

2-21-97-F-166

SUMMARY

BIOLOGICAL OPINION ON THE EFFECTS TO WOUNDFIN AND VIRGIN RIVER
CHUB FROM THE REMOVAL OF UNAUTHORIZED FILL FROM THE VIRGIN RIVER
(CLEAN WATER ACT SECTION 404 VIOLATION) AT HIDDEN VALLEY HUNTING
PRESERVE

MOHAVE COUNTY, ARIZONA

Date of the opinion: April 1, 1997

Action agency: Environmental Protection Agency

Proposal: To remove fill placed in the Virgin River that diverted the river from its course and cut off a meander.

Species affected: Woundfin (*Plagopterus argentissimus*) and Virgin River chub (*Gila robusta seminuda*) and their proposed critical habitat in the Virgin River. Potential habitat of some unknown quality for the endangered southwestern willow flycatcher (*Empidonax traillii extimus*) is in the vicinity of the activity.

Biological opinion: Non-jeopardy, no destruction or adverse modification of proposed critical habitat.

Incidental take statement

Level of take anticipated: Risk of take is from heavy equipment in wetted areas of the river channel and stranding in isolated waters causing loss of individuals of either fish species. Work may also increase short term sediment movement and thus affect downstream areas. Take may also have occurred during and after the unauthorized activity.

Reasonable and prudent measures: One measure was provided in the incidental take statement and addressed reduction of take during the construction period.

Terms and conditions: Two terms and conditions were included for the reasonable and prudent measure. The first requires that construction equipment be kept out of live water as much as is possible. The second requires that flow down the new channel be diverted back to the old channel in such a way as to minimize stranding of fish.

Conservation recommendations: No conservation recommendations were made.



United States Department of the Interior
Fish and Wildlife Service

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In Reply Refer To:

AESO/SE
2-21-97-F-166
97166

April 1, 1997

Mr. James Romero
Environmental Scientist
Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105-3901

Dear Mr. Romero:

The U.S. Fish and Wildlife Service has reviewed the information provided by the Environmental Protection Agency for the issuance of an administrative order for the removal of unauthorized fill from the Virgin River at Hidden Valley Hunting Preserve in Mohave County, Arizona. Your March 10, 1997, request for formal consultation was received on March 10, 1997. This document represents the Service's biological opinion on the effects of that action on endangered woundfin (*Plagopterus argentissimus*), Virgin River chub (*Gila robusta seminuda*) and southwestern willow flycatcher (*Empidonax traillii extimus*) in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). Proposed critical habitat for the woundfin and Virgin River chub includes the mainstem Virgin River and those portions of the 100-year floodplain that contain the constituent elements.

This biological opinion is based on information provided in the March 10, 1997, request for formal consultation, telephone conversations between EPA and Service personnel, and telephone conversations between personnel in the Service and other federal agencies having interests in the affected area. The literature cited in this biological opinion does not represent a complete bibliography of all literature on the species listed above or on the effect of actions similar to the proposed action on those species. A complete administrative record of this consultation is on file in the Arizona Ecological Services Office.

CONSULTATION HISTORY

The Service was informed of the unauthorized activity on January 9, 1997. Authority to address the type of unauthorized activity is held by the Corps of Engineers and the EPA. Personnel from EPA contacted the Service on February 20, 1997, to discuss remediation and the need for section 7 consultation. A request for informal consultation was received by the Service on March 3, 1997. After a review of the action and the potential for additional incidental take, the

Service recommended to the EPA that formal consultation be initiated. A request for formal consultation was received on March 10, 1997.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The proposed action would remove the unauthorized fill that created a dike to divert the Virgin River and block the new channel created by the landowner through a non-jurisdictional bench on the south side of the river in order to restore the river to the pre-action channel. The unauthorized activity took place at Hidden Valley Hunting Preserve, approximately two and one half miles below Littlefield. In addition to removal of the fill diverting the river, the landowner responsible for the unauthorized activity will be required to hire a consultant within 30 days to develop a plan to correct any hydrological problems caused by cutting off the meander and creating a shorter, straight channel for the river flows. Downstream functioning of the river may have been compromised by the new channel alignment. The plan would not be developed until after the issuance of the administrative order for removal of the fill, so it can only conceptually be included in this consultation. Additional consultation may be required on the plan once it is developed. Removal of the fill will involve heavy earthmoving equipment to be in the river channel. The specifics of how much material needs to be moved, or the length or time needed for the removal have not been determined; however, there is sufficient detail available to address the effects of the action. The project would be completed prior to the spring runoff floods in the river.

DESCRIPTION OF THE ACTION AREA

The Virgin River is a tributary to the Colorado River that flows approximately 200 miles southwesterly through southern Utah, northwest Arizona and northeastern Nevada before emptying into the Overton Arm of Lake Mead. The Virgin River is located in an area of diverse geology and this is represented by the combination of steep narrow canyons and broad alluvial valleys that are found along its length. Hydrologically, the Virgin River is characterized by widely variable discharges and high sediment load (USFWS 1994). Land uses along the Virgin River include ranching, mining, commercial operations (especially recreational developments), and residential development in and around the towns in the basin.

The specific project area is on private land with federal lands (Bureau of Land Management) located adjacent to the private lands. Some floodplain vegetation in the vicinity of the unauthorized activity was removed by the landowner, in conjunction with the unauthorized activity. In this reach of the Virgin River, the channel and floodplain are flanked by low cliffs. The river floodplain widens considerably in the vicinity of the action, and there are residences and other structures within what appears to be the floodplain. The unauthorized activity affected the entire width of the river and areas outside the jurisdiction of section 404.

STATUS OF THE SPECIES RANGEWIDE

The Virgin River basin has been subject to heavy modification by human activities. Historic flows in the river and its tributaries have been altered by diversions of water for agricultural and municipal uses. These alterations began in the early part of the 1900's. The construction of water storage dams on some tributaries has altered flows and changed water quality both in the tributary and the mainstem itself. Dams, large or small, also act a barriers to fish moving up and down stream and contribute to fragmentation of fish populations.

Woundfin

The woundfin was listed as an endangered species in 1970 under a precursor to the ESA. Critical habitat was proposed for portions of the mainstem Virgin River in 1995. Biological and distributional information on the woundfin is summarized in the Woundfin Recovery Plan (USFWS 1985) and the Virgin River Fishes Recovery Plan (USFWS 1994). These recovery plans are incorporated herein by reference.

The woundfin is a member of the tribe Plagopterini, the genus *Plagopterus* is monotypic. The woundfin is a small, silver minnow with a flat head and a conspicuous, sharp spine on the dorsal fin. It is the most silvery of all American minnows and reflects blue in bright sunlight. A wash of light-yellow at the bases of the pectoral and pelvic fins is the only breeding color noted. Woundfin rarely achieve a length of more than three inches (7.5 centimeters (cm)). The woundfin has a flattened head and belly and overall streamlined body shape, which are indicative of fish inhabiting swift, shallow streams. Woundfin are essentially scaleless, with the exception of small plates of bone situated in the leathery skin, especially near the nape.

Historic distribution of the woundfin included the Colorado, Salt, Verde, and Gila rivers in central and western Arizona in addition to the Virgin River and its tributaries. The woundfin is presently known only from the Virgin River drainage, all other populations have been extirpated. Woundfin from Virgin River stock have been transplanted by the Arizona Game and Fish Department into four different locations along the Hassayampa River, Salt River, Sycamore Creek, and Paria River. These efforts were unsuccessful. A captive population of woundfin was established in 1988 at the Dexter National Fish Hatchery and Technology Center in New Mexico (USFWS 1994).

Woundfin adults and juveniles are most often collected from runs and quiet waters adjacent to riffles, with juveniles using habitats which are generally slower and deeper than adults. Woundfin larvae are collected most frequently from backwaters or slow-velocity habitat along stream margins, often associated with dense growths of filamentous algae (USFWS 1994). Fry may be found in shallow areas next to the channel, while juvenile habitats resemble those of adults. Pools, which often contain predatory non-native fish species, are generally avoided by woundfin of all sizes and ages.

Woundfin are omnivorous, shifting their food habits in response to changing food availability. Food items as determined through stomach content analysis include filamentous algae, detrital material, tamarisk seeds, and insects (USFWS 1994).

The reproductive cycle of the woundfin appears to be initiated by some combination of increasing water temperature, lengthening daylight, and declining spring runoff. Spawning occurs during April to July, depending on the timing of the snow melt runoff, and late summer spawning in August has also been observed. Greger and Deacon (1982) found that, for spawning in an artificial stream system, the choice of substrates appeared to be fairly specific to cobble or gravel. Deacon and Hardy (1982) and Hardy and Deacon (1982) found that highest population densities and greatest spawning success occurred in more suitable habitats. Deacon and Hardy (1982) indicated that spawning failed in suboptimal habitats even when flow conditions were adequate. This indicates that when habitats are impacted by water diversions and other habitat modifications spawning success will be reduced (USFWS 1994).

While Deacon and Hardy (1982) showed reduced survival of young woundfin at flows below 200 cubic feet per second (cfs), monitoring data compiled in the Virgin River Fishes Data Base indicated high initial survival below the Washington Fields Diversion near St. George, Utah, at flows less than 20 cfs (USFWS 1994). Deacon and Hardy (1982) showed that population density and structure were affected by both level of habitat destruction and flow conditions in the river. Reduced recruitment below major diversions has been attributed to water depletions. Deacon and Hardy (1982) further noted that when woundfin populations were severely depleted, such as during the 1977 drought, a two-year period of favorable water conditions was required to rebuild population densities.

Deacon and Hardy (1982) noted that mean monthly flows of 800 cfs or higher during the reproductive period resulted in diminished recruitment. High mortality has been associated with periods of high discharge during late summer and early autumn due to stochastic thunderstorm events (T.J. Hickman and T.B. Hardy, unpubl. field notes). Additionally, Hardy *et al.* (1989) found that an average winter mortality of approximately 30 percent was observed and seemed to be independent of population density.

Little information presently exists on movement of woundfin. Downstream movement within the Virgin River by adults and other life stages has been noted (T.B. Hardy and J.E. Deacon, unpubl. data), but the extent of upstream movement, if any, is not known (USFWS 1994).

The status of woundfin populations in the Virgin River and its tributaries has not significantly improved since its listing as an endangered species. Population declines have been noted since 1984 (USFWS 1994). Physical habitat degradation has continued through the 1980's and into the 1990's. The spread of the red shiner, *Cyprinella lutrensis*, through the Virgin River drainage significantly reduces the value of the remaining habitats due to the competition for resources that occurs. Because woundfin are short-lived, yearly reproductive success is crucial to population maintenance. Creation of more suboptimal habitats will likely significantly affect reproductive success (USFWS 1994).

Conservation efforts by the Service, BLM and other entities taken as part of the recovery plan and biological opinion requirements have provided information on life history and distribution for use in BLM's Habitat Management Plans and red shiner eradication projects in the late 1980's and early 1990's. The eradication projects had some success at reducing or eliminating red shiner in some areas; however, there are no guarantees that the red shiner will not get back into the system.

The status of the woundfin remains precarious. Reintroduction in other portions of the historic range have not succeeded in establishing new populations. The recent development of a cooperative agreement for the recovery of the Virgin River spinedace may provide some benefits to the woundfin, but the extent of any possible benefit is not clear.

Virgin River Chub

The Virgin River chub was listed as an endangered species in 1989. Although critical habitat had been included in the 1986 proposed rule, no critical habitat was designated at the time of listing. Designation of critical habitat was deferred pending the development of an economic analysis. The Service was sued by the Southern Utah Wilderness Alliance in 1993 after failing to designate critical habitat within the statutory time frames. Critical habitat was proposed for portions of the mainstem Virgin River in 1995. Biological and distributional information on the Virgin River chub is summarized in the Virgin River Fishes Recovery Plan (USFWS 1994) and is incorporated here by reference.

The Virgin River chub is a silvery minnow reaching eight to 18 inches (20 to 45 cm). Until recently, the Virgin River chub was considered a subspecies of the roundtail chub (*Gila robusta*) but is now considered a separate species. The species name *seminuda* refers to the small, deeply imbedded scales on the back, breast and portions of the belly. They are difficult to see and may in fact be absent in some individuals. The species is still referenced as a sub-species on the list of threatened and endangered species until an official change of name is processed.

Historic distribution of the Virgin River chub was confined to the Virgin and Moapa River drainages downstream to the Colorado River. Present distribution is within the same two drainages. Construction and operation of Lake Mead inundated the confluence of the Virgin and Moapa Rivers so the two drainages are now separated from each other. A captive population is held at Dexter National Fish Hatchery and Technology Center (USFWS 1994).

Virgin River chubs are most commonly found in deep runs or pool habitats of slow to moderate velocities with instream cover (boulders, root snags) available. Larger individuals may be found in a wider range of water depths and velocities than smaller individuals. Little is known about the habitat preferences of larval and small juveniles.

An omnivorous feeder, the Virgin River chub diet shifts with age. Young fish are considerably more predaceous, feeding almost entirely on macroinvertebrates. Older, larger, fish feed on algae and debris. Diets do shift seasonally as well (USFWS 1994).

The spawning period includes the months of April to June, but the particulars are lacking. Little is known about the spawning requirements, but there may be some similarities with the woundfin since good spawning years appear to coincide.

There has been some data collected indicating that Virgin River chub do move downstream, but the evidence is limited. There is no information on upstream movements or any seasonal pattern of movement.

The status of Virgin River chub populations in the Virgin River has not significantly improved since its listing as an endangered species. Population declines have been noted since 1984 (USFWS 1994). Physical habitat degradation has continued through the 1980's and into the 1990's. Without additional information on life history needs, it is difficult to assess the total effect of these changes, but clearly they are significant. Based on available information, the status of the Virgin River chub is of concern. Because it is only known from the Virgin and Moapa Rivers, there is limited opportunity to re-establish populations in other parts of the historic range. The population in the Moapa River is not listed under the ESA, so it receives no protection through sections 7 or 9 of ESA. With the increasing need for water to support human developments in the region, the risk of losing the Moapa River population is significant. The recent development of a cooperative agreement for the recovery of the Virgin River spinedace may provide some benefits to the Virgin River chub, but the extent of any possible benefit is not clear.

Southwestern Willow Flycatcher

The southwestern willow flycatcher was listed as an endangered species in 1995. Critical habitat was included in the proposed rule to list the species but was not designated at the time of listing. There is no recovery plan prepared for this species. Biological information given below is summarized from the proposed rule.

The southwestern willow flycatcher is a small (15 cm) migratory songbird with a grayish-green back and wings, whitish throat, light grey-olive breast and pale yellowish belly. Two wingbars are visible and the eye ring is faint or absent. The song is a sneezy "fitz-bew" or "fitzi-bew" and the call is a repeated "whit."

One of four subspecies of willow flycatcher, the southwestern willow flycatcher's historic range included portions of Arizona, California, Colorado, Nevada, New Mexico, Texas and Utah. There are some records from the United States-Mexico borderlands area. The present range is comparable; however, losses of riparian vegetation along most of the region's river systems had significantly reduced and isolated populations.

Southwestern willow flycatchers are riparian obligate nesters, selecting thicket of trees and shrubs with a high percentage of canopy cover and dense foliage from at least zero to four meters above the ground. The overall vegetation community ranges from structurally heterogeneous to structurally homogeneous dense stands of trees and shrubs. Fragmented

riparian areas may not contain sufficient vegetation to provide nesting habitat. The other important requirement is the nearby presence of surface water. Breeding season begins in May and early June with the young fledging by mid July. Only one brood per year is generally raised, although second nesting attempts after loss of the first nest has been documented.

As its name suggests, the southwestern willow flycatcher is an insectivore, catching insects on the wing as well as gleaning them from the foliage of riparian trees. There is limited information on specific prey items.

Preferred wintering habitat components and location are not well known. It is believed that the southwestern willow flycatcher winters in Mexico, Central or South America. Identification of birds on wintering grounds is difficult since there is a limited physical difference between the various subspecies.

The status of this endangered bird is of concern. There are very few "large" populations and most records from the recent past have documented at most a few pairs of birds per site. Habitat destruction and fragmentation has significantly reduced the available habitat. Without restoration of habitat, population expansion may be severely limited. An additional, widespread threat is brood parasitism by brown-headed cowbirds (*Molothous ater*). High parasitism rates have been documented throughout the flycatcher's range and have coincided with population declines. Habitat fragmentation and the introduction of livestock have enabled the spread and increase in cowbird populations throughout the west.

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. Because the Virgin River and its tributaries provide the only remaining habitat for listed populations of the woundfin and Virgin River chub, the environmental baseline encompasses the present range of both listed species.

Status of the Species Within the Action Area

The history of water use and development in the project area reflects such development elsewhere in the Virgin River basin. Construction of diversion structures up and down stream, effects to the watershed from upland development, livestock grazing, and placement of residential and commercial operations in the floodplains have altered conditions in the river for native fish.

Woundfin and Virgin River chub are both known to occur in the Virgin River in the vicinity of the proposed action. Sampling stations upstream (Beaver Dam Wash) and downstream (Mesquite Diversion) have consistently provided specimens of both fish species.

Surveys for southwestern willow flycatchers along the Virgin River have been conducted in the last two years. Although no surveys have been done at the specific project site, birds have been found downstream (near Bunkerville) and upstream (Beaver Dam Wash and Twin Bridges) of the project area (personal communication, Zane Marshall, Southern Nevada Water Authority). Southwestern willow flycatchers found in those locations were using the cottonwood/willow vegetation community. Vegetation at the project area is saltcedar and arrowweed. Southwestern willow flycatchers have been reported nesting in saltcedar elsewhere in their range, but the quality of the saltcedar habitat in the project area compared to occupied habitats elsewhere is not known.

Effects of the Action

It is important to consider that woundfin and Virgin River chub and their proposed critical habitat have already been affected by the unauthorized activity. Creation of the dike and new channel in the river altered flows and flow patterns (depth, velocity) and increased sediment downstream. In the cut off meander, there was a potential for fish to be stranded and die or be subjected to environmental stress due to restricted habitat available. Direct mortality may have occurred from the actual construction activities if any occurred in live or standing water, or such waters were filled in.

The unauthorized activity took place in the winter months, so effects to eggs, larval or juvenile fish were unlikely. Although we do not have specific information on the types of aquatic habitats that were in the area affected by the placement of fill and the diversion, the area was likely very similar to those adjacent up and down stream. Runs and riffles likely dominated the reach. Quieter shallows were likely found along the banks and bends. There may or may not have been pools. These habitats were adversely affected by the construction equipment and the placement of fill. The new channel created might have the types of habitat favored by woundfin, but may not have pools or deep runs suitable for Virgin River chub.

Removal of the dike and blocking the new channel would result in the same types of effects to the fish species as was caused by the unauthorized activity. The extent of these effects are difficult to quantify since the size of the woundfin and Virgin River chub populations in the vicinity are not known, and the size of the area that would be affected by the construction has not been determined. It is more likely that effects of the removal of the dike and restoration of flow to the main channel will have greater effects to woundfin than to Virgin River chub because the new channel probably contains suitable habitat for woundfin and not for the chub. If the restoration is completed before the breeding season for these fish, effects to eggs and young of the year can be avoided.

Although there has been clearing of saltcedar for agricultural purposes and to create the new channel, the EPA project under consultation does not include that aspect of the landowner's activities because they did not take place within the jurisdictional limits for section 404. The unauthorized activity took place out of the breeding season of the southwestern willow flycatcher, so direct effects from disturbance did not occur. Creation of the new channel did remove saltcedar and fragment the remaining potential habitat area. Although the new channel now carries the river flow, the act of creating the channel does not fall under the jurisdiction of section 404. There may be some effects to downstream riparian areas from the changes to the Virgin River flows resulting from this unauthorized activity; however, the magnitude and extent of changes to erosion and deposition in riparian areas is not known.

For the southwestern willow flycatcher, the proposed dike removal and stream redirection should not have any additional effects to riparian habitats. The restoration of the river to the pre-fill channel should avoid additional changes to riparian areas along the new channel. Depending on the success of the plan to correct any damage to hydrologic functioning of the river, effects to downstream riparian areas may be reduced. The removal actions should be completed prior to the breeding season for the southwestern willow flycatcher, so effects to nests or disturbance to nesting pairs should be avoided if there were any in the area.

Interrelated and interdependent actions are those actions that either have no utility without the proposed action or depend upon the larger action for their justification. The "but for" test is used to determine which actions qualify for this status so the effects of those actions are included in the analysis of effects. The creation of the new channel is an interrelated or interdependent effect of the unauthorized activity and thus is related to the project actually under consultation, namely the restoration of the river. Direct loss of nesting habitat of some unknown potential occurred and the remaining habitat was fragmented. The action under consultation would prevent water flow from going through the new channel and it would be abandoned. Additional effects would not be anticipated.

Indirect effects of the action are much more difficult to evaluate. Baseline conditions in the Virgin River are the result of past and continuing human activities on the watershed and along the river itself. Activities that affect the natural hydrologic processes of the watershed contribute to changes in high water events that result in different patterns and levels of erosion and deposition. Examples include the watershed effects of construction of roads and buildings, conversion of lands to agriculture, livestock grazing, placement of dams and diversion structures, changes to riparian vegetation amount, structure and composition, as well as bank stabilization projects and other activities. Delineating which changes to river functioning that can be attributed to the implementation of the proposed project is extremely difficult. The plan to restore the river to its previous hydrological function will, if successful, eliminate all or some part of the indirect effects in this category.

Cumulative Effects

Cumulative effects include the effects of future State, 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 ESA.

The past developments and the effects to the Virgin River and its watershed have been addressed in other sections of this opinion. Development activities are not likely to diminish in the near future. This area of Arizona-Nevada-Utah has experienced considerable growth in the last decade and projections for future growth indicate the trend to continue. There may be additional demands for water placed on the water supply and new developments in or adjacent to the floodplain may result in future efforts to manipulate the course of the river or disturb remaining areas of riparian vegetation. These would not be considered cumulative effects unless there was no Federal government involvement from the Corps or EPA for section 404, or other agencies.

The exact locations and size of new developments or of additions to existing developments cannot be stated with certainty, although land use plans have been drafted.

Conclusion

The purpose of the biological opinion is to determine if the total effect of an agency action on a listed species or designated critical habitat is likely to jeopardize the continued existence of the species and/or destroy or adversely modify its critical habitat. The analysis must review the status of the species throughout its range as well as in the immediate project area. Conditions of the habitats, whether designated critical or not, form an important part of the analysis.

A jeopardy finding must view the effects of the action as additive to the aggregate of all past effects and determine if the addition of these new effects is significant to the survival and recovery of the species. The present status of the woundfin and the Virgin River chub is of concern. Survival of these species is not certain. Despite efforts taken for recovery, both species are still declining. Recovery actions will have to involve defining habitat needs for the long term and obtaining those habitats while attempting to retain the existing populations. The proposed action is not likely to involve death or injury to a significant part of the existing population although occupied habitat in the Virgin River has been directly affected. The present status of the woundfin and Virgin River chub is indicative of species with very limited resources left to absorb effects of any new proposed actions. For some types of actions, the jeopardy threshold may have already been reached. The action under consultation, because of the magnitude and types of effects described in this analysis, has not affected the woundfin or the Virgin River chub to that degree. Similarly, the effects to southwestern willow flycatcher are not significant in that no flycatchers have been observed in the area, the proposed action would take place prior to the breeding season, and additional elimination of known suitable habitat in salt cedar would not occur in the project under consultation.

After reviewing the current status of the woundfin, Virgin River chub, and southwestern willow flycatcher, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the removal and restoration proposed by EPA for unauthorized placement of fill at the Hidden Valley Hunting Preserve on the Virgin River is not likely to jeopardize the continued existence of these three endangered species. This determination is based on existing conditions and information as described in this biological opinion. Future projects of the same type will be assessed against the baseline condition in effect at the time of consultation. That baseline will contain the effects of this action as well as all other Federal actions that have undergone consultation and all State, local and private actions that have occurred in the intervening period.

INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of ESA, as amended, prohibit 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 or 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. Harass is defined as 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 any take of listed animal species that results from, but is not the purpose of, carrying out any otherwise lawful activity conducted by the Federal agency or the applicant. 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 terms and conditions of this incidental take statement.

Take from the Proposed Action

An unknown number of woundfin and Virgin River chub may have already been taken due to the placement of the unauthorized fill. This take was likely in the form of killing individual fish through crushing by heavy equipment, burying under fill, or stranding in drying, isolated pools. The specific number is not known and no estimates are given. Without knowing the specific habitat types that were affected, or the size of the fish populations within that specific area, any estimate would likely be inaccurate. The same factors limit the determination of how much take could occur during the removal of the fill and blockage of the new channel. The amount of take can be reduced depending on the way the removal is implemented. There is no indication that direct take of southwestern willow flycatcher has, or will, occur.

Indirect take would result from effects to habitats downstream due to changes in water flows and sediment loads. Some take of this type has already occurred. The levels of this take are also not determinable.

In a biological opinion, the Service is required to provide the action agency with a level of incidental take from the project and a means to assess when that level has been exceeded. However, unless a tangible limit has been determined, defining a level at which it has been exceeded is difficult. A surrogate measure may be employed in these types of cases, provided that the surrogate reflects the types of take that have been identified to occur.

For this project, the Service proposes that the surrogate measure be defined in terms of river area affected by actions to remove the dike and block the new channel. The Service has determined that incidental take will be exceeded if any one or more of the following criteria are not met:

1. Construction work is confined to an area 30 meters upstream and 30 meters downstream of the new dike and the initial 30 meters of the new channel.
2. No more than 30 woundfin and/or one Virgin River chub are found dead below the work area or in the new channel once it has dried up. This criteria will require monitoring with some sort of blocking net downstream be accomplished during and after the project to locate dead fish.
3. All work in the channel to remove the dike and block the new channel will be completed by May 1, 1997 to avoid the breeding seasons for the three endangered species.

Reasonable and Prudent Measures

The measures described below are non-discretionary, and must be implemented by the agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The EPA has a continuing duty to regulate the activity covered by this incidental take statement. If the EPA (1) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize take of woundfin and Virgin River chub:

1. Measures will be taken to minimize the potential for direct take of these fish during the construction period.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of ESA, the EPA must comply with the following terms and conditions which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

To implement RPM 1:

1. The EPA will require the landowner to keep equipment out of live water whenever possible during the removal and restoration work. No fill material will be placed back into live water unless this is necessary to return the water flow to the pre-fill channel.
2. Water flow down the new channel will be halted in such a way as to reduce as much as practicable the likelihood of isolated pools forming.

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, this minimized level of incidental take is exceeded, such incidental take represents new information requiring review of the reasonable and prudent measures provided. The EPA must immediately provide an explanation for the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Conservation Recommendations

Section 7(a)(1) of ESA directs Federal agencies to utilize their authorities to further the purposes of ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7 (a)(1) responsibility for the species. No conservation recommendations have been developed for this project.

PROPOSED CRITICAL HABITAT

The magnitude of effects from the proposed action on the proposed critical habitat in the Virgin River is not sufficient to warrant a finding of destruction/adverse modification. Formal conference is not required.

REINITIATION NOTICE

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

If there are any questions regarding this biological opinion, please contact Ted Cordery or Lesley Fitzpatrick.

Sincerely,



Sam F. Spiller
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (GM:AZ)
State Supervisor, Fish and Wildlife Service, Salt Lake City, UT
Supervisor, Las Vegas Office, Fish and Wildlife Service, Las Vegas, NV

Director, Arizona Game and Fish Department, Phoenix, AZ
Regulatory Branch, Corps of Engineers, Phoenix, AZ

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