

Ordering Clauses

29. Accordingly pursuant to the authority contained in Sections 1, 4(I) and (j), 11, 201–205, 218, 220, 256, and 405 of the Communications Act as amended, 47 U.S.C. sections 151, 154(I), 151(j), 161, 201–205 and 218, 220, 256, and 405, and 5 U.S.C. 552 and 553, this Third Report and Order and Order on Reconsideration *is adopted*, and part 68 of the Commission's Rules *is amended* as set forth. Sections 1, 4, 405, and 710 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154, 405 and 610, part 68 of the Commission's rules is amended as set forth.

30. That the rule amendments set forth *shall be effective* July 24, 2000.

List of Subjects in 47 CFR Part 68

Administrative practice and procedure, Communications common carriers, Communications equipment, Hearing aid compatibility, Incorporation by reference, Reporting and recordkeeping requirements, Telephone, Volume control.

Federal Communications Commission.

Magalie Roman Salas,
Secretary.

Rule Changes

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR Part 68 as follows:

PART 68—CONNECTION OF TERMINAL EQUIPMENT TO THE TELEPHONE NETWORK

1. The authority citation for part 68 continues to read as follows:

Authority: Sections 1, 4, 5, 201–5, 208, 215, 218, 226, 227, 303, 313, 314, 403, 404, 410, 522 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154, 155, 201–5, 208, 215, 218, 226, 227, 303, 313, 314, 403, 404, 410, 522.

2. Section 68.213 is amended by revising paragraph (c) to read as follows:

§ 68.213 Installation of other than “fully protected” non-system simple customer premises wiring.

* * * * *

(c) Material requirements. (1) For new installations and modifications to existing installations, copper conductors shall be, at a minimum, solid, 24 gauge or larger, twisted pairs that comply with the electrical specifications for Category 3, as defined in the ANSI EIA/TIA Building Wiring Standards.

(2) Conductors shall have insulation with a 1500 Volt rms minimum breakdown rating. This rating shall be established by covering the jacket or sheath with at least 15 cm (6 inches)

(measured linearly on the cable) of conductive foil, and establishing a potential difference between the foil and all of the individual conductors connected together, such potential difference gradually increased over a 30 second time period to 1500 Volts rms, 60 Hertz, then applied continuously for one minute. At no time during this 90 second time interval shall the current between these points exceed 10 milliamperes peak.

(3) All wire and connectors meeting the requirements set forth in paragraphs (c)(1) and (c)(2) shall be marked, in a manner visible to the consumer, with the symbol “CAT 3” or a symbol consisting of a “C” with a “3” contained within the “C” character, at intervals not to exceed one foot (12 inches) along the length of the wire.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AD23

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Woundfin and Virgin River Chub

AGENCY: U.S. Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the Fish and Wildlife Service (Service), designate critical habitat for the Virgin River chub (*Gila seminuda*) and the woundfin (*Plagopterus argentissimus*) in accordance with the Endangered Species Act of 1973, as amended. The Virgin River chub and woundfin are listed as endangered. Both species occur within the area designated as critical habitat. The designation includes portions of the Virgin River in Utah, Arizona, and Nevada. We are designating 140.1 kilometers (km) (87.5 miles (mi)) of critical habitat for the woundfin (approximately 12.5 percent of its historical range) and the Virgin River chub (65.3 percent of its historical range). The majority of the land to be designated as critical habitat is under Federal ownership (57.7 percent) or private ownership (39.9 percent). This critical habitat designation includes portions of the mainstem Virgin River and its associated 100-year floodplain. Under section 7 of the Endangered

Species Act (Act) of 1973, as amended, Federal agencies are required to ensure that their actions are not likely to destroy or adversely modify designated critical habitat. Section 4 of the Act required us to consider economic and other impacts prior to making this final decision on the size and scope of the designation.

EFFECTIVE DATE: February 25, 2000.

ADDRESSES: You may inspect the complete file for this rule, by appointment, during normal business hours at the office of the Field Supervisor, Ecological Services, U.S. Fish and Wildlife Service, 145 East 1300 South, Suite 404, Salt Lake City, Utah 84115.

FOR FURTHER INFORMATION CONTACT: Mr. Reed E. Harris, Field Supervisor, Salt Lake City Field Office, at the above address, (801/524–5001).

SUPPLEMENTARY INFORMATION:

Background

The woundfin (*Plagopterus argentissimus*) and Virgin River chub (*Gila seminuda*) are currently listed as endangered pursuant to the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). In the subsequent text, we refer to the woundfin and Virgin River chub as “listed fishes.” The Virgin River originates in south-central Utah, running in a southwest direction to northwestern Arizona, and southeastern Nevada for approximately 320 km (200 mi) before emptying into Lake Mead. Prior to the completion of Boulder (Hoover) Dam in 1935, the Muddy River in southeastern Nevada joined the Virgin River before the latter emptied into the Colorado River. These two rivers now flow separately into the Overton Arm of Lake Mead. The Virgin River chub and woundfin have declined in numbers due to the cumulative effects of dewatering from numerous diversion projects; proliferation of nonnative fishes; and alterations to natural flow, temperature, and sediment regimes.

Woundfin

Based on early records, the original range of the woundfin extended from near the junction of the Salt and Verde Rivers at Tempe, Arizona, to the mouth of the Gila River at Yuma, Arizona (Gilbert and Scofield 1898; Minckley 1973). Woundfin were also found in the mainstem Colorado River from Yuma (Jordan and Evermann 1896; Meek 1904; Follett 1961) upstream to the Virgin River in Nevada, Arizona, and Utah and into La Verkin Creek, a tributary of the Virgin River in Utah (Gilbert and

Scofield 1898; Snyder 1915; Miller and Hubbs 1960; Cross 1975). However, because no barriers or habitat considerations exist that would have precluded woundfin from existing further upstream in these rivers, we believe that the woundfin likely occurred further upstream in the Verde, Salt, and Gila Rivers in Arizona.

Except for the mainstem of the Virgin River, woundfin are extirpated from most of their historical range. Woundfin presently range from Pah Tempe Springs (also called La Verkin Springs) on the mainstem of the Virgin River and the lower portion of La Verkin Creek in Utah, downstream to Lake Mead. A single specimen was taken from the middle Muddy (Moapa) River, Clark County, Nevada, in the late 1960s. However, no additional specimens have been collected from that drainage since that time (Deacon and Bradley 1972).

Adult and juvenile woundfin inhabit runs and quiet waters adjacent to riffles with sand and sand/gravel substrates. Adults are generally found in habitats with water depths between 0.15 and 0.43 meters (m) (0.5 and 1.4 feet (ft)) with velocities between 0.24 and 0.49 meters per second (m/s) (0.8 and 1.6 feet per second (ft/s)). Juveniles select areas with slower and deeper water, while larvae are found in backwaters and stream margins which are often associated with growths of filamentous algae. Spawning takes place during the period of declining spring flows.

Virgin River Chub

The Virgin River chub was first described as a full species (*Gila seminuda*) in 1875 (Cope and Yarrow 1875). Later, Ellis (1914) considered this chub to be an intermediate between the roundtail chub (*G. robusta*) and bonytail chub (*G. elegans*), and reduced it to a subspecies (*G. robusta seminuda*) of the roundtail chub. The fish was believed to be restricted to the Virgin River between Hurricane, Utah, and its confluence with the Colorado River.

In a recent taxonomic study of the genus *Gila* using morphological and genetic characters, DeMarais *et al.* (1992) concluded that the prior treatment of the Virgin River chub as a subspecies of roundtail chub was inappropriate and arbitrary. The authors asserted that full species status (*Gila seminuda*) was warranted for the Virgin River chub, which likely arose through introgressive hybridization involving *G. robusta* and *G. elegans* (DeMarais *et al.*, 1992). Moreover, DeMarais *et al.* (1992) concluded that the chub found in the Muddy (=Moapa) River, a Virgin River tributary, was also *G. seminuda*, although the Muddy River population

was "distinctive." Prior to this conclusion, this geographically isolated population of Virgin River chub was considered a separate, unnamed subspecies of roundtail chub (*G. robusta* spp.), and was referred to as the Moapa roundtail chub (Minckley 1973, Smith *et al.* 1977). We, along with the American Fisheries Society and American Society of Ichthyologists and Herpetologists Fish Names Committee (Mr. Joseph S. Nelson, American Fisheries Society, *in litt.* 1993) have accepted the taxonomic revisions of *Gila*.

In past candidate notices of review, we considered the Muddy River population of Virgin River chub to be a category 2 candidate species (December 30, 1982, 47 FR 58455; January 6, 1989, 54 FR 556; November 21, 1991, 56 FR 58804). At that time, category 2 candidate species were those species for which we had information indicating that listing may be appropriate, but did not have enough information on file to support issuance of a proposed rule to list. In our February 28, 1996, candidate notice of review (61 FR 7596), we discontinued the designation of category 2 candidates. The final rule listing the Virgin River chub as an endangered species (August 24, 1989; 54 FR 35305) specifically excluded the Muddy River population, because at the time it was classified as an undescribed subspecies. The Muddy River is not included in this final rule designating critical habitat for the Virgin River chub because at the time that the proposed critical habitat designation and economic analysis were prepared, we did not consider the Muddy River population to be listed. Therefore, in order to respond in a timely manner and make a final determination with regard to critical habitat for the Virgin River chub, this final rule encompasses only the mainstem Virgin River. A separate listing determination, which will include analyses on the status of the species and whether listing the fish in the Muddy River is warranted, will be prepared for this population and made available for public review and comment. The prudence and determinability of critical habitat for the Muddy River population will be addressed at that time.

The Virgin River chub was first collected in the 1870s from the Virgin River near Washington, Utah. Historically, it was collected in the mainstem Virgin River from Pah Tempe Springs, Utah, downstream to the confluence with the Colorado River in Nevada (Cope and Yarrow 1875; Cross 1975), though it may have occurred upstream of that point. Presently, the

Virgin River chub occurs within the mainstem Virgin River from Pah Tempe Springs, Utah, downstream to at least the Mesquite Diversion, located near the Arizona-Nevada border.

Adult and juvenile Virgin River chub select deep runs or pools with slow to moderate velocities containing boulders or other instream cover over a sand substrate. Generally, larger fish occupy deeper habitats; however, there is no apparent correlation with velocity. Chub are generally found in velocities ranging up to 0.76 m/s (2.5 ft/s).

Importance of the Virgin River Floodplain

Preservation of the river channel alone is not sufficient to ensure the survival and recovery of the woundfin and Virgin River chub. The Virgin River floodplain is integral to preserving the integrity of the primary constituent elements (defined below) and maintaining the natural dynamics of the Virgin River. Components of a healthy river system needed for these fish include the mainstem channel, where water is maintained most or all of the year, and upland habitats that are inundated during spring flows. Studies of the major floodplain rivers of the world have documented the value of flooded bottomlands and uplands for fish production (Welcomme 1979). For example, loss of floodplain habitats in the Missouri River Basin has reduced fish biomass production as much as 98 percent (Karr and Schlosser 1978). These seasonally flooded habitats contribute to the biological productivity of the river system by producing allochthonous (humus, silt, organic detritus, colloidal matter, and plants and animals produced outside the river and brought into the river) organic matter which provides nutrients and terrestrial food sources to aquatic organisms (Hesse and Sheets 1993). The Virgin River contains little aquatic vegetation and contains a minimum amount of autochthonous (produced within the river) organic matter. Thus, the fauna of the Virgin River is heavily dependent on allochthonous energy inputs from the floodplain that provides or supports much of the food base. This rich, terrestrial food source may enhance fish growth, fecundity, and/or survival.

Use of these inundated floodplain areas increases the energy available for spawning and is necessary for reproductive success in some species (Finger and Stewart 1987). In many cyprinid fishes, including these listed fishes, spawning is associated with seasonal rains and flooding of rivers. Flood-related changes in the river

environment induce spawning for many species, while the loss of these seasonal changes due to water withdrawals and channel constrictions may be a contributing factor limiting recruitment for these fish (Hontele and Stacey 1990).

Protection of floodplain areas also provides the spatial and temporal scope for natural physical processes, including flooding, to occur (National Research Council 1992). These processes over time shape and reshape the river, constantly redefining the physical habitat and complexity of the river. Large flow events allow the river to meander, thereby creating and recreating the mosaic of habitats necessary for the survival and recovery of the listed fishes. As long as this physical reshaping occurs, the habitat complexity and biological productivity associated with river-floodplain systems necessary for the survival and recovery of the listed fishes will be maintained.

Inundation of floodplain habitats during spring flows also provides areas with warmer water temperatures, lower water velocity habitat used for resting, and cover from predation. Recent studies in the Colorado River system show that the life histories and welfare of native riverine fishes are linked to the maintenance of a natural or historical flow regime (*i.e.*, hydrological pattern of high spring and low autumn and winter flows that vary in magnitude and duration depending on annual precipitation patterns and runoff from snowmelt) (Tyus and Karp 1989, 1990). Minckley and Meffe (1987) suggest that loss of flooding will result in extirpation of many of the native fish species in the Colorado River system.

Previous Federal Action

We listed the woundfin as endangered on October 13, 1970 (35 FR 16047), and proposed critical habitat on November 2, 1977 (42 FR 57329). However, on March 6, 1979, we withdrew the proposal for critical habitat (44 FR 12382) due to the 1978 amendments to the Act, which required proposals to be withdrawn if not finalized within 2 years. A Woundfin Recovery Plan was originally approved in July 1979 and subsequently revised on March 1, 1984.

On August 23, 1978, we proposed listing the Virgin River chub as endangered and designating critical habitat (43 FR 37668). We also withdrew this proposal (45 FR 64853; September 30, 1980), due to the 1978 amendments to the Act. On June 24, 1986, we again proposed the listing as endangered and the designation of critical habitat for the Virgin River chub (51 FR 22949). The final rule to list the Virgin River chub as endangered was

published on August 24, 1989 (54 FR 35305). We postponed the designation of critical habitat to allow time to undertake an analysis of the economic and other impacts of the designation as required by section 4(b)(2) of the Act. When the Virgin River chub was listed, the Muddy River form was specifically excluded because it was believed to be a separate, unnamed subspecies of roundtail chub (Moapa roundtail chub=*Gila robusta* spp.).

On March 18, 1994, the U.S. District Court, Colorado (Court) ordered us to designate critical habitat for the Virgin River chub, woundfin, and Virgin spinedace (*Lepidomeda mollispinis mollispinis*) (if it became listed under the Act before December 31, 1994). The Court ordered that critical habitat be proposed no later than April 1, 1995, and be finalized by December 1, 1995. We proposed the Virgin spinedace for listing as a threatened species on May 18, 1994 (59 FR 25875), but did not include critical habitat in that proposed rule because we believed that all three fish species would receive greater conservation benefit if critical habitat for all three was designated simultaneously. We published a proposed rule designating critical habitat for the three fishes on April 5, 1995 (60 FR 17296). On April 11, 1995, we entered into the Virgin Spinedace Conservation Agreement and Strategy with other Federal, State, and private local entities to eliminate or reduce impacts threatening the continued existence of the Virgin spinedace. A Virgin River Fishes Recovery Plan, including the woundfin, Virgin River chub, and Virgin spinedace, was finalized on April 19, 1995. Because of the conservation efforts being implemented on behalf of the Virgin spinedace, we withdrew the proposed listing and critical habitat designation of the Virgin spinedace on February 6, 1996 (61 FR 4401). Therefore, the Virgin spinedace is no longer included in this critical habitat designation.

Prior to publication of a final rule designating critical habitat for the woundfin and Virgin River chub, Congress enacted a moratorium on final listing actions and we postponed further actions to finalize critical habitat. Disruptions in the listing budget beginning in Fiscal Year 1995 and the moratorium on certain listing actions, including critical habitat designations, during parts of Fiscal Years 1995 and 1996 remained in effect until April 26, 1996, when President Clinton approved the Omnibus Budget Reconciliation Act of 1996 and exercised the authority that the Act gave him to waive the moratorium. By that time, we had

accrued a serious backlog of listing actions. To deal with this backlog, we developed and published Interim (61 FR 9651) and Final (61 FR 24722) Listing Priority Guidelines for Fiscal Year 1996. The guidelines described a multi-tiered approach to working through the listing backlog and identified critical habitat designations as our lowest listing priority. On December 5, 1996, we published our Final Listing Priority Guidance for Fiscal Year 1997 (61 FR 64475), which maintained this prioritization.

On May 8, 1998, we published our Final Listing Priority Guidance for Fiscal Years 1998 and 1999 (63 FR 25502). The designation of critical habitat remained our lowest priority. However, in December 1998, the 10th Circuit Court ruled that we could no longer use this justification for not designating critical habitat and ordered us to designate critical habitat for the Rio Grande silvery minnow (*Hybognathus amarus*). Shortly after that decision, the plaintiffs in the Virgin River fishes case filed a motion requesting that we be ordered to finalize critical habitat designation for the woundfin and Virgin River chub. On August 27, 1999, the U.S. District Court of Colorado ordered us to finalize critical habitat designation for the woundfin and Virgin River chub by January 20, 2000.

Critical Habitat

Section 4(a)(3) of the Act and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary of the Interior (Secretary) designate critical habitat at the time the species is determined to be endangered or threatened. As explained above, critical habitat was delayed for a variety of reasons. With this final rule, however, critical habitat is now designated for the woundfin and Virgin River chub in the Virgin River.

Definition of Critical Habitat

Critical habitat is defined in section 3(5)(A) of the Act as: (i) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection and; (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species." The term "conservation," as defined in section

3(3) of the Act, means “to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary” (*i.e.*, the species is recovered and removed from the list of endangered and threatened species).

We are required to base critical habitat decisions upon the best scientific and commercial information available (50 CFR 424.12) after taking into account economic and other impacts of such designation. In designating critical habitat for the woundfin and Virgin River chub, we have reviewed the overall approaches to the conservation of the woundfin and Virgin River chub undertaken or proposed by local, State, and Federal agencies operating within the Virgin River basin and the identified steps necessary for the species recovery outlined in the Virgin River Fishes Recovery Plan. We also have reviewed available information that pertains to the geographic range of the species in the Virgin River and the habitat requirements of each species. That information includes that received during the public comment periods associated with this rulemaking (described below).

Effect of Critical Habitat Designation

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with us.

The designation of critical habitat is one of several measures available to assist in the conservation and recovery

of a species. Critical habitat may help focus conservation activities by identifying areas that contain essential habitat features (primary constituent elements) regardless of whether the areas are currently occupied by the listed species. Such designation may alert Federal agencies, States, the public, and other organizations to the areas' importance. Critical habitat also identifies areas that may require special management considerations or protection.

The designation of critical habitat directly affects only Federal agencies, by prohibiting actions they fund, authorize, or carry out from destroying or adversely modifying critical habitat. Individuals, firms, and other non-Federal entities are not affected by the designation of critical habitat so long as their actions do not require support by permit, license, funding, or other means from a Federal agency.

An understanding of the interplay of the jeopardy and adverse modification standards is necessary to evaluate the likely outcomes of both consultation under section 7 and the environmental, economic and other impacts of any critical habitat designation. Implementing regulations (50 CFR part 402) define “jeopardize the continued existence of” (a species) and “destruction or adverse modification of” (critical habitat) in virtually identical terms. “Jeopardize the continued existence of” means to engage in an action “that reasonably would be expected * * * to reduce appreciably the likelihood of both the survival and recovery of a listed species.” “Destruction or adverse modification” means a direct or indirect alteration that “appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species.”

Common to both definitions is an appreciable detrimental effect on both survival and recovery of a listed species. Thus, for most species, actions likely to result in destruction or adverse modification of critical habitat are nearly always found to jeopardize the species concerned. Only in a few instances might an action be found to adversely modify critical habitat without also being found to jeopardize

the continued existence of the species. This situation might occur in unoccupied habitat or occupied habitat that may become unoccupied in the future. In most cases, the existence of a critical habitat designation does not materially affect the outcome of consultation. This reality is often in contrast to the public perception (and the assumption used in the previous economic analysis as described in this final rule) that the adverse modification standard sets a lower threshold than the jeopardy standard in all instances. The similar nature of the jeopardy and adverse modification standards and the application of the standards is true for the listed Virgin River fishes as well. The area of the river system being designated as critical habitat in this final rule is occupied by the listed fishes.

Section 4(b)(8) of the Act requires us to describe in any proposed or final regulation that designates critical habitat, those activities involving a Federal action that may adversely modify such habitat or those activities that may be affected by such designation. Activities that may destroy or adversely modify critical habitat include those that alter the primary constituent elements (defined below) to an extent that the value of designated critical habitat for both the survival and recovery of a listed species is reduced appreciably.

Federal activities in the Virgin River basin that may adversely modify critical habitat include actions that reduce the volume and timing of water flows, destroy or eliminate access to spawning and nursery habitat, prevent recruitment, appreciably impact food sources, contaminate the river, or significantly increase predation and competition by nonnative fishes (Table 1). Examples of such activities may include construction and operation of hydroelectric facilities, additional irrigation diversions, flood control structures, bank stabilization structures, oil and gas drilling, golf courses, and resort facilities, as well as mining, grazing, additional pumping to meet municipal water demands, and stocking or introduction of nonnative fishes.

TABLE 1.—IMPACTS OF WOUNDFIN AND VIRGIN RIVER CHUB LISTING AND CRITICAL HABITAT DESIGNATION

Categories of activities	Activities impacted by species listing only ¹	Additional activities impacted by critical habitat designation ²
Federal activities potentially affected ³ .	Activities such as construction and operation of hydroelectric facilities, flood control, additional irrigation diversions, bank stabilization, oil and gas drilling, mining, grazing, stocking or introduction of non-native fishes, that the Federal Government carries out that may jeopardize the continued existence of a listed species (only activities impacting the occupied portions of the river system).	None.
Private activities potentially affected ⁴ .	Activities such as additional irrigation diversions, flood control, bank stabilization, oil and gas drilling, mining, grazing, stocking or introduction of nonnative fishes, municipal water supplies, golf courses, resort facilities, water wheeling, water leasing, and dewatering of springs for municipal and industrial purposes that require a Federal action (permit, authorization, or funding) that may jeopardize the continued existence of the species (only activities impacting the occupied portions of the river system).	None.

¹ This column represents the impacts of the final rules listing the woundfin (October 13, 1970; 35 FR 16047) and Virgin River chub (August 24, 1989; 54 FR 35305) under the Endangered Species Act and covers land in the occupied portion of the river system only. These rules prohibited actions funded, authorized, or carried out by Federal agencies that jeopardized the continued existence of the species. "Jeopardizing the continued existence of the species," as defined by the Act, would result from an action that would appreciably reduce the likelihood of the species' survival and recovery.

² This column represents the impacts of the critical habitat designation above and beyond those impacts resulting from listing the species.

³ Activities initiated by a Federal agency.

⁴ Activities initiated by a private entity that may need Federal authorization or funding.

These types of activities have already been examined during formal and informal consultations with us since the listing of the species as endangered. No additional restrictions to these activities as a result of critical habitat designation are anticipated. For example, existing Federal activities in the area include the Pah Tempe Pipeline, Halfway Wash Project, Lake Powell Pipeline, water wheeling, water leasing, Washington Fields Pumpback, and dewatering of springs for municipal and industrial purposes.

Areas outside of critical habitat, containing one or more of the primary constituent elements, may still be important for the conservation of a species. Some areas do not contain all of the constituent elements and may have those missing elements restored in the future. Such areas may be important for the long-term recovery of the species even if they are not designated critical habitat because they may serve to maintain ecosystem integrity, thereby indirectly contributing to recovery.

In summary, designation of critical habitat focuses on the primary constituent elements within the defined areas and their contribution to the species' recovery, and includes consideration of the species' biological needs and factors that will contribute to their recovery (*i.e.*, distribution, numbers, reproduction, and viability). In evaluating Federal actions, we will consider the actions' impacts on the primary constituent elements of water, physical habitat, and biological environment (discussed below). The ability of an area to provide these

constituent elements into the future and to contribute to the recovery of the species will also be considered. The potential level of allowable impacts or habitat reduction in critical habitat will be determined on a case-by-case basis during section 7 consultation.

Primary Constituent Elements

In identifying areas as critical habitat, 50 CFR 424.12 provides that we consider those physical and biological features that are essential to a species' conservation and that may require special management considerations or protection. Such physical and biological features, as outlined in 50 CFR 424.12, include, but are not limited to, the following:

- (1) Space for individual and population growth, and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and
- (5) Habitats that are protected from disturbance or are representative of the historical geographical and ecological distributions of a species.

In determining critical habitat for the woundfin and Virgin River chub, we focused on the primary physical and biological elements essential to the conservation of each species. Prior to designating an area as critical habitat, we assessed the area for all applicable constituent elements.

The primary constituent elements of critical habitat determined necessary for

the survival and recovery of these Virgin River fishes are water, physical habitat, and biological environment. The desired conditions for each of these elements are further discussed below.

Water—A sufficient quantity and quality of water (*i.e.*, temperature, dissolved oxygen, contaminants, nutrients, turbidity, etc.) that is delivered to a specific location in accordance with a hydrologic regime that is identified for the particular life stage for each species. This includes the following:

- (1) Water quality characterized by natural seasonally variable temperature, turbidity, and conductivity;
- (2) Hydrologic regime characterized by the duration, magnitude, and frequency of flow events capable of forming and maintaining channel and instream habitat necessary for particular life stages at certain times of the year; and
- (3) Flood events inundating the floodplain necessary to provide the organic matter that provides or supports the nutrient and food sources for the listed fishes.

Physical Habitat—Areas of the Virgin River that are inhabited or potentially habitable by a particular life stage for each species, for use in spawning, nursing, feeding, and rearing, or corridors between such areas:

Woundfin

- (1) River channels, side channels, secondary channels, backwaters, and springs, and other areas which provide access to these habitats;
- (2) Areas inhabited by adult and juvenile woundfin include runs and

pools adjacent to riffles that have sand and sand/gravel substrates;

(3) Areas inhabited by juvenile woundfin are generally deeper and slower. When turbidity is low, adults also tend to occupy deeper and slower habitats;

(4) Areas inhabited by woundfin larvae include shoreline margins and backwater habitats associated with growths of filamentous algae.

Virgin River Chub

(1) River channels, side channels, secondary channels, backwaters, and springs, and other areas which provide access to these habitats; and

(2) Areas with slow to moderate velocities, within deep runs or pools, with predominately sand substrates, particularly habitats which contain boulders or other instream cover.

Biological Environment—Food supply, predation, and competition are important elements of the biological environment and are considered components of this constituent element. Food supply is a function of nutrient supply, productivity, and availability to each life stage of the species. Predation

and competition, although considered normal components of this environment, are out of balance due to nonnative fish species in many areas. Fourteen introduced species, including red shiner (*Cyprinella lutrensis*), black bullhead (*Ameiurus melas*), channel catfish (*Ictalurus punctatus*), and largemouth bass (*Micropterus salmoides*), compete with or prey upon the listed fishes. Of these, the red shiner is the most numerous and has been the most problematic for the listed fishes. Red shiners compete for food and available habitats and are known to prey on the eggs and early life stages of the listed fishes. Components of this constituent element include the following:

(1) Seasonally flooded areas that contribute to the biological productivity of the river system by producing allochthonous (humus, silt, organic detritus, colloidal matter, and plants and animals produced outside the river and brought into the river) organic matter which provides and supports much of the food base of the listed fishes; and

(2) Few or no predatory or competitive nonnative species in occupied Virgin River fishes' habitats or potential reestablishment sites.

Critical Habitat Designation

Woundfin—The area designated as critical habitat for the woundfin is the mainstem Virgin River and its 100-year floodplain (as defined below), extending from the confluence of La Verkin Creek, Utah, to Halfway Wash, Nevada, and includes 59.6 km (37.3 mi) of the mainstem Virgin River in Utah, 50.6 km (31.6 mi) in Arizona, and 29.9 km (18.6 mi) in Nevada (Table 2). This designation totals 140.1 km (87.5 mi) of the mainstem Virgin River, which represents approximately 12.5 percent of the woundfin's historical habitat. Due to the lack of historical data on the distribution of the woundfin in Arizona, this percentage is only an estimate. The area of the Virgin River designated as critical habitat consists of the remaining occupied habitat for the woundfin, and this portion of the Virgin River flows through both public and private lands (Table 3).

TABLE 2.—CRITICAL HABITAT IN KILOMETERS (MILES) FOR VIRGIN RIVER LISTED FISHES

State	Woundfin	Virgin River chub	State totals
Arizona	50.6 (31.6)	50.6 (31.6)	50.6 (31.6)
Nevada	29.9 (18.6)	29.9 (18.6)	29.9 (18.6)
Utah	59.6 (37.3)	59.6 (37.3)	59.6 (37.3)
Total	140.1 (87.5)	140.1 (87.5)	140.1 (87.5)

TABLE 3.—CRITICAL HABITAT SHORELINE OWNERSHIP IN KILOMETERS (MILES) OF CRITICAL HABITAT OCCUPIED BY THE WOUNDFIN AND VIRGIN RIVER CHUB ¹

Ownership	Woundfin and Virgin River chub	Percent
Federal	80.9 (50.5)	57.7
State	3.3 (2.1)	2.4
Private	55.9 (34.9)	39.9
Total	140.1 (87.5)	100.0

¹ Landownership was typically the same on both riverbanks. However, in several reaches (1.5 km or less), the river forms a boundary between Federal and private lands. Based upon the location of the channel, these reaches were identified as either Federal or private, not both. Therefore, distances given may be doubled to represent ownership along both riverbanks.

Virgin River Chub—The area designated as critical habitat for the Virgin River chub is the mainstem Virgin River and its 100-year floodplain (as defined below), extending from the confluence of La Verkin Creek to Halfway Wash and is identical to the designation for the woundfin (Table 2). The designation for this species represents approximately 65.8 percent of the Virgin River chub's historical habitat within the Virgin River Basin. The area of the Virgin River designated

as critical habitat consists of the remaining occupied habitat for the Virgin River chub, which flows through both public and private lands (Table 3).

The designation of critical habitat for both listed fishes includes the mainstem Virgin River currently occupied by the species. The 100-year floodplain of the Virgin River is included in the designation of critical habitat for both species, but we are designating only those portions of the 100-year floodplain that contain at least one of

the primary constituent elements for critical habitat. We chose the 100-year floodplain for several reasons. First, the implementing regulations of the Act require that critical habitat be defined by reference points and lines as found on standard topographic maps of the area. The 100-year floodplain, as defined by the Federal Emergency Management Agency (FEMA), while not included on standard topographic maps, is an area of land that would be inundated by a flood having a one

percent chance of occurring in any given year. It is the Federal standard for protection of life and property and is delineated and readily available on FEMA floodplain maps. This boundary, rather than some other delineation, was primarily chosen for two reasons: (1) The biological integrity and natural dynamics of the river system are maintained within this area (*i.e.*, allowing the river to meander within its main channel in response to large flow events, thereby recreating the mosaic of habitats necessary for the survival and recovery of Virgin River endangered fishes); and (2) conservation of the 100-year floodplain also helps protect the riparian areas and provide essential nutrient recharge to the Virgin River, which contributes to successful spawning and recruitment of endangered fishes.

Some developed lands within the 100-year floodplain boundary are not considered critical habitat because they do not contain the primary constituent elements. These include, but are not limited to, existing paved roads, bridges, parking lots, dikes, levees, diversion structures, railroad tracks, railroad trestles, water diversion canals outside of natural stream channels, active gravel pits, cultivated agricultural land, and residential, commercial, and industrial developments. These developed areas do not contain the primary constituent elements and do not furnish habitat or biological features for the listed fishes, and generally will not contribute to the species' recovery. However, some activities in these areas (if federally funded, authorized, or carried out) may affect the constituent elements of the designated critical habitat and, therefore, may be affected by critical habitat designation, as discussed later in this final rule.

Summary of Changes From the Proposed Rule

During the public comment period for the proposed rule (60 FR 17296), we received information provided by the Nevada Division of Wildlife and Bio/West, Inc. indicating that very few woundfin or Virgin River chub have ever been collected below Halfway Wash, Nevada. The backwater effect of the high water line of Lake Mead has resulted in a large amount of sand deposition below Halfway Wash. This deposition has changed the morphology of the river from a single channel to a highly braided river reach consisting of multiple rivulets, thereby reducing the gradient of the river and resulting in an extremely shallow multiple channeled habitat, not suitable for either woundfin or Virgin River chub. Based on this

information, we changed the critical habitat boundary in Nevada from the highwater level of Lake Mead to Halfway Wash. This change reduced the critical habitat in Nevada by 11.6 km (7.3 mi) from what was described in the proposed rule. Additionally, critical habitat as proposed for the Virgin spinedace (60 FR 17296) was formally withdrawn on February 6, 1996 (61 FR 4401). This action further reduced the designation by 179 km (112.0 mi).

One assumption that we used in the economic analysis was that the threshold for an action to result in an adverse modification determination was less than the threshold for an action to jeopardize the continued existence of a species. The economic impacts summarized in the proposed rule were based on this assumption. Since the development of the economic analysis and subsequent proposed rule designating critical habitat in the Virgin River basin, we have determined that, in most cases, actions that are likely to result in the destruction or adverse modification of critical habitat are nearly always found to jeopardize the continued existence of the species concerned. This determination is based, in part, on numerous consultations concerning listed fish and critical habitat designated in the 100-year floodplain in the upper Colorado River basin. These consultations have demonstrated little or no difference in the results of application of the jeopardy and adverse modification standard. We further discuss the effect of this determination in the "Consideration of Economic and Other Impacts" section of this final rule.

As originally proposed, the critical habitat designation included five separate river reaches (Maddux *et al.* 1995). We structured the proposal this way to coincide with the economic analysis and to facilitate exclusion of areas if the economic impacts of designation of critical habitat outweighed the benefits, provided that exclusion would not result in the extinction of either species. For the final designation, we have simplified the boundaries by combining all five reaches into a single section of river.

Consideration of Economic and Other Impacts

Section 4(b)(2) of the Act requires us to consider the economic and other relevant impacts in determining whether to exclude any proposed area(s) from the final designation of critical habitat. We may exclude an area from critical habitat designation if the benefits of its exclusion outweigh the benefits of its inclusion in critical

habitat, unless failure to designate the area would result in extinction of the species concerned. In 1995, we conducted an analysis on the potential economic impacts of the proposed critical habitat designation (Brookshire *et al.* 1995).

When we directed the economic analysis in 1995, we assessed the biological requirements for the recovery of the listed fishes and the regional economic activities as the basis of the analysis. The biological requirements needed to ensure recovery of the listed fishes include adjustments in water diversions in the Virgin River basin and/or mitigation of nonflow-related activities within the 100-year floodplain. We also took into consideration the effects of potential recovery efforts on future water depletions in the basin. The study region for the economic analysis included Washington and Iron Counties in Utah, Clark County in Nevada, and the portion of Mohave County in Arizona located north of the Colorado River.

We believed that Washington County, Utah, and Clark County, Nevada, would be directly affected by any actions taken by the Service on behalf of the listed fishes. These counties are presently among the fastest growing in the United States. From 1980 to 1990, Washington County's population grew by 52 percent, while Clark County's grew by 62.5 percent. Iron County, Utah, (north of Washington County) is a rapidly growing area that is economically closely linked to Washington County. Although the Virgin River does not flow through Iron County, any economic impacts on Washington County would be felt in Iron County as well. The Virgin River also flows through a portion of Mohave County in Arizona. This area has a very small population and a modest economic base.

In the 1995 economic analysis, we analyzed the economic impacts of insuring that the biological requirements of the listed fishes were met in the Virgin River Basin. Our analysis included impacts that were attributable to the listing itself, through the requirement that Federal agencies consult with us to ensure that their actions do not jeopardize the continued existence of the species. Habitat requirements of the listed fishes have been addressed by the jeopardy standard in each consultation we have done since the fishes were listed. Although we separately analyzed the incremental effects of the critical habitat designation above and beyond the effects of listing, that separation was based on the incorrect assumption that

the threshold for an action to result in an adverse modification determination is less than the threshold for determining that the action will likely jeopardize the continued existence of a species. We now recognize that our analysis should have been restricted to the specific impacts of designating critical habitat, if any, that would occur above and beyond the economic impacts of the listing, an interpretation upheld by recent case law (*New Mexico Cattle Growers Association et al. v. United States Fish and Wildlife Service, et al.*, CIV No. 98-0275 BB/DJS-ACE).

In the economic analysis, we also made an assumption that as a species moves from near extinction to recovery, the likelihood that any given project will cause adverse modification remains relatively constant, while the likelihood of jeopardy decreases. While this assumption will hold true in some circumstances, it has turned out to be a more complicated situation than initially presumed. Specifically, factors that alter the likelihood of jeopardy will only alter the likelihood of adverse modification to the extent that they affect critical habitat. However, because the adverse modification determination has its foundation in the likelihood of survival and recovery, as does the jeopardy determination, factors that increase the likelihood of adverse modification should logically increase the likelihood of jeopardy as well. In other words, adverse modification determinations will generally coincide with jeopardy determinations.

After years of conducting consultations under section 7 of the Act on actions affecting both a listed species and its critical habitat, we have learned that the two thresholds are nearly identical. In fact, biological opinions which conclude that a Federal agency action is likely to adversely modify critical habitat but not to jeopardize the species for which it is designated are extremely rare historically. Although the Service has participated in thousands of formal consultations (an estimated 900 in Fiscal Year 1999 alone), no such biological opinions have been issued in recent years. The similar application of the two standards is true in the specific case of the listed Virgin River fishes as well. In this final rule we review the results of the economic analysis in light of the correct assumption (that the thresholds for adverse modification and jeopardy are usually identical.)

Results of the Economic Analysis

Because the entire economic analysis was based on our incorrect assumption that the threshold for an action to result

in an adverse modification determination is less than the threshold for an action to jeopardize the continued existence of a species, we conclude that even the small potential impacts attributable to critical habitat designation as discussed in the economic analysis, and summarized in the proposed rule, were overstated and are primarily attributable to the listing of the woundfin and Virgin River chub.

We have concluded that no incremental economic impacts are associated with the critical habitat designation above and beyond the effects of listing the species. Therefore, we do not believe that any benefit results from excluding any area from designation, nor that any benefit of exclusion outweighs the benefit of critical habitat designation. Consequently, we have simplified the critical habitat boundaries originally described in the proposed rule by combining the areas described as five reaches into a single section of river.

Summary of Comments

On April 5, 1995, we published the proposed rule and notice of public hearing in the **Federal Register** (60 FR 17296). We solicited public comment on the proposed critical habitat designation and its associated draft economic analysis. The public comment period was open from April 5, 1995, to June 5, 1995, and was further extended by request to June 20, 1995 (60 FR 31444). During the comment period, we conducted a public hearing in St. George, Utah, on May 8, 1995. Additional notification of the public hearing and comment period was provided by letter to appropriate State agencies, county governments, Federal agencies, and other interested parties. Notice of the proposed rule, comment period, and the public hearing was also published in the *Kingman Daily Miner*, *Desert Valley Times*, *Daily Spectrum*, *Deseret News*, *Salt Lake Tribune*, *Las Vegas Review Journal*, and *Las Vegas Sun*. During the comment period, we received 14 written comment letters and 6 people testified at the public hearing. Copies of all comments were made available to the public at the Washington County Library, Utah.

Prior to the court order to finalize critical habitat designation, on August 9, 1999, we published in the **Federal Register** (64 FR 43206) a notice of availability of a draft environmental assessment on the proposed action of designating critical habitat. The public comment period was open from August 9, 1999, to September 8, 1999. Additional notification of the availability of the draft environmental

assessment and comment period was provided by letter to appropriate State agencies, county governments, Federal agencies, and other interested parties. During the comment period, we received 12 written comment letters. After a review of all comments received in response to the draft environmental assessment, on November 24, 1999, we published a notice of availability of the final environmental assessment and finding of no significant impact for designation of critical habitat for the listed fishes (64 FR 66192).

Some of the information provided during the comment periods is reflected in this final rule. A summary of the other issues raised in the written and oral comments regarding the proposed rule, economic analysis, and draft environmental assessment is provided below.

Issue 1: The critical habitat designation is based on the assumption that fish populations have declined in occupied reaches. The critical habitat designation is not warranted because numbers of individuals of these species may not have declined, although number of miles occupied has decreased.

Service Response: We disagree. At the time of listing, we determined that both the woundfin and Virgin River chub warranted protection under the Act due to a number of factors. These factors included both a decline in the occupied range of the species as well as a decline in the abundance of the species. In addition, current data, both published and unpublished, indicate that the decline in the woundfin population is continuing. Deacon (1988) showed that a substantial decline in woundfin occurred in the Virgin River above Quail Creek Reservoir and below Pah Tempe Springs between 1976 and 1993. He attributed this decline, in part, to a decrease in water quality because flows above Pah Tempe Springs were diverted at the Quail Creek Diversion. Prior to 1985, these flows had previously diluted the high saline input from Pah Tempe Springs. Holden and Zucker (1996) analyzed data from 1976-1993 that showed a very clear long-term decline of woundfin at long-term sampling stations in Utah, Arizona, and Nevada. When they plotted the data as number of woundfin caught per seining effort per year, they found a statistically significant negative trend over time ($p < 0.05$) at all stations except one during the fall season, indicating an overall decline in the woundfin population. Monitoring data from the Utah Division of Wildlife Resources (unpublished data, Recovery Team Meeting Minutes, April 29, 1999) show a substantial

decline from 1994 (total number=456 (spring), 604 (fall)) to 1999 (total number=77 (spring), 162 (fall)).

Anecdotal, historical information suggests that Virgin River chub were very abundant before the 1900s and that the abundance and range of Virgin River chub has declined substantially throughout its range in Utah, Arizona, and Nevada since white settlement and water development. Reasons for this decline are thought to be mainly habitat destruction. Habitat is degraded through dewatering of the river system such that some areas are inundated by reservoirs and other areas are completely dewatered. Also, competition from nonnative species which may prey on young life-stages of Virgin River chub may contribute to population declines (Holden 1977).

Virgin River chub have the lowest densities of any native fish in the Virgin River (Radant and Coffeen, 1986; Hardy and Addley 1994). However, observed numbers may or may not reflect actual abundance. Because Virgin River chub occupy deep holes and habitats that are often logistically difficult to sample, catch rates can be erratic and sampling can be difficult to standardize. Based on the long-term data available, Virgin River chub show a general decline in Utah, Arizona, and Nevada, particularly since the mid-1980s. Yet in some areas (below Hurricane Bridge and below Washington Diversion) numbers are stable or within the range of variability noted in the late 1970s and early 1980s (Hardy and Addley 1994). Hardy and Addley are careful to note that declines may be due to droughts and other natural climatic changes. Natural droughts are no doubt exacerbated by water development and the human need for water during these years. More recent data are being analyzed to determine the current status of Virgin River chub and to determine if declining trends continued through the late 1990s.

Issue 2: The lower portion of La Verkin Creek should be included as critical habitat for the woundfin.

Service Response: Although woundfin are occasionally collected in this reach, we are aware of no data that indicate that this area is being used for reproduction or as a nursery or that it is essential for the conservation of the species. Therefore, it is not included in this final critical habitat designation.

Issue 3: Why did we not include the Muddy River in Nevada as critical habitat for the Virgin River chub?

Service Response: Please see our discussion of the Muddy River population in the Background section of this final rule. Because the Muddy River population was not listed, critical

habitat designation is not appropriate. However, we intend to conduct a separate listing determination for the Muddy River population, which will include an analysis of the status of the species and a determination about the prudency and determinability of a critical habitat designation.

Issue 4: The area from Quail Creek Diversion to Pah Tempe Springs should be included in the critical habitat designation for the woundfin.

Service Response: While it is possible that this area was historical habitat for the Virgin River chub, woundfin have never been found in this reach. It is a high-gradient reach of the river that has gone dry annually for the past 80 years. When critical habitat was proposed, this reach of the river was left out because it was dry dammed. Since critical habitat was proposed, 3 cfs of flows have been restored to this reach of the river. However, since that time only one Virgin River chub has been collected in this reach of the Virgin River. We do not believe that this reach provides those physical or biological features essential to the conservation of either species.

Issue 5: Additional streams in Arizona should be designated as critical habitat.

Service Response: On July 24, 1985, we proposed the reintroduction of the woundfin into the Gila River drainage in Arizona and determined this population to be "nonessential experimental" in accordance with section 10(j) of the Act (50 FR 30188). The Act prohibits inclusion of nonessential experimental population areas in critical habitat designations.

Issue 6: The Virgin River in Utah was segmented into numerous reaches for designation; no segmenting was done in Nevada or Arizona.

Service Response: Please see our discussion under the "Summary of Changes to the Proposed Rule" section of this final rule.

Issue 7: How is the 100-year floodplain defined, and which parts of the floodplain are critical habitat?

Service Response: Please see the discussion under the "Critical Habitat Designation" section of this proposed rule.

Issue 8: A 10-year floodplain designation should be sufficient because the riparian community is maintained at this flow level.

Service Response: Critical habitat, among other things, is intended to identify areas that may require special management protection or consideration. Our intention in designating a portion of the floodplain as critical habitat is to encompass not only the area which provides a major source of food and nutrients to the river,

but also the area within which the river meanders. Only areas that contain at least one of the primary constituent elements are considered critical habitat. Critical habitat that would encompass a 10-year floodplain would not contain these attributes. Moreover the selection of the 100-year floodplain is consistent with and supports the goals of Virgin River Management Plan (1999) and the Proposed Virgin River Resource Management and Recovery Program, both of which contain provisions for the protection and enhancement of the 100-year floodplain.

Issue 9: Critical habitat designation is not prudent because of preparation of the Virgin River Management Plan.

Service Response: As discussed in the implementing regulations at 50 CFR 424.12, critical habitat is considered not prudent when one or more of the following situation exists:

(1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of such threat to the species, or

(2) Such designation of critical habitat would not be beneficial to the species.

In the absence of any information that indicates that critical habitat will increase the degree of threat to a species threatened by taking or other human activity, any small benefit of designation requires that the designation be found prudent. Although we supported development of the Virgin River Management Plan (1999), this plan does not increase the degree of threat to the species nor negate any benefits that may be provided to the species from critical habitat designation. Therefore, such designation must be found prudent. The extent to which this plan will protect the Virgin River is still unknown. Additionally, this plan only covers the Utah portion of the habitat. We anticipate that the Virgin River Management Plan and critical habitat designation will complement each other.

Issue 10: The Service should do NEPA on critical habitat designation.

Service Response: Please see our discussion under the "Required Determinations" section of this final rule.

Issue 11: The designation does not give full consideration to existing and future water rights.

Service Response: Critical habitat designation for the Virgin River listed fishes does not modify nor nullify any existing State water law, compact agreement, or treaty. Impacts to water development opportunities within the States are mainly attributable to the effects of listing these species. It is our

intent to fully consider State water law, interstate compact agreements, and treaties in protecting and recovering the listed fishes. As an example, we worked with the State of Utah and the WCWCD to develop a Virgin River Management Plan. This plan is intended to address both the needs for future water development and recovery of the listed fishes consistent with State water laws and other agreements.

Issues and Responses Pertaining to the Economic Analysis

Because the entire economic analysis was based on our incorrect assumption that the threshold for an action to result in an adverse modification determination is less than the threshold for an action to jeopardize the continued existence of a species, in this final rule we have concluded that even the small, potential impacts attributable to critical habitat designation as discussed in the economic analysis, and summarized in the proposed rule, were overstated and are primarily attributable to the listing of the woundfin and Virgin River chub. Although many of the points raised by various commentors on the economic analysis are no longer relevant given our conclusions about the economic impacts of critical habitat, we offer the following responses to the issues raised about the analysis.

Issue 12: The economic analysis incorrectly assumes that converting agriculture to secondary/culinary water will reduce current flows to the river.

Service Response: The economic analysis assumed that converting agricultural water to Municipal and Industrial (M&I) water might result in decreased river flows. The Utah State Water Plan for the Virgin River Basin reports water depletion figures for agricultural use to be 45 percent and for M&I use to be 63 percent. Therefore, converting agricultural use to M&I would result in a net decrease in water returns of 19 percent. Although return flows may be greater than those used in the economic analysis, the points at which these flows are returned to the river remain unknown.

Issue 13: The economic analysis did not assess impacts to Mohave County, Arizona.

Service Response: The majority of Mohave County's economic activity falls outside of the Virgin River study area, however, a small part of Mohave County, was included, mainly around the town of Litchfield, Arizona. There is little economic activity in this part of Mohave County, and it includes 0.39 percent of the total population of the study area. Consequently, the economic activity occurring in Mohave County

was shared out of the total activity for the Virgin River area based on population. This activity was then incorporated into the Clark County analysis.

Issue 14: The Washington County Water Conservancy District's (WCWCD) water plans should have been incorporated into the economic analysis, and sensitivity analyses regarding the hydrologic assumptions should have been conducted.

Service Response: The WCWCD's water plans, as represented by the report "Population Projections and Future Water Demands", prepared by Boyle Engineering (1994) for WCWCD, were, in fact, used in creating the baseline scenario. The hydrologic assumptions were structured such that the resulting economic analysis always yielded a worst-case set of economic impacts. Thus, sensitivity analysis would only lower the impacts presented in the report.

Issue 15: The Service's choice of the modeling methodology and the choice of discount rates used in the economic analysis were presented without explanation of why other models or discount rates were rejected.

Service Response: The Act requires the calculation of the economic impacts of critical habitat designation. The use of the contingent valuation method for inclusion in cost-benefit analysis is not germane. Our use of input-output analysis yielded both the direct and indirect impacts associated with recovery needs of the listed fishes. Regarding the discount rate, the discounting procedures and assumptions used represent the "industry standard." The extant economic literature clearly calls for a positive discount rate for economic analyses addressing water allocation issues.

Issue 16: Private landowner effects, water right reallocations, loss of open space, and community character should have been addressed by the economic analysis.

Service Response: There are no additive impacts to private property owners from critical habitat designation that were not present when the species were listed. If Federal funding or Federal permits are required for a private action, the Federal action agency must then consult with the Service. All transactions associated with the reallocation of water are voluntary market transactions and are not impacts of this action. The extent to which the community chooses to allow the loss of open space and changes in community character is beyond the scope of the economic analysis. It should be noted,

however, that the designation of critical habitat along another river-floodplain system, the 100-year floodplain of the Colorado River, has not precluded the setting aside of open space or development of parks and trails within the floodplain or adjacent to the river.

Issue 17: It was improper to attribute benefits of water conservation to critical habitat designation in the economic analysis.

Service Response: Water conservation will be realized, with or without the listed fishes or a critical habitat designation, by water management and conservation measures currently being implemented or planned in the future within the study area, in particular, Washington County. The economic analysis did not attribute the benefits of water conservation to listed fishes recovery and conservation. Rather, the water conservation scenario serves to demonstrate that the economic impacts of the listed fishes including designation of critical habitat can be mitigated with moderate conservation efforts.

Issue 18: The economic analysis did not document the gross overuse and waste of water in Washington County.

Service Response: The report "Population Projections and Future Water Demands", prepared by Boyle Engineering (1994) for WCWCD addressed these matters. Further analysis in these regards is beyond the scope of the economic analysis.

Issue 19: Not enough weight is given in the economic analysis to the consequences of the conversions of agricultural lands in Washington County due to critical habitat.

Service Response: The agricultural lands conversions that are projected to occur during the economic analysis study period are generated by the population growth that is projected for the region, not by the needs of the listed fishes or the designation of critical habitat. These agricultural lands are, in fact, incorporated in the baseline projection of the economy without taking the fish needs into consideration. The fish needs may accelerate the retirement of agricultural water rights in order to maintain water in the Virgin River for the listed fishes and still allow for water development to occur to meet the needs of a growing human population. This incremental retirement of water and conversion of land is attributable mainly to the listing of these fishes and was incorporated into the economic analysis.

Issue 20: The time period for the economic analysis is too short and omits the long term impacts of the designation of critical habitat.

Service Response: The study period for the economic analysis (1995–2040) was selected for the reasons described previously in this rule. By the end of this period, the population of Washington County is projected to be 380,600 people. Development projections undertaken by Boyle Engineering (1994) place the maximum population of Washington County at approximately 350,000 at population density levels consistent with the present lifestyles of the area. Thus, the population will have reached a steady state by the end of the study period used in the economic analysis and further impacts are not anticipated.

The comment further assumes that water maintained to meet the flow needs of the fish in critical habitat is lost to the national economy. While the Washington County area cannot develop this water, Las Vegas, Nevada, could use it after it reaches Halfway Wash. From a national perspective, the water may well have a higher value in Las Vegas than in Washington County, Utah, because of the larger, more diverse economy in Clark County, Nevada.

Issue 21: The retirement of agricultural lands is not correctly addressed in the economic analysis. If land retirements are market driven, then the low productivity lands will be converted first and the high productivity lands last.

Service Response: This point is correct. The economic analysis uses the average (county-level) productivity to value all agricultural lands. This approach overstates the economic impacts due to the listed fishes and critical habitat designation because the discounted present value of agricultural retirements is higher when the average land value is used. This is consistent with the approach calculating the worst-case economic impacts.

Issue 22: The economic analysis does not measure the national efficiency effects of critical habitat designation.

Service Response: In accordance with the Act and the regulations that implement it, the final designation of critical habitat is made on the basis of the best available scientific data, after taking into consideration the probable economic and other impacts of the designation upon proposed or ongoing activities. The national efficiency effects are computed and reported in the economic analysis prepared by Brookshire *et al.* 1995 (see Chapter 8) and summarized in the proposed rule. The economic analysis discusses the conditions under which the factor payments computed from the input-output analysis may be used to value the national efficiency changes.

Required Determinations

Regulatory Planning and Review

In accordance with Executive Order 12866, this action was submitted for review by the Office of Management and Budget. This final rule identifies the areas being designated as critical habitat for the woundfin and Virgin River chub. The designation will not have an annual economic effect of \$100 million. Our summary of the economic impacts of designation is discussed earlier in this final rule. This rule will not create inconsistencies with other agencies' actions. This rule will not materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients. Proposed and final rules designating critical habitat for listed species are issued under the authority of the Act. Critical habitat regulations are issued under procedural rules contained in 50 CFR part 424. Based on previous formal and informal consultations with other Federal agencies under section 7 of the Endangered Species Act, the Service has determined that there are no economic impacts of critical habitat designation above and beyond the impacts of the original listing of the species. Cases identified in the economic analysis as a potential economic impact of critical habitat designation are actions that would also result in a finding of "jeopardize the continued existence of the species" during section 7 consultation. Thus, any economic impact associated with the Virgin River chub and woundfin is one incurred by the original listing of the species, not by this critical habitat designation.

Regulatory Flexibility Act

This rule will not have a significant economic effect on a substantial number of small entities as defined under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). As explained previously in this final rule, the designation will not have economic effects above and beyond those attributed to the listing of the species. This is because the prohibition against destroying or adversely modifying critical habitat is essentially duplicative of the prohibition against jeopardizing the continued existence of the species, and therefore, there are no additional economic effects that are not already incurred by the listing of the species.

Small Business Regulatory Enforcement Fairness Act

This rule is not a major rule under 5 U.S.C. 804(2), the Small Business Regulatory Enforcement Fairness Act. This rule does not have an annual effect

on the economy of \$100 million or more. As explained in this rule, we do not believe that the designation will have economic effects above and beyond those attributed to the listing of the species. This rule will not cause a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions, because the designation will not have significant economic effects above and beyond the listing of the species. This rule does not have significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises.

*Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*)*

Based on our analysis of the economic impacts of this rule as discussed above, and in accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), this rule will not significantly affect small governments because it will not place additional burdens on small (State, local, or Tribal) governments. This rule will not produce a Federal mandate of \$100 million or greater in any year (i.e., it is not a significant regulatory action under the Unfunded Mandates Reform Act.)

Takings

In accordance with Executive Order 12630, the rule does not have significant takings implications. A takings implication assessment is not required. Although the critical habitat designation includes 55.9 kilometers of privately owned shoreline of the mainstem Virgin River, this final rule will not "take" private property rights and will not alter the value of private property. Critical habitat designation is only applicable to Federal lands, or to private lands if a Federal nexus exists (i.e., if a Federal agency authorizes or funds an action on private land). Private actions without a federal nexus on private land are not subject to any critical habitat prohibitions. Any private actions on private land that have a Federal nexus are already subject to consultation under section 7 of the Endangered Species Act. Because we have identified no economic effects of critical habitat designation above and beyond those that have accrued from the listing of these species, there are no takings implications.

Federalism

In accordance with Executive Order 13132, this final rule will not affect the structure or role of States, and will not have direct, substantial, or significant

effects on States. As previously stated, critical habitat is applicable only to Federal lands or to non-Federal lands to the extent that activities require Federal funding or permitting. Also, we have determined that additional economic impacts would not result from this critical habitat designation.

In keeping with Department of the Interior policy, we requested information from and coordinated development of the critical habitat proposal with the appropriate State resource agencies in Utah, Arizona, and Nevada. On August 9, 1999, we published in the **Federal Register** (64 FR 43206) a notice of availability of a draft environmental assessment on the proposed action of designating critical habitat. The public comment period was open from August 9, 1999, to September 8, 1999. Additional notification of the availability of the draft environmental assessment and comment period was provided by letter to appropriate State agencies, county governments, Federal agencies, and other interested parties. During the comment period, we received 12 written comment letters, which were considered in finalizing this rule.

It is our intent to fully consider State water law, interstate compact agreements, and treaties in protecting and recovering the listed fishes. As an example, we worked with the State of Utah and the WCWCD to develop a Virgin River Management Plan (1999). This plan is intended to address both the needs for future water development and recovery of the listed fishes consistent with State water laws and other agreements. The selection of the 100-year floodplain as the boundary for this critical habitat designation is consistent with and supports the goals of the Virgin River Management Plan and the Proposed Virgin River Resource Management and Recovery Program, both of which involve the State of Utah.

Civil Justice Reform

In accordance with Executive Order 12988, the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and does meet the requirements of sections 3(a) and 3(b)(2) of the Order. The final

designation of critical habitat for the woundfin and Virgin River chub has been reviewed extensively. Every effort has been made to ensure that the rule contains no drafting errors, provides clear standards, simplifies procedures, reduces burden, and is clearly written such that litigation risk is minimized.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any information collection requirements for which Office of Management and Budget approval under the Paperwork Reduction Act is required.

National Environmental Policy Act

It is our position that, outside the Tenth Circuit, we do not need to prepare environmental analyses as defined by the NEPA in connection with designating critical habitat under the Endangered Species Act of 1973, as amended. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This assertion was upheld in the courts of the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. Ore. 1995), cert. denied 116 S. Ct. 698 (1996)). However, when the range of the species includes States within the Tenth Circuit, pursuant to the Tenth Circuit ruling in *Catron County Board of Commissioners v. U.S. Fish and Wildlife Service*, 75 F.3d 1429 (10th Cir. 1996), we undertake a NEPA analysis for critical habitat designation. We have completed that analysis through an Environmental Assessment and Finding of No Significant Impact.

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951) and procedures outlined by the Department of the Interior (512 DM 2), we recognize our responsibility to work with federally recognized Tribes on a Government-to-Government basis. Moreover, the 1997 Secretarial Order on Native Americans and the Act clearly states that Tribal

lands should not be designated unless absolutely necessary for the conservation of the species. According to the Secretarial Order, "Critical habitat shall not be designated in such areas [an area that may impact Tribal trust resources] unless it is determined essential to conserve a listed species." We are unaware of any Tribal lands containing habitat essential to the conservation of the listed fishes.

References Cited

A complete list of all references cited is available upon request from the Field Supervisor, Salt Lake City Field Office (see **ADDRESSES** section).

Authors

The primary authors of this rule are Henry R. Maddux and Janet Mizzi, previously of our Salt Lake City Field Office, Patty Stevens of our Denver Regional Office, and Keith Rose of our Salt Lake City Field Office (see **ADDRESSES** section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500, unless otherwise noted.

§ 17.11 [Amended]

2. Amend section 17.11(h) by revising the entry in the critical habitat column of the entry for "Chub, Virgin River," and "Woundfin", under FISHES, to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *
(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
FISHES							
*	*	*	*	*	*	*	*
Chub, Virgin River ...	<i>Gila robusta seminuda.</i>	U.S.A. (AZ, NV, UT)do	E	361	§ 17.95(e)	NA

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*	*	*
Woundfin	<i>Plagopterus argentissimus</i> .	U.S.A. (AZ, NV, UT), Mexico.	Entire, except Gila River drainage, AZ, NM.	E	2,193	§ 17.95(e)	NA
*	*	*	*	*	*	*	*

3. Amend Section 17.95(e) by adding critical habitat of the Virgin River chub (*Gila robusta seminuda*) and woundfin (*Plagopterus argentissimus*) in the same alphabetical order as these species occur in 17.11(h).

§ 17.95 Critical habitat-fish and wildlife.

* * * * *
 (e) * * *
 * * * * *

Virgin River Chub (*Gila seminuda*)

Legal descriptions for St. George (Utah-Arizona) and Littlefield (Arizona) were obtained from the 1987 Bureau of Land Management (BLM) maps (Surface Management Status 30 x 60 Minute Quadrangle). Legal descriptions for Overton (Nevada-Arizona) were obtained from the 1989 BLM maps (Surface Management Status 30 x 60 Minute Quadrangle). The 100-year floodplain for many areas is detailed in Flood Insurance Rate Maps (FIRM) published by and available through the Federal Emergency Management Agency (FEMA). In areas where a FIRM is not available, the presence of alluvium soils or known high water marks can be used to determine the extent of the floodplain. Only areas of floodplain containing at least one of the constituent elements are considered critical habitat. Critical habitat designated for the Virgin River chub is as follows:

Utah, Washington County; Arizona, Mohave County; Nevada, Clark County. The Virgin River and its 100-year floodplain from its confluence with La Verkin Creek, Utah in T.41S., R.13W., sec.23 (Salt Lake Base and Meridian) to Halfway Wash, Nevada T.15S., R.69E., sec.6 (Salt Lake Base and Meridian).

The primary constituent elements of critical habitat determined necessary for the survival and recovery of these Virgin River fishes are water, physical habitat, and biological environment. The desired conditions for each of these elements are further discussed below.

Water—A sufficient quantity and quality of water (i.e., temperature, dissolved oxygen, contaminants, nutrients, turbidity, etc.) that is delivered to a specific location in accordance with a hydrologic regime that is identified for the particular life stage for each species. This includes the following:

1. Water quality characterized by natural seasonally variable temperature, turbidity, and conductivity;
2. hydrologic regime characterized by the duration, magnitude, and frequency of flow events capable of forming and maintaining channel and instream habitat necessary for particular life stages at certain times of the year; and
3. flood events inundating the floodplain necessary to provide the organic matter that provides or supports the nutrient and food sources for the listed fishes.

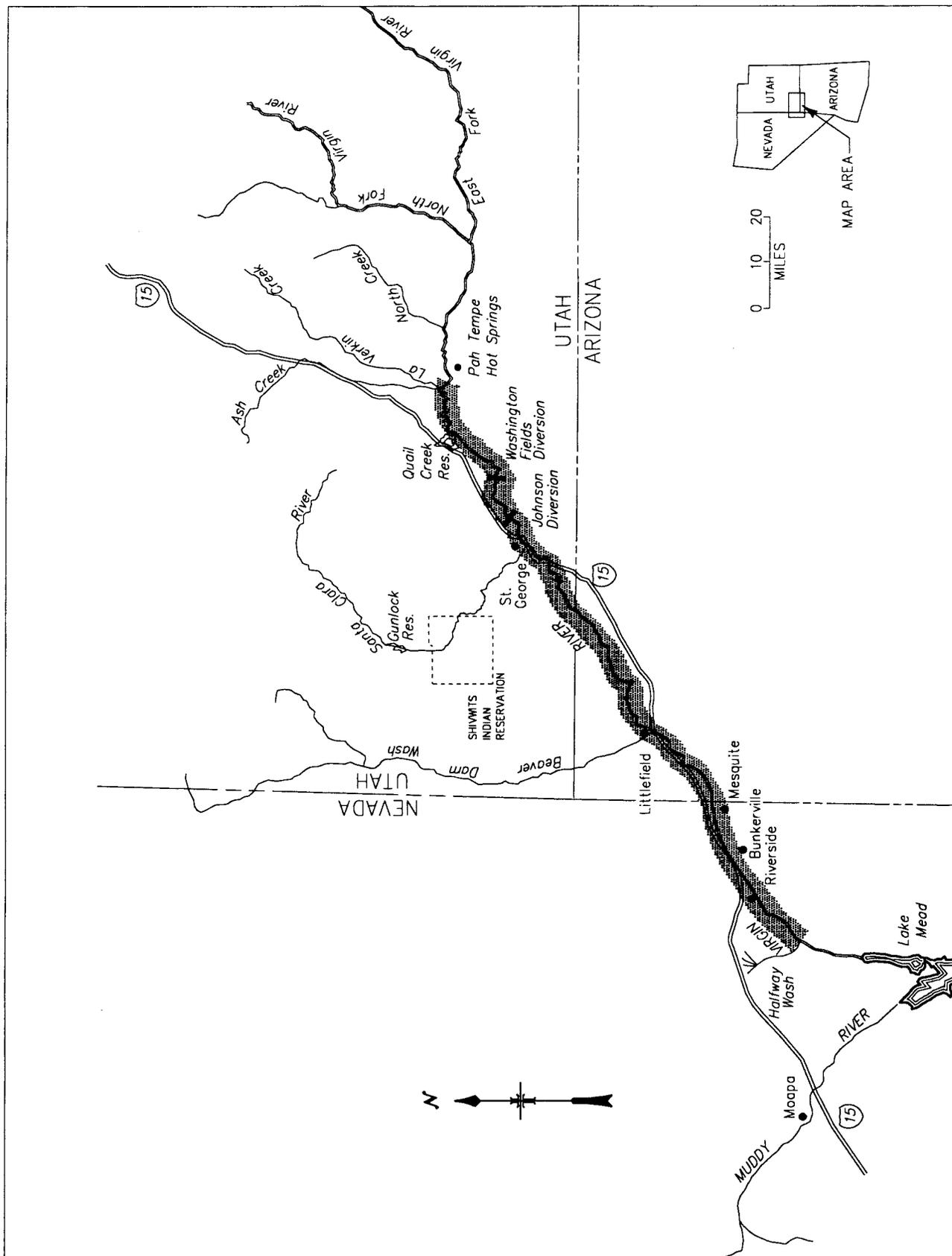
Physical Habitat—Areas of the Virgin River that are inhabited or potentially habitable by a particular life stage for each species, for use in spawning, nursing, feeding, and rearing, or corridors between such areas:

1. River channels, side channels, secondary channels, backwaters, and springs, and other areas which provide access to these habitats; and
2. areas with slow to moderate velocities, within deep runs or pools, with predominately sand substrates, particularly habitats which contain boulders or other instream cover.

Biological Environment—Food supply, predation, and competition are important elements of the biological environment and are considered components of this constituent element. Food supply is a function of nutrient supply, productivity, and availability to each life stage of the species. Predation and competition, although considered normal components of this environment, are out of balance due to nonnative fish species in many areas. Fourteen introduced species, including red shiner (*Cyprinella lutrensis*), black bullhead (*Ameiurus melas*), channel catfish (*Ictalurus punctatus*), and largemouth bass (*Micropterus salmoides*), compete with or prey upon the listed fishes. Of these, the red shiner is the most numerous and has been the most problematic for the listed fishes. Red shiners compete for food and available habitats and are known to prey on the eggs and early life stages of the listed fishes. Components of this constituent element include the following:

1. Seasonally flooded areas that contribute to the biological productivity of the river system by producing allochthonous (humus, silt, organic detritus, colloidal matter, and plants and animals produced outside the river and brought into the river) organic matter which provides and supports much of the food base of the listed fishes; and
2. few or no predatory or competitive nonnative species in occupied Virgin River fishes' habitats or potential reestablishment sites.

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Woundfin (*Plagopterus argentissimus*)

Legal descriptions for St. George (Utah–Arizona) and Littlefield (Arizona) were obtained from the 1987 BLM maps (Surface Management Status 30 x 60 Minute Quadrangles). Legal descriptions for Overton (Nevada–Arizona) were obtained from the 1989 BLM maps (Surface Management Status 30 x 60 Minute Quadrangles). The 100-year floodplain for many areas is detailed in Flood Insurance Rate Maps (FIRM) published by and available through the Federal Emergency Management Agency (FEMA). In areas where a FIRM is not available, the presence of alluvium soils or known high water marks can be used to determine the extent of the floodplain. Only areas of floodplain containing at least one of the constituent elements are considered critical habitat. Critical habitat designated for the woundfin is as follows:

Utah, Washington County; Arizona, Mohave County; Nevada, Clark County. The Virgin River and its 100-year floodplain from its confluence with La Verkin Creek, Utah in T.41S., R.13W., sec.23 (Salt Lake Base and Meridian) to Halfway Wash, Nevada T.15S., R.69E., sec.6 (Salt Lake Base and Meridian).

The primary constituent elements of critical habitat determined necessary for the survival and recovery of these Virgin River fishes are water, physical habitat, and biological environment. The desired conditions for each of these elements are further discussed below.

Water—A sufficient quantity and quality of water (*i.e.*, temperature, dissolved oxygen, contaminants, nutrients, turbidity, etc.) that is

delivered to a specific location in accordance with a hydrologic regime that is identified for the particular life stage for each species. This includes the following:

1. Water quality characterized by natural seasonally variable temperature, turbidity, and conductivity;

2. hydrologic regime characterized by the duration, magnitude, and frequency of flow events capable of forming and maintaining channel and instream habitat necessary for particular life stages at certain times of the year; and

3. flood events inundating the floodplain necessary to provide the organic matter that provides or supports the nutrient and food sources for the listed fishes.

Physical Habitat—Areas of the Virgin River that are inhabited or potentially habitable by a particular life stage for each species, for use in spawning, nursing, feeding, and rearing, or corridors between such areas:

1. River channels, side channels, secondary channels, backwaters, and springs, and other areas which provide access to these habitats;

2. areas inhabited by adult and juvenile woundfin include runs and pools adjacent to riffles that have sand and sand/gravel substrates;

3. areas inhabited by juvenile woundfin are generally deeper and slower. When turbidity is low, adults also tend to occupy deeper and slower habitats;

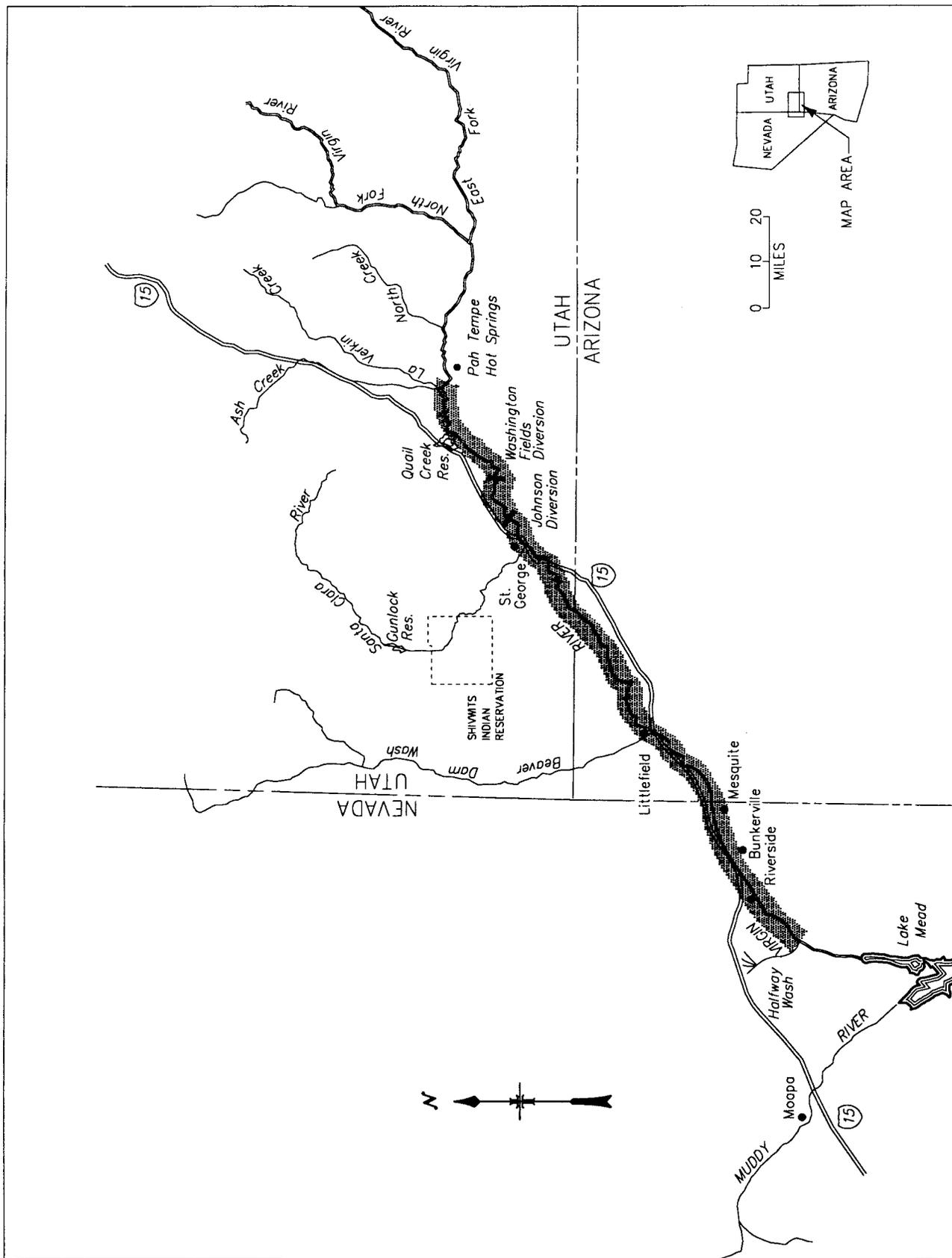
4. areas inhabited by woundfin larvae include shoreline margins and backwater habitats associated with growths of filamentous algae.

Biological Environment—Food supply, predation, and competition are important elements of the biological environment and are considered components of this constituent element. Food supply is a function of nutrient supply, productivity, and availability to each life stage of the species. Predation and competition, although considered normal components of this environment, are out of balance due to nonnative fish species in many areas. Fourteen introduced species, including red shiner (*Cyprinella lutrensis*), black bullhead (*Ameiurus melas*), channel catfish (*Ictalurus punctatus*), and largemouth bass (*Micropterus salmoides*), compete with or prey upon the listed fishes. Of these, the red shiner is the most numerous and has been the most problematic for the listed fishes. Red shiners compete for food and available habitats and are known to prey on the eggs and early life stages of the listed fishes. Components of this constituent element include the following:

1. Seasonally flooded areas that contribute to the biological productivity of the river system by producing allochthonous (humus, silt, organic detritus, colloidal matter, and plants and animals produced outside the river and brought into the river) organic matter which provides and supports much of the food base of the listed fishes; and

2. few or no predatory or competitive nonnative species in occupied Virgin River fishes' habitats or potential reestablishment sites.

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Dated: January 18, 2000.

Stephen C. Saunders,

Acting Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 00-1746 Filed 1-25-00; 8:45 am]

BILLING CODE 4310-55-P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AE23

Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Two Larkspurs From Coastal Northern California

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), determine endangered status pursuant to the Endangered Species Act (Act) of 1973, as amended for two plants—*Delphinium bakeri* (Baker's larkspur) and *Delphinium luteum* (yellow larkspur). These species grow in a variety of habitats including coastal prairie, coastal scrub, or chaparral in Sonoma and Marin Counties in northern California. Habitat loss and degradation, sheep grazing, road maintenance activities, and overcollection imperil the continued existence of these plants. Random events increase the risk of extinction to the extremely small plant populations. This rule implements the Federal protection and recovery provisions afforded by the Act for these two species.

EFFECTIVE DATE: February 25, 2000.

ADDRESSES: The complete file for this rule is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, 2800 Cottage Way, Room W2606, Sacramento, California 95825.

FOR FURTHER INFORMATION CONTACT: Kirsten Tarp, Sacramento Fish and Wildlife Office (see **ADDRESSES** section) (telephone 916/414-6464; facsimile 916/414-6486).

SUPPLEMENTARY INFORMATION:

Background

Delphinium bakeri (Baker's larkspur) and *D. luteum* (yellow larkspur) were found historically in coastal prairie, coastal scrub, or chaparral habitats. Urban development, agricultural land conversion, and livestock grazing have destroyed much of the habitat and

extirpated numerous populations of these two plants in coastal Marin and Sonoma Counties in northern California. The historical range of *Delphinium bakeri* and *D. luteum* did not extend beyond coastal Marin and Sonoma Counties.

Ewan (1942) described *Delphinium bakeri* based on type material collected by Milo Baker in 1939 from Coleman Valley, Sonoma County, California. In the most recent treatment, Warnock (1993) retained the taxon as a full species. Historically, *D. bakeri* was known from Coleman Valley in Sonoma County and from a site near Tomales in Marin County. *Delphinium bakeri* occurs on decomposed shale within the coastal scrub plant community from 120 to 150 meters (m) (400 to 500 feet (ft)) in elevation (California Natural Diversity Database (CNDDDB) 1997).

Delphinium bakeri is a perennial herb in the buttercup family (Ranunculaceae) that grows from a thickened, tuber-like, fleshy cluster of roots. The stems are hollow, erect, and grow to 65 centimeters (cm) (26 inches (in)) tall. The shallowly five-parted leaves occur primarily along the upper third of the stem and are green at the time the plant flowers. The flowers are irregularly shaped. The five sepals (outer most whorl or set of floral parts) are conspicuous, bright dark blue or purplish, with the rear sepal elongated into a spur. The inconspicuous petals occur in two pairs. The lower pair is oblong and blue-purple; the upper pair is oblique and white. Seeds are produced in several dry, many-seeded fruits, which split open at maturity on only one side (*i.e.*, several follicles). *Delphinium bakeri* flowers from April through May (Warnock 1993).

Habitat conversion, grazing, and/or roadside maintenance activities have extirpated occurrences of *Delphinium bakeri* in Marin and Sonoma Counties (California Department of Fish and Game (CDFG) 1994). The CDFG (1994) also reported the species is declining. The only known remaining population, with a total of about 35 plants, is found on a steep road bank on private and county land in Marin County that is threatened by road work, overcollection, and sheep grazing. Because of its extreme range restriction and small population size, the plant is also vulnerable to extinction from random natural events, such as fire or insect outbreaks (CNDDDB 1997).

Heller (1903) described *Delphinium luteum* based on type material collected from "grassy slopes about rocks, near Bodega Bay, along the road leading to the village of Bodega" in Sonoma County. Although Jepson (1970)

reduced *D. luteum* to a variety of *D. nudicaule*, it is currently recognized as a full species (Warnock 1993). *Delphinium luteum* occurs on rocky areas within coastal scrub plant community, including areas with active rock slides, from sea level to 100 m (300 ft) in elevation (Guerrant 1976).

Delphinium luteum is a perennial herb in the buttercup family (Ranunculaceae) that grows from fibrous roots to 56 cm (22 in) tall. The leaves are mostly basal, fleshy, and green at the time of flowering. The flowers are cornucopia-shaped. The five conspicuous sepals are bright yellow, with the posterior sepal elongated into a spur. The inconspicuous petals occur in two pairs. The upper petals are narrow and unlobed; the lower petals are oblong to ovate. The fruit is a follicle. *Delphinium luteum* flowers from March to May.

Never widely distributed, historical populations of *Delphinium luteum* have been partially or entirely extirpated by rock quarrying activities, overcollecting, residential development, and sheep grazing, resulting in the species now being even more narrowly distributed (Guerrant 1976; CNDDDB 1998; Betty Guggolz, Milo Baker Chapter, California Native Plant Society (CNPS), pers. comm. 1995). The CDFG (1994) reported the species is declining. The two remaining populations near Bodega, both on private land, total fewer than 50 plants. Development, overcollection, and sheep grazing threaten the remaining two populations. Because of its extreme range restriction and small population size, the plant is also vulnerable to extinction from random natural events, such as fire or insect outbreaks (CNDDDB 1998; B. Guggolz, pers. comm. 1995).

Previous Federal Action

Federal Government actions on the two species began as a result of section 12 of the Act (16 U.S.C. 1531 *et seq.*), which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct in the United States. This report, designated as House Document No. 94-51, was presented to Congress on January 9, 1975, and included *Delphinium bakeri* and *D. luteum* as endangered. We published a notice on July 1, 1975 (40 FR 27823) of our acceptance of the report of the Smithsonian Institution as a petition within the context of section 4(c)(2) (petition provisions are now found in section 4(b)(3) of the Act) and our intention to review the status of the plant taxa named in the report. The above two taxa were included in the