

F. ENDANGERED SPECIES ACT  
SECTION 7 CONSULTATION



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE

68

POST OFFICE BOX 1306  
ALBUQUERQUE, NEW MEXICO 87103

MAR 8 - 1983

Memorandum

To: Regional Director, U.S. Bureau of Reclamation, ~~Lower Colorado~~ Region, Boulder City, Nevada

From: <sup>AS/MS</sup> Regional Director, Region 2 (SE)

Subject: Central Arizona Water Control Study - Formal Consultation Under Section 7 of the Endangered Species Act, Biological Opinion

This responds to your December 1, 1982, request for formal consultation under Section 7 of the Endangered Species Act of 1973, as amended, on Plan 6 of the Central Arizona Water Control Study (CAWCS), relative to its impact on endangered or threatened species and their habitats, and represents the biological opinion of the U.S. Fish and Wildlife Service in accordance with the Act.

A consultation team was appointed to determine whether Plan 6, as described in the August 1982 Project Action Description, is likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitats. This team was composed of James Burton, habitat specialist, Arizona Game and Fish Department; Richard Bauman, biologist, U.S. Bureau of Reclamation (Phoenix, AZ); Stephen Hoffman and David Langowski, endangered species specialists, U.S. Fish and Wildlife Service (Albuquerque, NM); Jennifer Fowler, fish and wildlife biologist, U.S. Fish and Wildlife Service (Phoenix, AZ); Duane Rubink, Southwest bald eagle recovery team leader, U.S. Fish and Wildlife Service (Phoenix, AZ); Larry Forbis, Southwest bald eagle recovery team member, U.S. Forest Service (Phoenix, AZ); Glenn Harris, environmental analyst, Salt River Project (Phoenix, AZ); and Richard Glinski, Southwest bald eagle recovery team Member, Arizona Game and Fish Department.

The following listed species and critical habitats were considered in this consultation:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Critical Habitat</u>
Bald eagle	<u><i>Haliaeetus leucocephalus</i></u>	None

<u>Common Name</u>	<u>Scientific Name</u>	<u>Critical Habitat</u>
Peregrine falcon	<u>Falco peregrinus anatum</u>	None
Yuma clapper rail	<u>Rallus longirostris yumanensis</u>	None
Gila topminnow	<u>Poeciliopsis o. occidentalis</u>	None

On December 13, 1982, and January 10, 1983, the consultation team met to review the biological assessment provided by the BR and other information provided by Dr. Robert Ohmart and Mr. Dennis Haywood of Arizona State University. Copies of pertinent reports and documents are included in an administrative record maintained in Phoenix, Arizona, Ecological Services Field Office and are incorporated by reference.

The proposed project, as detailed in the August 1982 Project Action Description for Plan 6, consists of four new or reconstructed dams in Maricopa, Yavapai and Gila counties, Arizona: New Waddell Dam on the Agua Fria River, Cliff Dam on the Verde River, and new or modified Roosevelt and Stewart Mountain dams on the Salt River. The proposed reservoirs would be operated for regulatory storage of water delivered through the Central Arizona Project aqueducts and developed through increased storage capacity, flood control and the existing purposes of municipal and irrigation storage, and hydroelectric power generation. Detailed project information was taken from the Project Action Description for Plan 6. Basically, the project would result in a smoothing of peak flows, increase storage capacity of Roosevelt Reservoir, and change the location of water storage on the Verde River via New Waddell Dam.

Based on the consultation team's review of the above information and other information and data available to the Service, it is my biological opinion that the proposed project is likely to jeopardize the continued existence of the southwest bald eagle population. However, reasonable and prudent alternatives have been identified to alter the proposed plan to a degree that the action would no longer jeopardize the continued existence of this species. The following species accounts summarize the data used in formulating this opinion and the reasonable and prudent alternatives. Additionally, conservation measures are offered for the bald eagle and Gila topminnow.

#### Bald eagle

The Southwest bald eagle population occurs almost entirely on the Salt and Verde rivers upstream from the Salt-Verde confluence in central Arizona. Since 1975, an average of seven breeding territories have been active each year. There are six breeding sites known within the CAWCS

area: Chalk Mountain (immediately upstream of Horseshoe Lake), Bartlett (downstream from Bartlett Dam), and Fort McDowell (on the Fort McDowell Indian Reservation) on the Verde River; Pinal (upstream from Roosevelt Lake), and Blue Point/Stewart Mountain (downstream from Stewart Mountain Dam) on the Salt River; and "76"/Punkin Center on Tonto Creek near Roosevelt Lake. In addition to this breeding population, non-breeding wintering eagles occur in the proposed project area from October until April; their numbers usually peak in January.

More than 40 nests, including active, inactive, and historic sites, have been identified within the Salt and Verde drainage. The Arizona population utilizes this desert riparian habitat for breeding and foraging, and represents the entire bald eagle population known to breed in the Southwest. The Southwest bald eagle population is considered to be a disjunct population of the species, with no known gene flow from other bald eagle populations. The idea that this population is reproductively isolated is supported by preliminary electrophoretic analyses of blood samples from Arizona, Washington, and Alaska, which suggest a higher degree of inbreeding in the Arizona birds. Because of the limited distribution and small size of the Southwest bald eagle population, its geographic location and relative isolation, and the unique ecological conditions to which it has adapted, this population is important.

#### Population Status

Since intensive studies began in 1975, the reproductive success of this population has fluctuated. The number of active nests each year has varied from five to nine; fledging from five to 14 young. Prior to 1981 and 1982, the number of young fledged was fairly consistent. An average of six young per year were produced; but, for the last 2 years, 28 have fledged (U.S. Fish and Wildlife Service 1982), at the same time the number of young per active nest increased, suggesting that some mechanism was operating which allowed individual reproducing pairs to rear more young. This abrupt increase is partly the result of the discovery of two "new" nests and but may also reflect increased prey availability, the Forest Service's efforts (via their nest warden program) to restrict human activity around nest sites, and finally, in 1982 the fostering of three chicks to other nests (all three would have otherwise perished). The productivity from 1975-1981 has averaged 0.95 young per occupied territory, which is above the 0.70 level suggested by Sprunt et al., (1973) for maintenance of a stable population. Survival rates and mortality factors operating on this population are virtually unknown, and survival rates can have a much greater effect upon eagle population trends than do reproductive rates (Grier 1980).

Since the population is extremely small and little is known about its demography, a population trend cannot be discerned at this time. The

available data suggest that the loss of a breeding territory, or of several years of production at a single nest site, would reduce the survival and recovery of the population.

#### Population Limiting Factors

Currently, these are not fully understood, but the quality and quantity of nesting and especially foraging habitat, as well as increased human recreational and development pressures, are believed to be the most important factors limiting this population.

Foraging habitat - Evidence suggests prey availability is a primary factor limiting the size, distribution, and reproductive success of this small eagle population. Nesting success has been greater and more consistent at breeding sites containing the highest relative abundance of preferred prey (fish) species (U.S. Bur. of Rec. 1982). Furthermore, severe floods may reduce some fish populations; reproductive success of the population has been especially low during years of frequent and severe flooding (1979 and 1980). Conversely, in 1981 and 1982, when floods were less frequent and severe, reproductive success reached a maximum. In addition, data from two sites (Bartlett and Stewart Mountain) indicate breeding adults occasionally fly in excess of 10 miles from the nest to forage, suggesting a scarcity of nearby foraging areas.

Human disturbance - Since this small population resides very close to a major metropolitan center, nests located in accessible areas are subjected to frequent human disturbance, including rafting, motor boating, fishing, hiking, aircraft, cattle grazing, etc. Human activity within 400 m of nest sites often results in eagles flushing from the nest (Ohmart and Haywood, unpublished data), and may cause the cracking or chilling of eggs, or chilling of young. Direct shooting mortalities of the young or adults may also occur, and abandonment of the nesting territory is possible if the disturbance is prolonged, severe, or occurs during the early stages of the nesting cycle.

Several instances of losses of productivity and/or nest abandonment have been documented for this population as a result of human disturbance. Rubink and Podborny (1976) reported abandonment during incubation at four nest sites; they speculated that it was a result of hiking and climbing activities near the nests. These same authors also reported two chicks being shot and killed by "hikers."

Human disturbance within 400 m of preferred foraging sites may cause eagles to avoid these areas (see Stalmaster and Newman 1978, Ohmart and Haywood, unpublished data), resulting in reduced foraging efficiency. This may result in starvation of young, abandonment of the nest during incubation, or failure to breed altogether. None of the latter instances

have been documented for this particular population, but several examples of recreational activity causing breeding eagles to avoid preferred foraging areas do exist.

In an attempt to limit human disturbance near nest sites, the Forest Service initiated a nest warden program in 1978. Although this program has been a success, it has not eliminated disturbance in the vicinity of eagle nests, nor has it protected important foraging areas situated at some distance from the nest sites. The proposed project, as described, would have a net adverse effect upon three bald eagle breeding territories: Chalk Mountain, Stewart Mountain, and Pinal Creek, as discussed below:

#### A. Chalk Mountain Site

The Chalk Mountain nest has been occupied and eggs have been laid 7 of the last 8 years. Counting the two chicks fostered from this site in 1982, a total of four young have fledged from this site since 1973. Both cliff and tree nests are available to the pair. The tree nests are located at the upper end of Horseshoe Reservoir, and have recently been elevated onto a platform above the high-water mark.

The proposed recreation development and anticipated recreation use of the project area at the Cliff site may disrupt nesting and foraging activities of the Chalk Mountain pair. Presently, recreation use of the Verde River is primarily associated with rafting and canoeing activities that are terminated at Sheep Bridge, approximately 8 miles upstream from the high water mark of the existing Horseshoe Reservoir. This site is used as a take out point by the river runners, rather than continuing down the Verde and floating across Horseshoe Lake. Following project completion, an additional 6 river miles would be made available to rafters. Thus, river trips likely would be extended to take advantage of this condition. Such extended river trips would pass within 5-10 meters of the tree nest now used by the Chalk Mountain breeding pair. Observations of the East Verde bald eagle pair during nesting activities revealed noticeable and significant disturbance to the nesting eagles by the presence of river traffic passing within 400-500 meters of the nest. Although rivercraft are not as disturbing to eagles as hiking and climbing (Ohmart and Haywood, unpublished data, Rubink and Podborny 1976), river runners often stop at bald eagle nests to observe and photograph the birds, and sometimes even camp beneath or adjacent to eagle nests.

Following project completion, the Bureau of Reclamation estimates 16,340 recreation user days annually associated with river-oriented recreation in the vicinity of the Horseshoe nest. This projected increase in water-oriented recreation resulting from the proposed action at the Cliff sites substantially would increase the potential for human/eagle encounters

over present levels. Such encounters would affect not only the breeding activities discussed above, but also any eagle foraging use made of the area. Thus, severe disturbance to these eagles is anticipated.

The Chalk Mountain breeding territory also includes a cliff nest located on the north face of Chalk Mountain above the Verde River. Access to the base of the cliff is possible via a Forest Service maintenance road on the east side of the Verde River from Sheep Bridge to the existing Horseshoe Dam. Increased recreational use of the area would increase traffic via the maintenance road and by off-road vehicles in the vicinity of the nest. Total recreational use of the area is anticipated to exceed 166,000 visitor days per annum (Bureau of Reclamation estimates), an eight-fold increase over current recreation levels at this locale. Such use may disrupt breeding activities of the eagles at either the cliff or tree nests.

Insufficient data are available to assess in detail the possible impacts of replacing Horseshoe Reservoir with flowing river on the foraging ecology of the Chalk Mountain pair. It was the conclusion of the consultation task force that the riverine habitat, once fully established, would be beneficial. However, this process could take several years or decades.

#### B. Stewart Mountain Site

The Stewart Mountain cliff nest was discovered in 1981, and may represent an alternate site for the Blue Point pair. It is the only site within this population fledging three young, and it has done so both years. This breeding territory accounted for 22 percent of the population's total production in 1981 and 1982. The reproduction fate of this nest for the 1984 season is unknown since one of the adult birds disappeared this year. The nest is situated on a vertical cliff 780 feet above the Salt River, approximately 1/2 miles south of the river and about 1 mile downstream from Stewart Mountain Dam.

Adverse effects on production at the Stewart Mountain nest site may occur from increased noise and human activity resulting from the construction of a new Stewart Mountain dam, or modification of the existing dam. Equipment operation, blasting, increased traffic on Bush Highway, and increased human activity levels during the early portion of the breeding season when human activity levels are typically low, could possibly result in abandonment of the nest site and breeding territory. Blasting during the incubation period would be especially dangerous, and could result in cracked or abandoned eggs. Similarly, these disturbances throughout the nesting season could reduce or eliminate the use of important foraging areas, most of which are not known at this time. While

this pair appears to be coping successfully with existing recreational disturbance on the river, any increase in disturbance levels may exceed the pair's tolerance threshold.

### C. Pinal Site

The Pinal nest site was discovered in 1978. It has been active every year, and a total of four young have fledged at this site in 5 years. The nest site is located along Pinal Creek, 1/4 mile upstream from the confluence of the Salt River, on a vertical cliff about 400 feet above the river.

The impacts associated with the described actions at Roosevelt Dam occur due to the borrow area at Meddler Point, recreation associated with Recreation Site 12, and incidental recreational encroachment into the Pinal Creek nest area upstream from Site 12. Meddler Point is a primary downstream foraging area of the Pinal Creek pair, with perhaps 60 percent of the birds' total foraging occurring there through the end of March (D. Haywood, pers. comm.).

Both the aggregate extraction at Meddler Point and the recreation use at Site 12 will cause increases in human activity levels in the area. Current recreational use of Meddler Point is primarily by catfish fishermen, and is estimated by the Bureau of Reclamation to be 2,000-2,500 recreation user days per year. Most of this activity occurs in April and May. The Pinal birds avoid using the area at this time, perhaps due to the concentrated fishing activity or because other fish resource areas are available. Recreation use of the area is projected to increase 5-6 times over current levels following site development. This is likely to cause further avoidance of the area by the Pinal birds.

Increased use of the north shore of Roosevelt Lake, caused by improved access to the reservoir shoreline and developed recreation sites where none currently exist, would result from the proposed action. This increased use of the general area would also tend to raise the level of recreation activity upstream from the Highway 288 bridge on the Salt River. This portion of the river is a steep-walled canyon, and recreation activity would be concentrated on the river. Because this stretch of the Salt River is also an important foraging area for the Pinal Creek pair, increased human activity there could reduce the birds' foraging efficiency. This disturbance, in concert with human-associated avoidance of downstream feeding areas (Meddler Point) by the eagles, could preclude this pair's use of most its preferred foraging habitat. As a result, reproductive success could be lowered, or the area abandoned as a breeding territory.

### Bald Eagle Summary

The proposed action is likely to result in substantial losses of productivity in three bald eagle pairs. Disruption near nest sites could result in a loss of one or more years of production, or could cause abandonment of the breeding territory. Disrupted foraging activities could reduce feeding efficiency, and thereby decrease productivity. The three breeding pairs represent about one-third of the total number of occupied territories in the population. A complete history of eagle productivity for these three breeding territories is provided in the biological assessment. Average annual productivity of 0.4, 3.0, and 0.8 young fledged at the Chalk Mountain, Stewart Mountain, and Pinal Creek sites, respectively, based on accumulated data, could be lost. Average historical productivity of the entire Salt/Verde breeding population has been 0.95 young fledged per occupied territory; productivity for the three territories which would be adversely impacted is entirely consistent with the population average (0.82). Based on productivity data from the last 2 years, the loss of these three territories would result in a 30 percent reduction in the population's reproduction.

### Gila topminnow

The Gila topminnow is a native live-bearing fish that formerly inhabited the Gila River drainage, including the San Francisco Hot Springs (New Mexico), Santa Cruz and San Pedro drainages (Mexico northward), Salt River (downstream of the Roosevelt Lake vicinity), the Verde River (sub-Mogollon drainage), and the main stem of the Gila River downstream to Yuma, Arizona. Loss of habitat was the major reason for the species being listed as endangered in 1967.

The introduction of exotic fish, particularly the mosquitofish (Gambusia affinis) has also resulted in the decline in topminnow abundance and extirpation in many of the remaining small streams and springs. Its current distribution is limited to several perennial springs, including the Monkey Springs system, Santa Cruz County, several springs on the San Carlos Indian Reservation, and three other locales in Arizona. In addition, it has been reintroduced into more than 70 locations within the last year. The Tule Creek population was stocked approximately 12 years ago, but was washed out in 1978 by flash floods. It was restocked in 1980 and appears to have developed a self-sustaining population again.

The Gila topminnow lives in shallows where aquatic vegetation or debris is present. Adults tend to concentrate in moderate current, below riffles, and in algae mats along stream margins. Intermittent, sandy bottomed streams and pools are temporarily occupied, but the core habitat is apparently perennial springs. The Tule Creek topminnow population inhabits

the source spring and downstream intermittent flowing reaches of the creek for about 300 meters. This reach of Tule Creek lies north of the New Waddell element area and under usual flow conditions is isolated from the Agua Fria River and Lake Pleasant. The population was surveyed in 1982 and found to be healthy.

The only project action which is likely to adversely impact the population at Tule Creek would be the occurrence of the Inflow Design Flood (IDF) and resultant high water levels in New Waddell Reservoir and associated runoff from Tule Creek. Inflow Design Flood water backing up along the Agua Fria River and the lower portion of Tule Creek, combined with flows down Tule Creek, would provide easy access for potential predators and competitors to the now isolated habitat of the Gila topminnow. The loss of this reintroduced population would not significantly impact the survival of the species.

#### Peregrine falcon

The mid-continental subspecies Falco peregrinus anatum was one of the first species to be designated endangered under the Endangered Species Act because of its susceptibility to pesticides and habitat loss.

Peregrine falcons nest in cliffs in many areas of Arizona. In the non-breeding season peregrines occur statewide; in February 1981 an immature female was reported to have taken up residence on the roof of a downtown Phoenix bank building. Recent sightings of peregrine falcons on the Salt and Verde drainage include several sightings in the Canyon Lake-Apache Lake vicinity made by Mr. R. Glinski (Arizona Game and Fish Department) during May 1980 and September 1981. A falcon sighted in the Agua Fria River canyon upstream from Lake Pleasant in June 1982 was tentatively identified as a peregrine (R. M. Maze). However, no sightings have been reported by CAWCS field teams during the study.

No peregrine aeries are known in the immediate vicinity of the CAWCS area. Potential breeding habitat is believed to exist along the Salt and Verde rivers and at Roosevelt Lake. Two historic nest sites are also known northeast of Roosevelt Lake. Extensive vertical cliffs with shelves or cavities suitable for nesting, a high degree of topographic relief, and nearby riparian habitat that supports waterfowl, shorebirds, and songbirds, are preferred habitat features. Although these features are important for breeding, transient birds would probably favor the same habitat. The U.S. Forest Service has designated reaches of the Salt-Verde drainage within the Cliff, Roosevelt, and Stewart Mountain sites as wintering habitat for peregrine falcons.

The project actions would not impact the peregrine falcon.

### Yuma clapper rail

The subspecies Rallus longirostris yumanensis is present on the Colorado River south of Topock Marsh, in the Imperial Valley and Salton Sea area of California, and on the Gila River drainage to the confluence of the Salt and Verde rivers and at Picacho Reservoir in Pinal County, Arizona. The favored nesting habitat is cattail marsh; nearby high ground, such as dikes, shorelines, and mud hummocks, is apparently an important element of the territory established by a breeding pair. The population remains in the breeding area from April to mid-October; most adults migrate in October usually following a decline in food items such as crayfish. Some rails may remain as winter residents but about 90 percent of the population migrates and winters in Mexico. Sightings within the CAWCS area include four adults at the Blue Point marshes on the Salt River in June 1979 (G. Burton and R. Todd). Surveys in May 1980 and 1982 revealed evidence of a breeding pair in the same location. In 1982 6 pairs were also present in marshes along the Gila River at Powers Butte, southwest of Phoenix. No sightings have been reported for the Lake Pleasant, Roosevelt, or Horseshoe reservoir areas.

Project actions, in my biological opinion, will not impact habitat which is presently supporting Yuma clapper rails, nor will they directly impact the birds. Therefore, the project will not jeopardize the continued existence of the species.

### Conclusions

The following reasonable and prudent alternatives (items 1-5) have been formulated by the consultation team. If the Bureau of Reclamation develops and successfully implements these five items, in consultation with and with the assistance of the Fish and Wildlife Service, the continued existence of the bald eagle is not likely to be jeopardized. Items 6 and 7 constitute recommended conservation measures for the bald eagle and Gila topminnow.

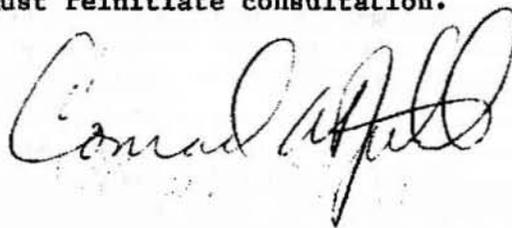
1. The Bureau shall work with the Service and the Forest Service to obtain a three-party Memorandum of Understanding (MOU) to implement management strategies and actions to avoid possible adverse impacts on nesting bald eagles in the project area. This MOU shall be consummated prior to project construction.
2. In accordance with an interagency agreement between the Service and the Bureau currently in effect, continued participation and support by the Bureau at a minimum of current (1983) funding levels through fiscal year 1987, to gather information on the foraging and nesting ecology and prey base of the Stewart Mountain, Chalk Mountain, and

Pinal Creek eagle pairs. Additionally, the Bureau would support Forest Service efforts to maintain nest wardens and provide liaisons between construction forces and the nest wardens to determine effects of observed impacts and coordinate remedial and/or avoidance measures.

3. Horseshoe Dam at the Cliff site to be breached in such a manner and to such an elevation as to promote stream and riparian development in the exposed Horseshoe Reservoir bed, and to avoid excessive erosion.
4. At Meddler Point, either refrain from borrow excavation, or remove materials during the eagle non-breeding season (June through October) and stockpile such materials near the dam (outside the eagle breeding and foraging territory). Excavation of borrow to be conducted in such a manner as to produce no change of hydrologic characteristics of the river in that area. If adjacent to the river channel, the borrow area should be graded and shaped to provide habitat suitable for eagle forage fish and restricted from human use during the eagle breeding season.
5. Construction activities, including blasting, should not be initiated at the Stewart Mountain site during the pre-nesting and early nesting periods (October through March), when eagles are especially intolerant of disturbance. Preferably, activities should be initiated at low levels in April or May, and then continued uninterrupted (with the exception of blasting) throughout the following year(s) until construction is complete. This would give the eagles several months to become habituated to the disturbance prior to their next breeding attempt. All blasting activities should be deferred each year during the egg-laying and incubation period (December through March).
6. To assist in the conservation of the Gila topminnow, we recommend the construction of a barrier to movement of Lake Pleasant fishes up Tule Creek. Such a barrier would be placed at a mutually agreed upon location above the IDF elevation.
7. To assist in the conservation of the bald eagle, I recommend that the Bureau conduct pre- and post-construction fishery investigations to assess the effects of changing water flow and storage regimes on fish availability to foraging eagles below the Bartlett and Stewart Mountain dams. (These studies would be in addition to those indicated in #4 above. They are entirely consistent with, although more specific than, studies the Bureau previously agreed to undertake, as stated in a May 28, 1982, memorandum: "We have accepted assignment of responsibility for taking the lead in determining the distribution, abundance, population fluctuation, and spawning periods of carp, catfish, and suckers in the Salt and Verde Rivers.")

This biological opinion is based on the best information available at this time and is limited to the action as described in the August 1982 Plan 6 Project Action Description. Specifically, the consultation was not conducted on the possible interconnection of the Granite Reef Aqueduct of the Central Arizona Project and the Salt and Verde River systems as an action of the proposed Plan 6.

Should this action, as now planned, be modified or altered, or new species be listed that may be affected, or if significant new information becomes available relevant to this consultation, you must reinitiate consultation.



cc: Director, FWS, Washington, D.C. (OES)  
Field Supervisor, ES Field Office, Phoenix, Arizona  
Forest Supervisor, Tonto National Forest, Phoenix, Arizona  
Director, Arizona Game and Fish Department, Phoenix, Arizona  
Attn: Chief, Wildlife Management Division

LITERATURE CITED

- Grier, J. W. 1980. Modeling approaches to bald eagle population dynamics. *Wildl. Soc. Bull.* 8:316-322.
- Rubink, D. M., and K. Podborny. 1976. The Southern Bald Eagle in Arizona. (A Status Report). *Endangered Species Report 1*. U.S. Fish and Wildlife Service, Albuquerque, New Mexico. 33 pp.
- Sprunt, A. N., W. B. Robertson, Jr., S. Postupalsky, R. J. Hensel, C. E. Knoder, and F. J. Ligas. 1973. Comparative productivity of six bald eagle populations. *N. Am. Wildl. and Nat. Res. Conf. Trans.* 38:96-106.
- Stalmaster, M. V., and J. R. Newman. 1978. Behavioral responses of wintering bald eagles to human activity. *J. Wildl. Manage.* 42:506-313.
- U.S. Bureau of Reclamation. 1982. A Biological assessment of Endangered Species. Boulder City, Nevada. 70 pp.+
- U.S. Fish and Wildlife Service. 1982. Bald Eagle Recovery Plan (Southwestern Population). U.S. Fish and Wildlife Service, Albuquerque, New Mexico. 74 pp.



# United States Department of the Interior

BUREAU OF RECLAMATION  
LOWER COLORADO REGIONAL OFFICE  
P.O. BOX 427  
BOULDER CITY, NEVADA 89005

IN REPLY  
REFER TO: LC-152  
565.

APR 1 1983

## Memorandum

To: Regional Director, Region 2 (SE), Fish and Wildlife Service,  
P.O. Box 1306, Albuquerque, New Mexico 87103

From: ~~Regional Director~~ **ACTING** Regional Director

Subject: Formal Consultation Under Section 7 of the Endangered Species  
Act, Biological Opinion, Regulatory Storage Division--Central  
Arizona Project (CAP) (your March 8, 1983 office memorandum)

We have received the Biological Opinion relative to the impacts of Plan 6 of the CAP Regulatory Storage Division on endangered or threatened species and their habitats. The species accounts in the Biological Opinion provide an excellent description of the current status of the Southwest bald eagle population, the Gila topminnow, the peregrine falcon, and the Yuma clapper rail. This facilitates understanding the basis for your biological opinion that the proposed action is likely to jeopardize the continued existence of the Southwest bald eagle. It also permits evaluation of the reasonable and prudent alternatives (Items 1-5) to modify the proposed action, as well as the recommended conservation measures (Items 6 and 7).

We are committed to the implementation of those reasonable and prudent alternatives which have been identified to alter the proposed plan to a degree that would no longer jeopardize the species. Our responses and commitments to these alternatives and conservation measures follow:

1. In accordance with established Bureau of Reclamation (Reclamation) policy, we will work with the Fish and Wildlife Service (FWS) and the Forest Service (FS) to prepare a three-party Memorandum of Understanding (MOU) to implement management strategies and actions to avoid adverse impacts on nesting bald eagles.

As you are aware, a meeting was held on March 24, 1983, with the three parties to initiate discussions of management strategies that will resolve potential conflicts with the bald eagle. This was the first step in working towards a three-party MOU.

2. Reclamation is currently participating in and supporting the collection of information on the foraging and nesting ecology and prey base of the Stewart Mountain, Chalk Mountain, and Pinal Creek eagle pairs in accordance with Interagency Agreement No. 0-07-32-V0133 between the FWS and the Reclamation. We are contributing \$20,000 in fiscal year 1983 and have requested \$20,000 for fiscal year 1984. We will continue to request these funds through fiscal year 1987. Additionally,

Reclamation will continue to support FS efforts to maintain nest wardens and provide liaisons between construction forces. The nest watch program will receive \$8,000 from Reclamation in fiscal year 1983; \$8,000 is programmed for 1984.

3. Reclamation supports breaching Horseshoe Dam in a manner to promote stream and riparian development in the exposed Horseshoe Reservoir and to avoid excessive erosion. Reclamation will coordinate with the FWS to develop the requirements for evacuation of Horseshoe Reservoir to be included in the data submitted for final design and construction specifications.

4. Borrow excavation will be avoided at Meddler Point, if possible. If not, construction specifications will require the removal of materials during the eagle nonbreeding season and the stockpiling of materials outside the eagle breeding and foraging territory. In accordance with standard Reclamation procedures, borrow areas will be restored to provide habitat suitable for eagle forage fish. Human use will be covered in the MOU discussed in Commitment No. 1.

5. Award of the construction contracts associated with Stewart Mountain Dam will be scheduled to permit initiation of construction in April or May and then continue uninterrupted except for blasting. Construction specifications will exclude initiation of construction from October through March. Blasting activities will be prohibited from December through March.

6. Reclamation will work with you to design and evaluate a positive cutoff above the inflow design flood (IDF) elevation to provide a barrier to the movement of fishes upstream on Tule Creek into the Gila topminnow habitat. The positive cutoff will be constructed unless unforeseen design problems or extreme costs are encountered.

7. Reclamation will participate in fishery investigations as part of the Interagency Agreement discussed in Commitment No. 2. The detailed scope of additional fishery investigations beyond those in the Interagency Agreement will be clarified prior to making a final commitment.

The Biological Opinion and Reclamation's commitments to the reasonable and prudent alternatives will be included as an Appendix to the CAP Regulatory Storage Division Draft Environmental Impact Statement and will be incorporated into the text of the Final Environmental Impact Statement.

Roy D. [unclear]