BR considers Coolidge Dam to be so unstable that the dam abutments could fail as a result of an earthquake, from the dam being overtopped, or under normal operating conditions. The PMF was updated in 1984, redefined as a peak flow of 800,000 cubic feet per second and a 17-day volume of 2,754,000 acre-feet. Flood routings indicate the existing spillways cannot accommodate floods greater than 15 percent (%) of the PMF. Spillway walls would be overtopped during a 20% event, resulting in major erosion of the dam foundations. During a 25% event, dam failure could occur (USDI Reclamation 1989). Threat of life studies indicate potential loss of life of 0 to 20 people from a hydrologically induced failure of the dam, and 400 to 500 people from a clear-day failure (failure under normal operating conditions) (USDI Reclamation 1988).

Dam Safety Problems: Specific safety problems at Coolidge Dam include the following.

1. Existing spillways are incapable of handling the updated PMF. The BR estimates the dam would likely fail at flows of 25% or more of the updated PMF. Existing spillways show signs of deterioration which could lead to failure under certain other flooding conditions.

2. The left abutment of the dam is believed to be unstable and could collapse from seismic causes or even during normal operation. Collapse of the left abutment could lead to catastrophic failure of the dam.
3. Model studies indicate flow velocities near the top of the dam and turbulence in the river channel below the abutments could cause the abutments to erode during a PMF event. Erosion of the abutments and the river channel in a PMF event could result in failure of the abutment and ultimately the dam.
4. Unsafe working conditions exist near the abutment and spillway on the right side of the dam. The area consists of large limestone blocks resting on a shale foundation. The shale is weathering and losing the capability to support the limestone blocks, creating a rockfall hazard to construction workers and dam operators.

Dam Modifications - Dam modifications are authorized by the 1978 Reclamation Safety of Dams Act (P.L. 95-578), as amended. Radial gates would be installed pursuant to authorization by the BIA. The dam modifications proposed to correct the above problems include the following.

1. Rehabilitating the spillway chutes: The floors of the chutes would be covered with 6 to 12 inches of reinforced concrete. This would prevent further damage and possible failure of the spillways from turbulent flood flows. Radial gates would be installed on the spillway crest. These would replace the original drum gates which became inoperable sometime after the original construction of the dam was completed. The spillway crest elevation would not be changed.
2. Providing stability to the left abutment: The left abutment would be stabilized by construction of a reinforced concrete buttress wall. This buttress wall would begin inside the left dome of the dam and would extend downstream approximately 120 m. The buttress wall would secure a potentially unstable rock wedge that currently supports the small left outer buttress. This wall would provide stability during both normal operations and seismic disturbances.
3. Providing overtopping protection for the abutments: This protection would consist of placing two to three feet thick concrete armoring over the entire area of the left and right abutments below the spillway chutes, to protect the abutments from erosional damage in the event of overtopping. In addition, the river channel below the dam would be armored by placing large boulders in the river channel approximately 50 m downstream from the base of the powerplant.
4. Installing rockfall protection: The area below the right abutment and spillway would be provided short-term protection by installing a rock fence, constructing a gravel rock trap, reducing the work area under the unstable rock mass, and instrumenting the rock mass to detect movement which will set off alarms.
5. Repairing outlet works: The outlet works located beneath the power plant in the river channel would be repaired.

Proposed Construction Schedule and Blasting

A contract for dam access road work was awarded on June 7, 1991. Notice to proceed was given July 15, 1991, and construction should be completed by the end of February 1992. Through informal Section 7 consultation between FWS and BR, we concluded that the timing and distance of the dam access road construction would not affect the resident peregrine falcons.

A contract for dam modification work is scheduled to be awarded January 21, 1992. Notice to proceed is expected by March 15, 1992, and work is scheduled to be completed by May 1994. Intermittent blasting would be necessary throughout the proposed project. Blasting [not to exceed 133 decibels (USDI 1991)] may be required in three areas: (1) under the left dome; (2) to shape the left and right abutments prior to covering with concrete; and, (3) for production of tailrace armor boulders downstream of the dam and above the existing road.

The BR anticipates the loudest noise and potential disturbance would be from the armor stone blasting and resulting rock slides. Due to the uncertainty of the type of material that will be encountered during excavation, the contractor would also be allowed to blast as an option to accomplish other work.

While the stability buttress wall foundation under the left dome would probably be excavated with a hoe ram, blasting might be necessary. For dam safety reasons, the stability buttress wall is scheduled to be constructed first. To meet the completion date of September, 1992, for this buttress wall, it could be necessary to blast throughout 1992.

Associated Construction Activities - Access into the vicinity of the dam site is poor. The existing road to the area downstream of the dam is narrow, with hairpin turns. The rock cliffs above and below this road are unstable to some degree. The road is currently incapable of safely accommodating the construction traffic that would access the area downstream of the dam. Construction activities near the right abutment could affect the stability of the rock mass in the area.

To provide safe continuous access to the construction area, a new access road is currently being constructed. About 1.4 miles of an existing alignment will be reconstructed, and 2.4 miles of new road will be built. The road work is scheduled to be completed by March, 1992. The San Carlos Apache Tribe (Tribe) will retain the new road for local and recreational traffic.

The BR estimates that approximately 10,000 to 30,000 cubic yards of excess excavation will need to be spoiled. This material would result from shaping, cleaning, and scaling the abutments, removing material from within the tail race, removing material used for the downstream cofferdam, and removing material used to construct the temporary river crossing. Upland spoil deposition sites have been identified.

Blasting

Blasting would occur intermittently throughout the 2-year contract, beginning about April, 1992. The blasting and individual shot plans will be reviewed and approved by BR. The contractor will be required in the specifications to monitor vibrations and air blast levels. The specifications will limit air blasts to a maximum of 133 decibels. Blasts will be limited to three per day. Blasting for the buttress wall foundation is tentatively scheduled to be completed by September, 1992. The armor stone blasting downstream of the dam would be a one-time event, which may be done in August so that the armor stones could be placed during a no-flow period in October and November. Processing of the material would most likely be achieved by mechanical or chemical means rather than by additional blasting. The shaping of the left and right abutments is scheduled for the July to November period but should only take two to three months to complete.

The BR has stated (USDI Reclamation 1991) that if required, blasting could be avoided from March 1 through July 31, until the young peregrines have fledged, or for a shorter period during the early nesting period when the birds are most susceptible to disturbance. During this formal Section 7 consultation, it was agreed that test blasting would be conducted to determine the potential effects on peregrine falcons. Test blasting was performed October 9, 1991.

EFFECTS OF THE ACTION

Environmental Baseline

The American peregrine falcon appears to be making considerable progress toward recovery through much of its range (Enderson et al. 1991). Recovery appears to be greatest in the Colorado Plateau of southern Utah, southwest Colorado and northern Arizona, and in adjacent habitats in Arizona, Utah and Colorado. Recovery in this region is inferred from high total numbers of breeding pairs, high rates of site occupancy and high reproductive success (Enderson et al. 1991, Tibbitts and Bibles 1990, Tibbitts and Ward 1990a and b, Burnham and Enderson 1987, Jerry Craig, Colorado Division of Wildlife pers. comm., Clayton White, Brigham Young University, Provo, Utah, pers. comm.).

In Arizona, 167 occupied breeding sites have been identified in surveys from 1988 through 1991 [Troy Corman, Arizona Game and Fish Department (AGFD), pers. comm.]. The Western Peregrine Falcon Recovery Team has tentatively recommended delisting the peregrine falcon in the Southwest (Enderson et al. 1991). The interagency Southwestern Working Group, acting in advisory capacity for the Recovery Team, generally favors downlisting the peregrine to threatened.

In 1990, BR and AGFD personnel observed a vocalizing peregrine falcon in the vicinity of Coolidge Dam. Since then BR, FWS, and AGFD staff have monitored the area for evidence of breeding. In early 1991, an active peregrine falcon breeding territory was confirmed to be centered on cliffs above dam.

Direct and Indirect Effects of the Proposed Action

Blasting

Blasting associated with the proposed project may adversely affect the peregrine falcon. That effect would most likely be in the form of disturbance, particularly startling adults that are incubating eggs or brooding young. Such disturbance may cause breakage of eggs, interfere with thermoregulation of brooded hatchlings, or distract adults from defensive and foraging activities.

Holthuijzen et al. (1990) evaluated nesting prairie falcon responses to construction activities from 1983 to 1986 at Swan Falls Dam, Idaho. He compared sites near construction and recreation activity to controls (sites without disturbance). Construction activity included drilling and blasting to rebuild an unpaved road 60 to 300 m from active nests, and continued throughout the nesting season. Each nest in the blasting study location was exposed to three blasts a day (138-146 decibels), at three-hour intervals on a rock surface facing the nest at an average distance of 127 m (range 120-140 m). This blasting sequence was repeated every other day until the young were 35 days old. When present, falcons reacted to blasting 137 of 254 times (54%). Incubating and brooding falcons were flushed in 25 of 112 instances (22%), but returned to their nests within an average of 3.4 minutes. No eggs were dislodged when the falcons flushed.

Based on comparisons of behavior, nestling weight, occupancy, and productivity between the test and control sites, the authors concluded that "In general, this study demonstrated that construction and recreation activities had no detectable adverse effects on nesting prairie falcons." Based on these findings, they recommended that "... blasting associated with limited human activities does not need to be restricted at distances greater than 125 meters (410 feet) from occupied prairie falcon aeries (nests), provided that peak noise levels do not exceed 140 Db at the aerie and no more than three blasts occur on a given day or 90 blasts during the nesting season."

Holthuijzen (1989) suggested that taxonomic relatedness, as well as similarities in behavior and reaction to human disturbance among prairie falcons, peregrines, and gyrfalcons, may allow the application of similar management recommendations among species. However, varying adaptation to various activity levels is widely recognized among raptor species and individual birds. In Alaska, peregrine falcons deserted nests near blasting associated with construction of a natural gas transportation system (USDI 1976). These falcons appeared to habituate to other activities of construction, but not blasting. Ellis (1981) also found that large explosions can cause hatch failure.

On October 9, 1991, the BR performed a series of test blasts at Coolidge Dam. A stationary sound meter atop the 1991 nest cliff recorded blast noises as 120 and 116 decibels. A hand-held meter recorded the same blasts at 80 and 90 decibels. The stationary meter also recorded the background noise of water released from the dam at approximately 110 decibels. All blasts associated with the proposed project would be below the levels defined as subcritical for prairie falcons (Holthuijzen *et al.* 1990). However, peregrine falcons at this site may respond differently; disturbance is possible.

Collision

Several collision hazards may be presented by the proposed project. The biological assessment (USDI 1991) discusses use of a large lattice-boom crane with cables, and installation of a temporary overhead powerline. Depending on their visibility and exposure to peregrines, these structures may pose collision hazards.

Experiences with urban peregrines have identified a variety of collision hazards associated with human activities and developments. Cade and Bird (1990) discussed a variety of hazards to urban-nesting peregrines. These included flying into plate glass windows, sides of concrete buildings and wires, and entanglement in hanging lines or string. Falcons have collided with aircraft at airports.

Electrocution

The BR has stated that the power transmission line described in the biological assessment (USDI 1991) may be provided by activating an existing line below Coolidge Dam. BR stated that it is unknown whether or not this line is sufficiently protected to prevent electrocution of raptors perching on poles, insulators or wires. Therefore a potential of exposing peregrine falcons to electrocution hazards may exist.

Modification of Habitat

The proposed project is unlikely to adversely modify essential peregrine falcon habitat attributes. It is possible that creation (and therefore preservation through dam repairs) of San Carlos Reservoir enhanced the quality of the area for peregrine falcon habitat. Breeding peregrines are uncommon in the Sonoran desert at this elevation (approximately 900 m), and tend to be found only where perennial surface water is nearby. San Carlos Reservoir supports prey for the peregrines. However, breeding peregrines are found elsewhere in Sonoran desert habitats where small unregulated perennial streams support riparian ecosystems and associated avian communities (Tibbitts and Ward 1990a). It is possible that breeding peregrines occupied this site before construction of Coolidge Dam, preying on birds associated with the riparian ecosystems along the pre-dam Gila and San Carlos Rivers.

One possible effect on habitat might be the potential loss of a bat roost located in the existing dam. Predation on bats by peregrines has been observed in Arizona (Brown 1991, T. Tibbitts, FWS, pers. obs.). Bats may constitute a significant portion of their diet where avian prey are lacking. This is not expected to be true at Coolidge Dam, where considerable avian prey are available over adjacent talus slopes, Gila River riparian habitat and San Carlos Reservoir. While the Coolidge peregrines may prey on bats, it is unlikely they are dependent upon this food source.

Disturbance

The degree of disturbance that peregrine falcons can tolerate is generally believed to be a function of the magnitude of the disturbance, the distance from the breeding site, and the falcon's habituation to human activities. Raptors in frequent contact with human activities tend to be less sensitive to additional disturbances than raptors nesting in remote areas. Where prey is abundant, raptors may even occupy areas of high human activity, such as cities and airports (Newton 1979, Ratcliffe 1980, White et al. 1988). The timing, frequency, and predictability of the disturbance may also be factors. Raptors exposed to human disturbance become less sensitive as the nesting cycle progresses (Newton 1979). Generally, peregrine falcons are least tolerant of disturbance during the prelaying through incubation periods. After young are hatched, peregrines exhibit considerably higher levels of tolerance and are unlikely to abandon the nesting attempt (Cade 1960, Cade and White 1976, Fyfe and Olendorff 1976, Eberhardt and Skaggs 1977, Olsen and Olsen 1978, Monk 1980, Roseneau et al. 1981).

Studies have suggested that human activities within breeding and nesting territories could effect raptors by changing home range movements (Anderson et al. 1990) and causing nest abandonment (Postovit and Postovit 1987, Porter et al. 1973). In areas of steep topographic "screening," Johnson (1988) suggested that human activity within a core area of about 1,300 feet of the nest might impact peregrine breeding efforts. His recommended core area increased to 2,950 feet in areas with no topographic screening. He based these distances on a model using thresholds for flight responses, not on verified impacts on productivity.

Exposure to direct human persecution may make raptors more sensitive to disturbances (Newton 1979). Construction activities, operation of heavy machinery, and aircraft activity, all with the notable absence of direct human persecution, were generally tolerated by nesting peregrine falcons and gyrfalcons (Platt 1977, Ellis 1981, Haugh 1982, White and Thurow 1985, Ritchie 1987, White et al. 1988). Peregrines have nested in situations where there is a high level of disturbance, such as on buildings in urban settings (The Peregrine Fund 1983, Cade and Bird 1990). They have also nested near potential disturbance from low level military jets and sonic booms (Ellis

1981). Peregrine falcons and golden eagles have been known to nest successfully within a few hundred meters of areas such as airports, blasting, construction, quarrying, and mining sites (Pruett-Jones et al. 1980, Haugh 1982, White and Thurow 1985, White et al. 1988). Apparently, responses vary considerably within and among species.

Other Hazards

Cade and Bird (1990) discussed the possible effects on peregrines of high levels of human activity, including noise and machinery such as compressors, blowing fans, and bright night lighting. They concluded that the effects were unknown. Some successful nest sites are on buildings that are illuminated at night. Falcons have been seen capturing migrating birds attracted to, or confused by, city lights. They concluded that "despite the varied and sometimes bizarre accidents that befall city-released peregrines, the success rate overall compares favorably with the results of releases from towers in open country and from natural sites on cliffs... the rate of reproduction in the urban birds compares well to the performance of healthy, expanding populations..."

In discussing urban release sites, Cade and Bird (1990) recommended avoiding and/or modifying collision and entrapment hazards such as smoke stacks, air vents, air-conditioning units, and chimneys. These are primarily dangerous to naive and unskilled fledglings. The authors recommended releases in areas with no major construction projects nearby. Among urban hazards is the potential for recently fledged birds to become stranded in busy areas (e.g., streets) where, because of inherent dangers and noise, the adults may not be able or inclined to locate and feed the young. This is a potential at Coolidge Dam. Fledglings may end up below the nest cliff amid noisy construction activities where adults may not be able to locate them to feed them.

In summary, the direct and indirect effects of the proposed project may adversely impact the peregrine falcon. These impacts may take the form of increased human activity levels, increased collision hazards, increased possibility of disturbance by blasting, possible temporary alteration of prey resources by fluctuating lake levels, and elimination of bat roosts. These impacts would be felt during the life of the proposed project, but the area is not being modified as peregrine falcon habitat. Thus, adverse effects may be expressed as temporarily reduced reproductive success, or at worst, temporary abandonment of the breeding site. However, these impacts would occur only at the Coolidge peregrine falcon breeding site, one of nearly 400 now occupied in the Southwest. The proposed action is not likely to jeopardize the continued existence of the American peregrine falcon.

Cumulative Effects of the Proposed Action

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

Cumulative effects at the Coolidge Dam peregrine falcon breeding site would include recreational activities on and around San Carlos Reservoir, and low level military aircraft overflights. Recreational activities at San Carlos Reservoir include boating, fishing, and picnicking. Traffic also passes along a road below the nest cliff. In an interim report on peregrine falcons nesting in Black Canyon along upper Lake Mohave, the AGFD (1991) indicated

that motor boats and human activity on the riverbank did not disturb peregrine falcon hunting activity. Observations by BR, AGFD, and FWS biologists during the 1991 breeding season recorded no observable disturbance by these activities. Military jets frequently pass over Coolidge Dam at, or below, the elevation of the nest ledge. Collision between these aircraft and falcons may constitute a greater danger than disturbance by noise. The FWS has recently consulted with the U.S. Air Force regarding these overflights.

INCIDENTAL TAKE

Section 9 of the Act, as amended, prohibits any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered a prohibited taking provided that such taking is in compliance with the incidental take statement. The measures described below are nondiscretionary, and must be undertaken by the agency or made a binding condition of any grant or permit issued to the applicant, as appropriate.

The FWS anticipates that the proposed Coolidge Dam Safety of Dam Repairs may result in incidental take of peregrine falcons as follows.

1. Harm (disturbance) resulting in reduced reproduction.
2. Harm (disturbance) causing abandonment of the breeding site.
3. Mortality of falcons resulting from collision with project-related structures, or electrocution from contact with unprotected power lines.

The FWS anticipates that the proposed project could result in the following incidental take.

1. Reduction of reproduction to no young fledged through the life of the project (1992, 1993 and 1994 breeding seasons).
2. Mortality of two peregrine falcons from collision with project-related structures, or electrocution from contact with unprotected project-related power lines.
3. Vacancy of the breeding site (not to include relocation of the eyrie farther from construction activities, but within two miles of Coolidge Dam) for two consecutive breeding seasons during project activities.

If, during the course of the action, the amount or extent of the incidental take limit is exceeded, the Bureau of Reclamation must reinitiate consultation with the FWS immediately to avoid violation of Section 9. Operations must be stopped in the interim period between the initiation and completion of the new consultation if it is determined that the impact of the additional taking will cause an irreversible and adverse impact on the species. The Bureau of Reclamation should provide an explanation of the causes of the taking.

Reasonable and Prudent Measures

The FWS believes the following reasonable and prudent measures are necessary and appropriate to minimize the incidental taking authorized by this biological opinion.

1. Reduce possible disturbance of breeding peregrine falcons by blasting activities.

2. Reduce or eliminate the possibility of raptor electrocution from contact with unprotected power lines.

Terms and Conditions for Implementation

In order to be exempt from the prohibitions of Section 9 of the Act, the Bureau of Reclamation is responsible for compliance with the following terms and conditions, which implement the reasonable and prudent measures described above.

1. Prohibit blasting on the left side (facing downstream) of the Gila River, between Coolidge Dam and a point one-quarter mile downstream, for a period of 45 days beginning with the onset of incubation. This area includes the left (facing downstream) spillway and abutment of Coolidge Dam. Onset of incubation should be determined by observations made by the BR, AGFD and/or FWS. The BR stated (USDI Reclamation 1991) "If required, blasting (associated with the proposed project) can be prohibited from March 1 through July 31, until the young have fledged, or for a shorter period during the early nesting period when the birds are most susceptible to disturbance. A shorter period of restriction would have less impact on the safety of dam repair schedule." If the resident peregrines do not nest on the northwest-facing cliff used in 1991, this blasting restriction need not be imposed.
2. Provide protection against electrocution either by insulating power lines or by installing perch-exclusion structures on power poles.

The incidental take statement provided in this opinion satisfies the requirements of the Endangered Species Act, as amended. This statement does not constitute an authorization for take of listed migratory birds under the Migratory Bird Treaty Act or any other Federal statute.

Reporting Requirements

Upon locating a dead, injured, or sick endangered or threatened species specimen, initial notification must be made to the Phoenix FWS Law Enforcement Office. Care should be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term conservation recommendations has been defined as FWS suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's 7(a)(1) responsibility for these species.

1. Monitor this peregrine falcon breeding site in cooperation with the FWS and AGFD. This monitoring effort should document the effects of project activities (especially blasting) on peregrine falcons. This monitoring

effort should include locating any alternate nest cliff used instead of the 1991 cliff at Coolidge Dam.

2. Cease all blasting activities if monitoring observations under Conservation Recommendation #1 document significant disturbance of the peregrine falcons outside the blasting prohibition period described in Reasonable and Prudent Measure #1 (i.e., during courtship or in later nestling stages or after fledging young).
3. Preserve the bat roost currently existing in Coolidge Dam. If it is not possible to preserve this roost, then re-create the bat roost habitat in the modified Coolidge Dam, in consultation with the FWS and AGFD.

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

CONCLUSION

This concludes formal consultation on the actions outlined in the biological assessment on Coolidge Dam Safety of Dams Repairs. As required by 50 CFR 402.16, reinitiation of formal consultation is required if: (1) the amount or extent of incidental take is reached; (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 future communications regarding this project, please refer to consultation number 2-21-91-F-488. If we can be of further assistance, please contact Tim Tibbitts or Ren Lohofener (Telephone: 602/379-4720 or FTS 261-4720).


for Sam F. Spiller

cc: Regional Director, Fish and Wildlife Service, Albuquerque, New Mexico
(AWE)
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