

whooping cranes in the wild in the experimental population area for educational purposes, scientific purposes, the enhancement of propagation or survival of the species, and other conservation purposes consistent with the Act and in accordance with applicable State fish and wildlife conservation laws and regulations.

(4) \* \* \*

(ii) Relocate a whooping crane that has moved outside the Kissimmee Prairie or the Rocky Mountain range of the experimental population when removal is necessary or requested;

\* \* \* \* \*

(8) Geographic areas that nonessential experimental populations inhabit include the following—

(i) The entire State of Florida. The reintroduction site will be the Kissimmee Prairie portions of Polk, Osceola, Highlands, and Okeechobee counties. Current information indicates that the Kissimmee Prairie is within the historic range of the whooping crane in Florida. There are no other extant populations of whooping cranes that could come into contact with the experimental population. The only two extant populations occur well west of the Mississippi River. The Aransas/Wood Buffalo National Park population nests in the Northwest Territories and adjacent areas of Alberta, Canada primarily within the boundaries of the Wood Buffalo National Park, and winters along the Central Texas Gulf of Mexico coast at Aransas National Wildlife Refuge. Whooping cranes adhere to ancestral breeding grounds leaving little possibility that individuals from the extant population will stray into Florida or the Rocky Mountain Population. Studies of whooping cranes have shown that migration is learned rather than innate behavior. The experimental population released at Kissimmee Prairie is expected to remain within the prairie region of central Florida; and

(ii) The State of Colorado, Idaho, New Mexico, Utah, and the western half of Wyoming. Birds in this area do not come in contact with whooping cranes of the Aransas/Wood Buffalo Population.

\* \* \* \* \*

#### § 17.95 [Amended]

4. Section 17.95(b) is amended by deleting the maps and descriptions of critical habitat for the whooping crane in the States of Idaho, Colorado and New Mexico.

Dated: October 20, 1995.

George T. Frampton, Jr.,  
Assistant Secretary for Fish and Wildlife and Parks.

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#### 50 CFR Part 17

RIN 1018-AC53

#### Endangered and Threatened Wildlife and Plants; Withdrawal of the Proposed Rule to List the Fish Virgin Spinedace as Threatened and Withdrawal of the Proposed Rule to Designate Critical Habitat for the Virgin Spinedace

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule; withdrawal.

**SUMMARY:** The U.S. Fish and Wildlife Service (Service) withdraws the May 18, 1994, proposed rule (59 FR 25875) to list the fish Virgin spinedace (*Lepidomeda mollispinis mollispinis*) as a threatened species and also withdraws the portion of the April 5, 1995, proposed critical habitat designation for the Virgin spinedace (60 FR 17296). The Virgin spinedace, a small fish in the minnow family (Cyprinidae), is endemic to the Virgin River drainage of southwestern Utah, northwestern Arizona, and southeastern Nevada. The Virgin spinedace was once common to abundant in clear water tributaries of the Virgin River and in some mainstem reaches above Pah Tempe (La Verkin) Springs near Hurricane, Utah. It was also occasionally found in most reaches of the river below Pah Tempe Springs, with the exception of the mouth of Quail Creek and the mouth of Beaver Dam Wash, where Virgin spinedace were once reported common. Approximately 37 to 40 percent of Virgin spinedace historical habitat has been lost due to human impacts which include the introduction of nonnative fishes, dewatering for agricultural purposes, mining, and urban development. These impacts have resulted in habitat fragmentation and continue to threaten the existence of the Virgin spinedace.

Subsequent to publication of the proposed rule, the State of Utah developed the Virgin Spinedace Conservation Agreement and Strategy (Agreement) for the Virgin spinedace to ensure that conservation measures and recovery actions needed for the fish's continued existence are initiated and carried out. In June 1995, the eight signatory parties to the Agreement began implementation of the Agreement

and its associated strategy to reduce threats to the Virgin spinedace that otherwise would warrant its listing as a threatened species under the Endangered Species Act of 1973, as amended (Act). The Agreement will reestablish and maintain water flows required for the Virgin spinedace and will restore 50 percent of its lost historical habitat. On April 10, 1995, the Service's Salt Lake City Field Office received a letter from one of the petitioners, the Bonneville Chapter of the American Fisheries Society, stating that with the implementation of the Agreement the Virgin spinedace no longer warrants listing. The other petitioner, Southern Utah Wilderness Alliance, still supports listing of the Virgin spinedace because of concerns that the Agreement will not be fully implemented or recover the species.

**ADDRESSES:** The complete file for this rule is available for inspection, by appointment, during normal business hours at the Utah Field Office, Ecological Services, U.S. Fish and Wildlife Service, 145 East 1300 South, Suite 404, Salt Lake City, Utah 84115. The complete file for this rule also will be available for public inspection at the Washington County Public Library in St. George, Utah.

**FOR FURTHER INFORMATION CONTACT:** Mr. Robert D. Williams, Assistant Field Supervisor, Salt Lake City Field Office, at the above address, telephone (801) 524-5001.

#### SUPPLEMENTARY INFORMATION:

##### Background

The Virgin spinedace belongs to one of three genera of a unique, endemic tribe of western cyprinids, the Plagopterini. Adult Virgin spinedace measure 80-120 mm (3-5 in) in length and have a broad, flat silvery body with a brassy sheen. They are usually found in clear, cool streams that are interspersed with pools, runs, and riffles. Rinne (1971) found that Virgin spinedace inhabited pools, often with undercut banks, debris, or boulders. The Virgin spinedace feeds primarily on aquatic insect life (Rinne 1971, Gregor and Deacon 1988, Angradi *et al.* 1991), and their feeding habits are dependent upon the types of food available. The Virgin spinedace is endemic to the Virgin River drainage, a tributary to the Colorado River of southwestern Utah, northwestern Arizona, and southeastern Nevada. The historical distribution of the Virgin spinedace is not well documented (Valdez *et al.* 1991). The species was probably common to abundant in tributaries of the Virgin River and some mainstem reaches above

Pah Tempe (La Verkin) Springs, near Hurricane, Utah (Holden *et al.* 1974). The Virgin spinedace was probably less abundant in the mainstem Virgin River below Pah Tempe Springs, with the exception of the mouths of Quail Creek and Beaver Dam Wash, where the Virgin spinedace was a common member of the fauna.

The proposal (59 FR 25875; May 18, 1994) to list the Virgin spinedace as threatened and a subsequent proposal (60 FR 17296; April 5, 1995) to designate critical habitat were based on the decline in the range of and continued threats to the species. The present distribution of Virgin spinedace is substantially smaller than its former range, with approximately 37 to 40 percent (83 kilometers (km) or 52 miles (mi)) of its habitat lost due to human impacts (Valdez *et al.* 1991, Addley and Hardy 1993). Much of this habitat loss has occurred recently. Approximately 60 percent of the habitat loss has occurred since the 1950's and is directly related to construction of dams and diversions in the Virgin River Basin (Dr. Craig Addley, Utah State University, *in litt.* 1994). Stream reaches that historically contained Virgin spinedace (but are now dewatered) include portions of the East Fork of Beaver Dam Wash, the Santa Clara River downstream of Gunlock Reservoir, Mogatsu Creek, Ash Creek near Toquerville, Leeds Creek, North Creek, and the mainstem Virgin River between Quail Creek Diversion and Pah Tempe Springs.

#### Previous Federal Action

On June 15, 1992, the Fish and Wildlife Service (Service) received a petition from the Bonneville Chapter of the American Fisheries Society to list the Virgin spinedace as an endangered species. On August 17, 1992, another petition to list the Virgin spinedace was received from the Southern Utah Wilderness Alliance. On March 16, 1993, the Service published notice (58 FR 14169) of a finding that the petitions presented substantial information indicating that listing of the Virgin spinedace may be warranted and requested comments and biological data on the status of the fish. On May 18, 1994, the Virgin spinedace was proposed for listing as a threatened species (59 FR 25875). The Service requested independent review of the listing package from three fish specialists. All three reviewers supported the listing of the Virgin spinedace as threatened and that the Service's finding was based on the best scientific information available. On April 5, 1995, the designation of critical

habitat was proposed for the Virgin spinedace, Virgin River chub (*Gila seminuda*), and woundfin (*Plagopterus argentissimus*) (60 FR 17296). On April 11, 1995, the Service signed the Agreement developed by the State of Utah.

#### Summary of Comments and Recommendations

In accordance with the July 1, 1994, Federal Register notice (59 FR 34270) which announced a statement of interagency cooperative policy for peer review of activities under the Act (16 U.S.C. 1531 *et seq.*), independent peer review was requested on the proposed listing of the Virgin spinedace as a threatened species. This review process is intended to complement the Service's existing public review process in listing and recovery, and to ensure that the best biological and commercial information is being used in the decision making process. According to policy, when listing a species the Service is required to (1) solicit the expert opinions of three appropriate and independent specialists regarding pertinent scientific or commercial data and assumptions relating to the taxonomy, population models, and supportive biological and ecological information for species under consideration for listing; (2) summarize in the final decision document (rule or notice of withdrawal) the opinions of all independent peer reviewers received on the species under consideration; and (3) include all such reports, opinions, and other data in the administrative record of the final decision.

The Service requested assistance in reviewing the listing package on the Virgin spinedace from three independent fish specialists. Specific questions addressed in the review included: (1) Does the listing package present the scientific information correctly?; and (2) Is the listing package biologically supportable? All three reviewers supported the listing of the Virgin spinedace as a threatened species, and agreed that the listing package presented the best scientific information available and that it was biologically supportable. Subsequent to the peer review process, the State of Utah established the Agreement for the Virgin spinedace, including conservation measures and recovery actions that will ensure the fish's survival.

In the May 18, 1994, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule to list the Virgin spinedace as a threatened

species. Appropriate Federal and State agencies, county governments, scientific organizations, and other interested parties were contacted and requested to comment. A notice inviting general public comment on the proposed listing was published in the following newspapers: *Salt Lake Tribune/Desert News*, *St. George Daily Spectrum*, *Las Vegas Review Journal/Las Vegas Sun*, *Kingman Daily Miner*, and the *Mesquite Desert Valley Times*. Requests to hold public hearings on the proposed listing were received from the Washington County Water Conservancy District, and from Congressman James H. Hansen's office (1st District, Utah). On June 30, 1994, the Service published a notice in the Federal Register (59 FR 33724) announcing the public hearing and extending the comment period until August 17, 1994. In addition to the Federal Register notice and announcements in newspapers, a letter was sent to all interested parties announcing the date of the public hearing and the extended closing date for public comment. The Service conducted a public hearing on July 13, 1994, in St. George, Utah and 19 parties presented testimony.

During the comment period, the Service received both written and oral comments from 41 parties, including the testimony presented at the public hearing. Comments were received from 1 Federal agency, 4 State agencies, 11 city or county governments, 22 private individuals or groups, and 3 representatives of the scientific community. Of the 41 comments received, 8 supported the proposed listing of the Virgin spinedace as a threatened species, 32 opposed the listing, and 1 comment was neutral. Written and oral statements from both the public hearing and the comment period are combined in the following discussion. In addition, information submitted by the commentators has been incorporated into this notice of withdrawal. Comments questioning the rule have been organized into specific issues. These issues and the Service's response to each are summarized as follows:

*Issue 1:* A number of respondents objected to the Service's failure to designate critical habitat concurrently with the listing of the Virgin spinedace, claiming that the requirements set forth in the Act for not designating critical habitat at the time of listing have not been met.

*Service Response:* Section 4(a)(3) of the Act requires that to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time a species is determined to be

endangered or threatened. Service regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat at the time when a species is proposed for listing is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other human activity, and it is expected that identification of critical habitat will increase the degree of threat to the species; or (2) such designation of critical habitat is not beneficial to the survival of the species. The Service found that designation of critical habitat for the Virgin spinedace was not prudent at the time of its original listing (May 18, 1994). The primary intent of the Act is to provide for the conservation and continued existence of wild populations of endangered and threatened species and the ecosystems upon which they depend. The Service believed that an aquatic ecosystem approach to enacting conservation measures for the Virgin spinedace, the woundfin, and the Virgin River chub at the same time would provide greater benefit to each species than treating each species separately. Thus, the Service proposed designation of critical habitat for all three fishes in the same notice since their historical ranges overlap, their life history requirements are similar, the threats to each species are similar, and the economic consequences of designating critical habitat will be similar. On April 5, 1995, the Service proposed the designation of critical habitat for the woundfin, Virgin River chub, and Virgin spinedace (60 FR 17296) with the intention of finalizing this designation by no later than December 1, 1995. Concurrent with this notice withdrawing the proposed listing of the Virgin spinedace, the Service also withdraws that portion of designated critical habitat identified for the species in the April 5, 1995, Federal Register notice.

*Issue 2:* A number of commentors (32) stated that there was insufficient scientific evidence to justify the listing of the Virgin spinedace, and that there were not enough data available to document a true decline in population numbers.

*Service Response:* Section 4(a)(1) of the Act and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the following five factors: (1) The present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization for commercial, recreational, scientific, or

educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; and (5) other natural or human caused factors affecting its continued existence. Section 4 of the Act also states that after conducting a status review of a species, the determination to list a species must be based on the best available scientific and commercial information. The Service completed a status review of the Virgin spinedace when preparing the proposed rule and found evidence of real threats to the species. Valdez *et al.* (1991) and Addley and Hardy (1993) published their findings on the population status and distribution of the Virgin spinedace and their data were cited by the Service as support for the proposed listing of the Virgin spinedace as a threatened species.

*Issue 3:* Several commentors stated that listing was not warranted given the current conservation efforts, including the Agreement being developed by the State of Utah, and supported this Agreement in lieu of listing the species.

*Service Response:* The Service participated in the development of the Agreement and believes that its implementation will assist in the recovery of the species. Conservation measures outlined in the Agreement should help reduce actual and potential threats to the species. Therefore, the listing of the Virgin spinedace is not warranted at this time.

*Issue 4:* Several commentors stated that there is no evidence that habitat loss, a primary threat to the species, is still occurring and stated that the loss of historical habitat occurred decades ago.

*Service Response:* There are numerous reaches of the Virgin River within Virgin spinedace historical or current habitat that support existing or proposed commercial and noncommercial activities that may result in future habitat losses to the species. Examples of Federal projects which could have adverse effects upon Virgin spinedace habitat are: the Sandstone Reservoir, 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. An evaluation of habitat loss over time has shown that approximately 68 percent of Virgin spinedace habitat loss has occurred in the last 45 years (Dr. Craig Addley, *in litt.* 1994). Actions, when implemented as part of the Agreement for the Virgin spinedace, will result in restoration of at least 50 percent of its historic habitat. If future projects impact Virgin spinedace habitat, the Agreement puts in place a mechanism for habitat restoration, thus

preventing further decrease in Virgin spinedace habitat.

*Issue 5:* One respondent stated that the decline in Virgin spinedace populations are a natural occurrence due to long term climatic changes. Therefore, the species should be allowed to go extinct since it cannot adapt to changes in the river system.

*Service Response:* In several reaches of the Virgin River where good habitat remains, there are healthy populations of Virgin spinedace. In the reaches of the river where habitat has been degraded, Virgin spinedace populations have declined. These declines are the result of direct threats to the species rather than due to "long term climatic changes."

*Issue 6:* One commentor stated that listing the Virgin spinedace would compromise efforts to manage and develop the region's water resources in compliance with State and Federal laws. Also, the "taking" provisions of section 9 of the Act unnecessarily undermine the efforts of local water users and State authorities to manage the waters of the State for the benefit of Utah citizens.

*Service Response:* The listing of the Virgin spinedace as a threatened species would not have modified or nullified any existing State or Federal water laws, nor would it have "taken" any existing water rights. The Service will consider State and Federal water laws and local water user rights when protecting and recovering the Virgin spinedace. Protective measures for listed species are provided for under sections 7 and 9 of the Act. The section 9 "takings" provisions of the Act are not intended to undermine State and local water usage, but to insure that species are not harmed. Under certain circumstances, section 10(a)(1)(B) of the Act allows permits to be issued to conduct otherwise prohibited activities involving listed species. Such permits provide for incidental taking of a species when in connection with an otherwise lawful activity.

*Issue 7:* One commentor stated that there is no evidence that Virgin spinedace occurred north of the Narrows on the Virgin River's North Fork or east of Parunaweap Falls on the Virgin River's East Fork. Thus, there is no evidence of Virgin spinedace habitat occurring in Kane County.

*Service Response:* There is no evidence that Virgin spinedace occurred north of the Narrows in the North Fork or east of Parunaweap Falls in the East Fork of the Virgin River. However, the Virgin spinedace is found in Shunes Creek, a tributary to the North Fork, and also in the East Fork from Parunaweap Falls to the confluence with the North

Fork. Both of these reaches are in Kane County, Utah.

*Issue 8:* Several commentors stated that, historically, many stretches of the Virgin River dried up during summer, including a stretch of the Virgin River's East Fork near Mt. Carmel Junction, and the Santa Clara River downstream of the St. George-Clara diversion. Consequently, there should be no instream flow requirements for these reaches of the river.

*Service Response:* Virgin spinedace historically did not occur in the Virgin River's East Fork near Mt. Carmel Junction. Listing of the species would not have dictated instream flow requirements for this juncture of the river. All instream flow requirements are addressed in the Agreement.

*Issue 9:* Several commentors stated that more research needed to be conducted on the Virgin spinedace before a decision to list the species can be made. Specifically, if the species has declined in numbers, there is insufficient evidence documenting the reasons for this decline. They also stated that no current threats to the species have been identified by researchers.

*Service Response:* Listing the Virgin spinedace would not have precluded further research efforts. Valdez *et al.* (1991) reported a 40 percent decline in Virgin spinedace habitat along with a reduction in population numbers. Declines in the numbers of Virgin spinedace have resulted from numerous threats to the species. Section 4 of the Act states that the determination to list a species must be based on the best available scientific and commercial information after conducting a status review of the species. The Service completed this review when preparing the proposed rule and found evidence of real threats to the species. Two recent publications (Valdez *et al.* 1991, Addley and Hardy 1993) assessed the population status and distribution of the Virgin spinedace. The Service relied upon this information, in part, to support the proposed listing of the Virgin spinedace as a threatened species.

*Issue 10:* One commentor suggested that, in lieu of listing, the Service should participate in the *Virgin River Management Plan* (Plan), a cooperative multiagency agreement calling for the maintenance of adequate water levels in the Virgin River, as set forth by the Washington County Water Conservancy District.

*Service Response:* The Plan addresses only a portion of Virgin spinedace habitat, since it was developed primarily for the Virgin River chub and woundfin habitat in the mainstem

Virgin River. Much of the Virgin spinedace habitat occurs in tributaries and subtributaries of the Virgin River which were not addressed in the Plan.

*Issue 11:* Several commentors stated that the results of the studies cited in the proposed rule are inconsistent, and that the Valdez *et al.* (1991) and Addley and Hardy (1993) studies indicate an upward trend in the Virgin spinedace population.

*Service Response:* Fish populations are subject to natural fluctuations resulting from many environmental factors. Populations fluctuate seasonally with highly inflated numbers of fishes following the breeding season. Sampling for the two studies was conducted at different times of the year. Addley and Hardy (1993) included larval Virgin spinedace in their population counts while Valdez *et al.* (1991) did not. When these differences are taken into account, the results from the two studies are nearly identical.

*Issue 12:* Several commentors disagreed that dewatering of portions of the Virgin River was a threat to the Virgin spinedace. They stated that water diverted for irrigation is actually the key to maintaining water further downstream during dry years because return flows feed the river downstream late in summer and early fall, thus enhancing Virgin spinedace habitat.

*Service Response:* Numerous reports (Cross 1975, Valdez *et al.* 1991, Addley and Hardy 1993) have cited dewatering as a threat to the Virgin spinedace. The reestablishment and maintenance of flows is identified as one of the conservation measures to be implemented by the Agreement. Water diverted for irrigation frequently results in complete dewatering of portions of Virgin spinedace habitat. Historically, when these reaches dried up, Virgin spinedace migrated to more suitable habitats. Today, numerous dams and diversions isolate populations of Virgin spinedace, making them vulnerable to the effects of dewatering. This often translates into a high mortality rate. Return flows from agricultural sources do augment summer flows in the river, but these sources do not eliminate the negative impacts of upstream dewatering.

*Issue 13:* Several respondents believe that habitat degradation from livestock grazing is not a threat to the species, since the effects of grazing have been reduced since the early 1930's and 1940's.

*Service Response:* Livestock grazing has decreased along the Virgin River since the early 1930's and 1940's, but there are still 18,000 head of cattle in Washington County alone. Cattle utilize

riparian areas, resulting in degraded Virgin spinedace habitat through devegetation, stream bank erosion, siltation, and degraded water quality. Valdez *et al.* (1991) identified 10 of 13 populations of Virgin spinedace that are potentially threatened by grazing within riparian areas and by runoff from nearby cattle feed lots. The Agreement includes habitat enhancement projects such as: constructing and maintaining boundary-line fences between Federal and private lands in order to control unauthorized grazing; establishing intensive grazing management programs for Federal lands along streams; and developing conservation easements and barriers within the Virgin River floodplain to help reduce additional agricultural impacts.

*Issue 14:* One respondent recommended that the final rule include a special rule allowing for take in accordance with applicable State fish and wildlife conservation laws, and with regulations under the Act for scientific purposes, enhancement of propagation or survival of the species, or other conservation purposes as specified in 50 CFR 17.44. The respondent believed that a special rule would provide greater management flexibility in the recovery of threatened species.

*Service Response:* The Act allows the Service to write special rules for the conservation of threatened species. The withdrawal of the proposed rule to list the Virgin spinedace as a threatened species precludes any need for a special rule.

*Issue 15:* Several respondents believed that preserving water for the commercial growth of the St. George area is more advantageous than preserving a small fish in southern Utah.

*Service Response:* Section 2(a) of the Act states that wildlife and plant species have intrinsic values (aesthetic, ecological, educational, historical, recreational, and scientific) that are worth preserving for the benefit of all citizens. The signing of the Agreement puts in place a mechanism that sufficiently protects the Virgin spinedace and addresses future water needs. Therefore, the listing of the Virgin spinedace is not presently warranted.

*Issue 16:* Several respondents stated that listing the Virgin spinedace would diminish the water supply now available for agriculture. This, in turn, would decrease the value of private lands, and increase the legal and administrative costs associated with obtaining permits from the Federal bureaucracy. These effects would

increase economic and social hardships for the cities of Santa Clara and Virgin. Additionally, the respondents stated this would cause a cultural decay for the city of Santa Clara, whose orchards and tree-lined streets (a city hallmark) would receive decreased amounts of irrigation water.

*Service Response:* Under the Act, the Secretary shall make determinations on the listing of species solely on the basis of the best available scientific and commercial information without reference to economic or other social impacts. The listing of the Virgin spinedace would not affect existing water rights.

#### Summary of Factors Affecting the Species

After a thorough review and consideration of all available information, coupled with the development of the Agreement, the Service has concluded that the proposed rule to list the Virgin spinedace and the corresponding portion of the proposed rule to designate critical habitat should be withdrawn. Section 4(a)(1) of the Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to or deleting species from the Federal Lists. The Service finds that evidence now available, as discussed below, does not justify a final determination to add the spinedace to the List. A species may be added or removed from the Lists based upon one or more of the five factors described in section 4(a)(1) of the Act. These five listing criteria are as follows:

*A. The present or threatened destruction, modification, or curtailment of its habitat or range.* While much Virgin spinedace habitat has been destroyed, modified, and/or curtailed in the past, the Agreement calls for enhancement and maintenance of Virgin spinedace habitat. Habitat enhancement will be implemented for approximately 25 km (16 mi) of occupied habitat. Enhancement projects will focus on those specific factors that have contributed to habitat degradation such as agricultural activities, recreational use of riparian zones, and activities that affect water quality. Enhancement projects will include maintenance and construction of boundary-line fences between Federal and private lands in order to control unauthorized grazing and recreational use along the riparian zones. Grazing management programs will be implemented for Federal lands bordering streams. Conservation easements will be developed for the

Virgin River floodplain to further reduce habitat degradation. Additionally, mitigation for acceptable future projects in occupied habitat will generally be based on a one to one replacement of historical habitat.

*B. Overutilization for commercial, recreational, scientific, or educational purposes.* Historically, Virgin spinedace were used as bait fish in the lower Colorado River (Miller 1952). However, overutilization is not reported as a factor in the continuing decline of Virgin spinedace populations, and recent studies (Valdez *et al.* 1991, Addley and Hardy 1993) give no indication that overutilization has negatively impacted Virgin spinedace populations.

*C. Disease or predation.* The introduction of nonnative fishes to the Virgin River system has contributed to the decline of native fish populations (Hardy 1991, U.S. Fish and Wildlife Service 1993). The Agreement specifically addresses this issue. One of the five conservation actions to be implemented by the Agreement is to selectively control nonnative fishes. Management and control of nonnative fishes will focus on stocking and introduction procedures, as well as control and/or eradication of nonnative fishes in the Virgin River basin. Specific management actions to remove the threats to Virgin spinedace associated with nonnative species will be developed on a reach by reach basis. Stocking procedures have been implemented by the Utah Division of Wildlife Resources and the Nevada Division of Wildlife that include prohibitions on: stocking of rainbow trout to establish new self-sustaining populations; and stocking of brown trout, brook trout, and channel catfish. Stocking all nonindigenous aquatic species is prohibited by respective State regulations or is recommended for prohibition by the Colorado River Wildlife Council. In addition, there are restrictions on the stocking of largemouth bass and bluegill sunfish in standing water impoundments, including existing mainstem reservoirs, and other isolated ponds and reservoirs. Species targeted for control and/or eradication include rainbow trout in the upper reaches of Beaver Dam Wash (October 1995); green sunfish in the Santa Clara River; and the red shiner in the mainstem Virgin River below the Washington Fields Diversion (October 1995). The feasibility of engineering fish barrier structures to control nonnative fish is also being developed.

In addition to introduced fish species, several parasites have invaded the Virgin River system, including the Asian tape worm (*Bothriocephalus*

*acheilognathi*) which was introduced to the Virgin River system in 1986. This parasite weakens fish, making the fish more vulnerable to stressful environmental conditions such as low water levels. The Asian tape worm has not, as yet, been identified as a parasite to the Virgin spinedace, but it has been reported from other native fishes in the Virgin River. Addley and Hardy (1993) have identified an unknown parasite infesting Virgin spinedace in the Ash Creek drainage, but they were unable to determine the effects of this parasite on the Virgin spinedace.

*D. Inadequacy of existing regulatory mechanisms.* The Virgin spinedace is listed as State endangered in Utah and Arizona, and State protected in Nevada. These States protect the species from direct take. Although land ownership within the Virgin River Basin is divided and administered among many Federal and State agencies, and also private landowners, cooperation among the various groups is helping to protect the Virgin spinedace. The Agreement is a multiagency agreement whose signatories and participants include the Utah Division of Wildlife Resources, Bureau of Land Management (Utah and Arizona State Offices), National Park Service, Nevada Division of Wildlife, Arizona Game and Fish Department, Washington County Water Conservancy District, and the Service. The Agreement was developed to expedite conservation measures needed for the continued existence and recovery of the Virgin spinedace. It focuses on two objectives: (1) To reduce and eliminate significant threats to the species, and (2) to enhance and/or stabilize specific reaches of occupied and unoccupied historical habitat. These objectives will be met through: reestablishment of population maintenance flows for Virgin spinedace; enhancement and maintenance of habitat; selectively controlling nonindigenous fishes; maintaining genetic viability; monitoring populations and habitat; and developing a mitigation plan and protocol for future activities that may affect Virgin spinedace. When the Agreement is fully implemented, it will provide for the recovery of the Virgin spinedace by establishing a framework for interagency cooperation and coordination on conservation efforts, setting recovery priorities, and estimating costs of various tasks necessary to accomplish the recovery priorities. In addition to the Agreement, other partnerships will be developed on specific actions within the Virgin River basin involving other interested agencies or groups.

*E. Other natural or human caused factors affecting its continued existence.*

Drought directly impacts Virgin spinedace habitat by dewatering some stream reaches, thus reducing the amount of usable habitat and isolating individual populations. Many of the tributaries in the Virgin River drainage have intermittent flows that disappear during drought years. Historically, fish survived drought by following the receding waters. Now, artificial barriers block their paths of retreat and some Virgin spinedace populations may become stranded and die during drought periods. One conservation action called for by the Agreement is the reestablishment and maintenance of required stream flows. These interim fish maintenance flows will be reestablished in approximately 39 km (24 mi) of historical habitat in order to reduce habitat fragmentation and to help restore fish populations. The Washington County Water Conservancy District has agreed to provide population maintenance flows for approximately 5 km (3 mi) of previously dewatered Virgin spinedace habitat below the Quail Creek Diversion. Actions are now underway to provide flows for approximately 31 km (19 mi) of the Santa Clara River.

In addition to drought, other factors such as pollution, livestock water diversions, and mining activities have negatively impacted the Virgin spinedace by degrading its habitat. Under the Agreement, efforts will be made to implement intensive grazing management programs on Federal lands along riparian zones to control unauthorized grazing and recreational use. Conservation easements and barriers within the Virgin River floodplain will be developed to help reduce additional impacts from agriculture, recreation, and development.

Implementation of the Agreement will result in the reestablishment of Virgin spinedace in approximately 39 km (24 mi) of its historical habitat and

enhancement of currently occupied habitat. This will involve the reestablishment of fish in areas that have not been occupied for many years, and this effort will be monitored and evaluated to determine the degree of success achieved. Changes in nonnative stocking procedure will also be evaluated to determine the degree of success. Therefore, until these evaluations are completed and the degree of success determined, the Service will consider the Virgin spinedace a species of concern. If the Agreement is successful, the Virgin spinedace will no longer be considered a species of concern. If the Agreement fails, the Virgin spinedace will be reevaluated for possible listing.

The Service has carefully assessed the best scientific and commercial data available regarding the past, present, and future threats faced by this species. As stated in section 4(b)(1)(A) of the Act, the Service shall take into account those efforts, if any, being made by any State or foreign nation, or any political subdivision of a State or foreign nation, to protect such species, whether by predator control, protection of habitat and food supply or other conservation practices, within any area under its jurisdiction.

The Service has evaluated each one of the five listing factors discussed above after taking into account conservation efforts being implemented on behalf of the Virgin spinedace. Based upon this evaluation, the Service finds that the listing of the species as proposed and the designation of critical habitat are no longer warranted. The Service has determined that the Agreement, when fully implemented, is expected to prevent any of the five listing factors from causing the Virgin spinedace to become endangered in the foreseeable future. Based on this decision, the Service withdraws the proposed rule to list Virgin spinedace as threatened and withdraws that portion of the proposed

rule designating critical habitat that addresses the Virgin spinedace.

#### Available Conservation Measures

An Agreement has been developed for the Virgin spinedace by the Utah Department of Natural Resources in cooperation with the Bureau of Land Management, National Park Service, Nevada Department of Conservation and Natural Resources, Arizona Game and Fish Department, Washington County Water Conservancy District, and the Service. This Agreement focuses on reducing and eliminating significant threats and enhancing and/or stabilizing specific reaches of occupied and unoccupied historical habitats of the Virgin spinedace. When the Agreement is fully implemented, it will provide for recovery of the Virgin spinedace by establishing a framework for cooperation and coordination among State and Federal agencies. It will also establish a framework for conservation efforts, setting recovery priorities, and establishing costs of various tasks necessary to accomplish the recovery priorities.

#### References Cited

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

#### Authors

The primary authors of this document are Janet A. Mizzi and Henry R. Maddux (see **ADDRESSES** above).

Authority: The authority for this action is section 4(b)(6)(B)(ii) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: November 7, 1995.

George T. Frampton, Jr.,  
*Assistant Secretary for Fish and Wildlife and Parks.*

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