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U.S. Fish and Wildlife Service  
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AESO/SE  
02-21-02-F-0269

September 5, 2002

Memorandum

To: Director, Grand Canyon Monitoring and Research Center, Flagstaff, Arizona

From: Acting Field Supervisor

Subject: Section 7 Consultation on Non-native Sampling Near the Confluence of the Little Colorado River Area

Thank you for your request for consultation with the U.S. Fish and Wildlife Service pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request for formal consultation dated July 15, 2002, was received by us on July 19, 2002. At issue are impacts that may result to the endangered humpback chub (*Gila cypha*) (hbc) from the proposed rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), and other non-native fish removal from the confluence of the Little Colorado River Area located in Coconino County, Arizona.

In your memorandum, you requested our concurrence that the proposed action was not likely to adversely affect the razorback sucker species (*Xyrauchen texanus*) and the bald eagle (*Haliaeetus leucocephalus*). Although not included in the biological evaluation, you later requested concurrence that the proposed project may affect but is not likely to adversely affect critical habitat for the razorback sucker. Our concurrences are provided in Appendix A of this document. You also concluded that the project would have no effect to the critical habitat for the humpback chub and to the endangered southwestern willow flycatcher. These species will not be addressed further in this consultation.

This biological opinion is based on information provided in the July 15 biological evaluation, your March 25, 2002, "Experimental Flows Recommendation", including Attachment 6 titled "An Evaluation of the Efficacy of Mechanical Removal of Non-native Salmonids in the CRE Below the Paria River", telephone conversations with the Grand Canyon Monitoring and Research Center Staff (GCMRC), field investigations, and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available

on the species of concern, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at this office.

### **Consultation History**

Discussions on the need for experimental flows and control of non-native fish species have been underway with the Adaptive Management Program for several months. At the January 18, 2002, Adaptive Management Work Group (AMWG), a motion was passed to develop experimental flows for water year 2002-2003. GCMRC developed the white paper titled "Treatment Scenarios for WY 2002-2003" which includes the scenario for the mechanical removal of salmonids.

Specific discussions between our two offices on the need for formal consultation began on June 21. Several copies of the draft BE were sent to this office for review and comment.

The request for formal consultation on the humpback chub was received in this office on July 19.

We sent a letter initiating formal consultation on July 24. Native American Tribes that could be affected by this proposed action were also notified of the proposed action. In follow up conversations with Steve Gloss, GCMRC, the project has been modified from the July 15<sup>th</sup> BA. All non-native fish were to be removed during the electrofishing effort, instead of just salmonids as described in the BA. These fish were to be removed from the Colorado River ecosystem and not returned to the river as previously discussed.

The timeframe of analysis for this consultation has also been reduced. In the BA, eight trips were discussed; however, after project modification to address the upcoming flow scenarios, only a single trip in September 2002 will be addressed in this consultation.

On August 28<sup>th</sup>, Steve Gloss called to inform our office that the proposed project has been changed again. Instead of removing the non-natives, the trip will focus on non-lethal sampling of trout and other non-natives for diet and predation analysis. The trip is scheduled to launch from Lees Ferry on September 7<sup>th</sup>.

Regulations governing formal consultation allow 90 days plus an additional 45 days to issue the biological opinion. Therefore, we are scheduled to issue a final biological opinion by December 1, 2002. GCMRC has requested an expedited consultation and we were able to meet this request.

## BIOLOGICAL OPINION

### DESCRIPTION OF THE PROPOSED ACTION

GCMRC proposes to conduct a collection of non-native fishes, primarily salmonids from the action area, the area near confluence of the Little Colorado River and the Colorado River in Grand Canyon from river mile (RM) 56.2 to RM 65.7, a total of 9.5 miles (15 km). In addition, one night of electrofishing will occur between RM 70 and 75. This project is the pilot project for a long-term attempt to reduce the number of predators of the humpback chub. This information will assist with concerns over the lack of empirically established linkages between food base and fishes. It is likely that the recent increase in primary and secondary production may be differentially benefitting non-native species (competitors or predators) over native species. The September effort will be conducted by electrofishing in the mainstem Colorado River. Two electrofishing boats will travel at night, making a single pass through the entire study reach over the course of five successive nights. The number of electrofish hours is 80 (2 boats x 8 hour a day x 5 days). An additional 16 hours of electrofishing will occur on one night in the area between RM 70 and 75. The boats will be outfitted with identical Coeffelt CPS mark XXII electrofishing boxes. All fish will be collected. Stomach contents from the all non-native species (primarily salmonids, greater than 300 mm [11.8 inches]) will be pumped and preserved for lab analysis. All species will be measured and released. Hbc will be released separately and apart from non-native fishes after processing with a minimum separation distance of 200 meters (656 feet).

In order to obtain the relative abundance of juvenile hbc, 30 hoop-nets will be fished for three nights in conjunction with the electrofishing depletion efforts. Three personnel will be responsible for netting activities during the trip. Hoop-net sampling will follow the long-term monitoring program as discussed in Gorman and Coggins (2000) and be checked at 24-hour intervals.

All fish captured, including hbc, will be handled in accordance with the fish handling procedures as summarized by AGFD (AGFD 2002). All humpback chub will be measured, weighed, and examined for external parasites and sexual characteristics. Fish over 100 mm (about 4 inches) total length, will be scanned for a PIT tag. All hbc over 150 mm (about 5.9 inches) that do not have tags will be tagged.

Vital statistics will be cataloged for all hbc mortalities. Each individual will be preserved in ethanols, subsequently x-rayed, and a necropsy (including histological analysis of tissues) performed to attempt to ascertain the cause of death or evidence of injury which may have

occurred as a result of electrofishing. All mortalities will be reported to the Fish and Wildlife Service within 5 days of trip completion. The specimens will be archived in the Arizona State University collection.

This project is the initial phase of work that will continue through fiscal year 2004, probably under a Section 10, Recovery Permit. Experimental low flows may also occur in the project area in October or November. These flows are meant to support the goal of storing sediment in the CRE which may also serve as cover for young hbc.

## STATUS OF THE SPECIES

### **Humpback chub**

The humpback chub is a medium-sized freshwater fish (to about 51 cm; 20 inches) of the minnow family, Cyprinidae. The adults have a pronounced dorsal hump, a narrow flattened head, a fleshy snout with an inferior-subterminal mouth, and small eyes. It has silvery sides with a brown or olive colored back.

The humpback chub is endemic to the Colorado River Basin and is part of a native fish fauna traced to the Miocene epoch in fossil records (Miller 1955; Minckley et al. 1986). Humpback chub remains have been dated to about 4000 B.C., but the fish was not described as a species until the 1940's (Miller 1946), presumably because of its restricted distribution in remote white water canyons (USFWS 1990). Because of this, its original distribution is not known. The humpback chub was listed as endangered on March 11, 1967 (32 FR 4001). Critical habitat for humpback chub was designated in 1994 (59 FR 13374).

Seven reaches of the Colorado River system were designated as critical habitat for humpback chub for a total river length of 379 miles (59 FR 13374). Critical habitat in Arizona includes most of the habitat now used by the Grand Canyon population of humpback chub. Designated reaches are the lower 8 miles of the Little Colorado River (LCR) and from river mile (RM) 34 to RM 208 (Granite Park) along the Colorado River. This represents approximately 28 percent of the historical habitat for the species (USFWS 1994). Known constituent elements include water, physical habitat, and biological environment as required for each life stage. The dominant factor affecting critical habitat is the presence of Glen Canyon Dam. Non-native fishes have also resulted in predation and competition with native fishes. Populations of this species occur in the Little Colorado and Colorado Rivers in the Grand Canyon, Black Rocks area of the Colorado River, Black Rocks, Westwater Canyon, Cataract Canyon, Desolation/Grey Canyon, and Yampa Canyon (Valdez and Clemmer 1982, USFWS 1990).

Little is known about the specific spawning requirements of the humpback chub. It is known that the fish spawn soon after the highest spring flows when water temperatures approach 20° C (68° F) (Kaeding et al. 1990; Karp and Tyus 1990; USFWS 1990). The collection of ripe and spent fish indicated that spawning occurred in Black Rocks during June 2-15, 1980, at water temperatures of 11.5° to 16° C (52 to 60.8 ° F); in 1981, spawning occurred May 15-25, at water temperatures of 16°- 16.3° C ° (60.8° - 61.3°) (Valdez et al. 1982). Adult humpback chub may be found in deep, swift waters with varying depths. Humpback chub spawn in the spring between March and May in the LCR when water temperatures are between 16° and 22° C (60.8° to 71.6°). Swimming abilities of young-of-year (y-o-y) humpback chub were determined to be significantly reduced when laboratory water temperatures were reduced from 20° to 14° C ( 68 to 57.2°). Humpback chub spawned in Black Rocks on the Colorado River in 1983 when maximum daily water temperatures were 12.6° to 17° C (54.7 to 62.3°) (Archer et al. 1985). Backwaters, eddies, and runs have been reported as common capture locations for young-of-year humpback chub (Valdez and Clemmer 1982). These data indicate that in Black Rocks and Westwater Canyon, young utilize shallow areas. Habitat suitability index curves developed by Valdez et al. (1990) indicate young-of-year prefers average depths of 0.6 meters (2.1 feet) with a maximum of 1.5 meters (5.1 feet). Average velocities were reported at 0.06 meters per second (0.2 feet per second).

Seven reaches of the Colorado River system were designated as critical habitat for humpback chub for a total river length of 610 kilometers (379 miles) (59 FR 13374). Critical habitat in Arizona includes most of the habitat now used by the Grand Canyon population of humpback chub. Designated reaches are the lower 12.8 km (8 miles) of the Little Colorado River (LCR) and from river mile (RM) 34 to RM 208 (Granite Park) along the Colorado River. This represents approximately 28 percent of the historical habitat for the species (USFWS 1994). Known constituent elements include water, physical habitat, and biological environment as required for each life stage. Many section 7 consultations have occurred on the humpback chub in both the upper and lower basins of the Colorado River. Numerous recovery efforts are underway in the upper basin and the Fish and Wildlife Service has prepared revised recovery goals for this species.

## ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, 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.

The Grand Canyon population of humpback chub is the only successfully reproducing population in the lower Colorado River basin (Kaeding and Zimmerman 1983, Valdez and Ryel 1995).

Additional aggregations of humpback chub have been documented elsewhere in Grand Canyon (Valdez and Ryel 1995) but the contribution of these fish to the species is not known. Recent data compiled by GCMRC indicates overall declines in the abundance and recruitment of hbc in the LCR since the early 1990s. These analyses were made from mark-recapture data in an open population model to construct estimates of the population recruitment (1989-1997 brood years) and sub-adult and adult abundance (including fish over 150 mm [5.9 inches] total length; 1991-1999). Causes for the decline in hbc in Grand Canyon include infestation of Asian tapeworm, predation by or competition with warm-water non-native catostomids, ictalurids, cyprinids and cold-water salmonids within the Colorado River, and the hydrology of the Colorado River.

The 1994 biological opinion written on the preferred alternative on the operations of Glen Canyon Dam concluded that the action is likely to jeopardize the continued existence of the species and adversely modify its critical habitat. Several reasonable and prudent alternatives were given to remove the jeopardy and adverse modification. Other experimental flows have occurred in the project area including a beach building flow (1996), habitat maintenance flows (1997), and low steady flows (2000). Although some temporary adverse effects to the humpback chub occurred, the flows also benefitted the species and its habitat.

The current proposed action is part of a larger plan to disadvantage non-native fish species in this portion of the Colorado River, particularly rainbow and brown trout, which are estimated to have increased 4 to 6 fold in the last seven years (GCMRC files). In addition to the ongoing monitoring efforts, experimental flows are also likely to occur in the action area during the depletion efforts. These flows are meant to support the efforts of reducing the number of salmonids and other non-native fishes in the CRE. This will be addressed in a separate consultation and is not part of this project. Fisheries monitoring by SWCA will also occur in the Colorado River during September 2002, but no sampling of any kind will occur in the LCR reach.

## EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

As a result of the electrofishing efforts to collect non-native fishes, humpback chub are also likely to be collected. Although hbc are not the target species for collection during the electrofishing effort, some hbc will be captured and some of the catch is likely to be lethal. Mortality rates for juvenile hbc is estimated at one quarter of one percent for juveniles (0.025%), and mortality rates of adult hbc is estimated at one half of one percent (0.05).

Estimated catch rates of humpback chub during the 96 hours of electrofishing this September are calculated from the information gathered during a 10-year period (GCMRC files). The sample area that the calculations were based on were from RM 61 to 65, primarily below the LCR. Whereas about half of this effort will occur above the LCR between RM 56 and 61, where very few adult hbc and virtually no juveniles are expected. The original calculation was based on 320 hours of electrofishing. Given that the numbers are now only 30% of that estimate (96/320), and hbc are not expected in the reach between RM 57.2 and 61, we estimate that between zero and 570 juvenile hbc could be captured and anywhere from 3 to 36 hbc over 200 mm (Table 1). The actual number of hbc that will be collected can not be predicted but if the median figure is a measure of anticipated catch rates, 35 hbc will be collected (33 juveniles and 2 adults). An additional 12 and 15 hbc are expected to be caught during three nights of hoop netting (Steve Gloss, GCMRC, pers. comm.). Although hbc could be caught in the hoop net for up to 24 hours, no mortalities are expected as a result of the hoop netting.

Table 1. Catch per unit effort of humpback chub for 10 hours and 320 hours of electrofishing, and estimates for 96 hours during September 2002.

	CPUE/10 hours		Effort/trip (hours)	Estimate		September 2002		
	HBC < 200	HBC >200		HBC < 200	HBC >200	HBC < 200	HBC >200	
Mean	11.94	0.45	320	382	15	76		3
Median	5.16	0.27	320	165	9	33		2
Minimum	0.00	0.00	320	0	0	0		0
Maximum	89.15	5.61	320	2853	180	570		36

All hbc captured will be subject to the effects of electrofishing narcosis and/or tetany, including immobilization, rigid muscles, and altered breathing. Exposure is planned to be brief with the hbc returning to normal breathing and fully recovering within minutes, although some fish may not. Very few mortalities have been recorded as a result of electrofishing in the LCR reach. Handling stress should be minimal if guidance is followed (AGFD 2002). However, some hbc mortalities are likely during this project. Vertebral injuries, external injuries, or other long-term effects are not expected to occur. Internal soft-tissue hemorrhages have been documented in previous electrofishing evaluations with juvenile humpback chub and bonytail chub (*G. elegans*) (Ruppert and Muth, 1997). The incidence of soft-tissue injury in these studies was 20% on humpback chub and 13% in bonytail chub. Subsequent growth and survival were not affected. The investigators also observed no mortalities, external, or internal injuries (Ruppert and Muth 1997). Once the hbc are released, subsequent predation by non-natives is expected but can not be quantified. Native and non-natives will be released at least 200 meters (656 feet) apart to minimize interactions.

The estimated number of rainbow trout that will be collected is also based on previous years catch rate. Anywhere from 1,500 to 3,000 rainbow trout could be caught in the first 10 hours of sampling. Rainbow trout numbers are about 7,000 fish per mile (GCMRC files, AGFD files). Although numbers are not available, some carp, catfish, and other non-natives will also likely be captured. After stomach pumping, with few exceptions, these fish will be returned to the river.

## 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. Since the entire project area is within Grand Canyon National Park, all legal actions likely to occur are considered Federal actions.

## CONCLUSION

After reviewing the current status of humpback chub, the environmental baseline for the action area, the effects of the proposed non-native depletion efforts, and the cumulative effects, it is the Service's biological opinion that this action, as proposed, is not likely to jeopardize the continued existence of the humpback chub. We base these conclusions on the following: The overall objective of the proposed action is to benefit the humpback chub. Adverse effects will be small by comparison.

Critical habitat for this species has been designated and includes the action area; however, GCMRC concluded that this action will have no effect to the action area.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were 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 further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.



The measures described below are non-discretionary, and must be undertaken by GCMRC so that they become binding conditions of any grant or permit issued, as appropriate, for the exemption in section 7(o)(2) to apply. GCMRC has a continuing duty to regulate the activity covered by this incidental take statement. If the GCMRC (1) fails to assume and implement the terms and conditions or (2) fails to require field crews 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, GCMRC must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement. [50 CFR §402.14(i)(3)].

#### AMOUNT OR EXTENT OF TAKE

The Service anticipates that 500 humpback chub will be taken as a result of this proposed action. The incidental take is expected to be in the form of collect, harass, and kill. Most of the take is expected to be in the non-lethal form of collect and harass. We anticipate that 3 adult and 10 juvenile hbc will to be killed as a result of this action.

#### EFFECT OF THE TAKE

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

#### REASONABLE AND PRUDENT MEASURE #1

The following reasonable and prudent measure is necessary and appropriate to minimize take.

1. GCMRC shall monitor incidental take resulting from the proposed action and report to the Service the findings of that monitoring.

#### Term and Condition #1

In order to be exempt from the prohibitions of section 9 of the Act, GCMRC must comply with the following terms and conditions, which implements reasonable and prudent measure #1 described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

- 1.a. GCMRC shall monitor the project area affected by the proposed action to document take of individuals of the species and/or loss of habitat that causes harassment or death to listed species.
- 1.b. GCMRC shall submit a monitoring report to the Arizona Ecological Services Field Office within 90 days after completion of action. This report shall briefly

document for 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 make recommendations for modifying or refining these terms and conditions to enhance listed species protection or reduce needless hardship from electrofishing efforts.

#### REASONABLE AND PRUDENT MEASURE #2

2. GCMRC shall implement the proposed project to provide the greatest opportunity for humpback chub survival.

#### Term and Condition #2

In order to be exempt from the prohibitions of section 9 of the Act, GCMRC must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

- 2.a. All hbc captured will be held separately from non-native fishes to minimize stress, predation, and injury during recovery from electrofishing. If this can not be accomplished, the non-natives shall be sacrificed.
- 2.b. Wherever possible, GCRMC shall increase the release distance between native and non-native fishes.
- 2.c. All hbc shall be processed and released immediately after recovery in the near shore habitat where they were collected. Any non-natives found in the area shall be permanently removed.
- 2.d. Placement of pit tags by field crews shall be conducted only by those individuals previously permitted by the Fish and Wildlife Service to handle and pit tag hbc.

Review requirement: 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. GCMRC must immediately provide an explanation of the causes of the taking and review with the AESO 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 initial notification must be made to the Fish

and Wildlife Service's Law Enforcement Office, Federal Building, Room 8, 26 North McDonald, Mesa, Arizona (telephone: 480/835-8289) within three working days from the end of the trip. 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. All specimens shall remain at ASU or another educational institution.

## 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 that all non-native fishes be permanently removed from the river during the electrofishing activities.
2. We recommend establishing a refugium and hatchery population of humpback chub for the purpose of rearing humpback fingerlings. Hold fish until they reach 150 mm (5.9 inches) and repatriate into the Colorado River.
3. We recommend coordinating with Reclamation and other parties, to complete the risk assessment for the construction and operation of the selective withdrawal structure within one year.

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

## REINITIATION NOTICE

This concludes formal consultation on the proposed action. 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 Debra Bills (x239) or Tom Gatz (x240). Please refer to the consultation number, 02-21-02-F-0269, in future correspondence concerning this project.

/s/ Thomas A. Gatz

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)  
Project Leader, Fish and Wildlife Service, Pinetop, AZ

Bruce Taubert, Arizona Game and Fish Department, Phoenix, AZ  
Superintendent, Grand Canyon National Park, Grand Canyon, AZ  
Superintendent, Glen Canyon National Recreation Area, Page, AZ  
Director, Navajo Fish and Wildlife Department, Window Rock, AZ  
Director, Bureau of Indian Affairs, Phoenix AZ  
San Juan Southern Paitue, Tuba City, AZ  
Pueblo of Zuni, Zuni, NM  
Havasupai Tribe, Supai, AZ  
Hualapai Nation, Peach Springs, AZ  
Southern Paiute Consortium, Fredonia, AZ  
Hualapai Fish and Wildlife, Peach Springs, AZ  
Hopi Nation, Kykotsmovi, AZ

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### **Appendix A: Concurrences**

In your July 15, 2002, memorandum, you requested our concurrence that the proposed action was not likely to adversely affect the razorback sucker species (*Xyrauchen texanus*) and the bald eagle (*Haliaeetus leucocephalus*). Although not included in the biological evaluation, you later requested concurrence that the proposed project may affect but is not likely to adversely affect critical habitat for the razorback sucker. We concur with these determinations since neither the razorback sucker nor the bald eagle is likely to occur in the project area during September 2002. Constituent elements for the razorback sucker are not likely to be significantly modified.