



Questions and Answers: Gila Chub Listing and Critical Habitat Final Rule

Arizona Ecological Services Field Office

<http://arizonaes.fws.gov>

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1. What is the Gila chub?

A: The Gila chub is a small-finned, chunky and darkly-colored minnow. Males reach 6 inches in length and females can exceed 8 inches. Gila chub are highly secretive fish that prefer quiet and deep waters, especially in pools, or remaining near cover in the form of terrestrial vegetation, boulders, or fallen logs in smaller streams, springs, and cienegas (desert wetlands). They can also survive in small artificial impoundments. The Gila chub lives in an environment of periodic drought and is adapted to streams that may experience periods of low flow or drying (i.e., intermittent streams).

2. Where is the Gila chub found?

A: Historically the chub was found throughout the Gila River basin in southern and central Arizona, southwestern New Mexico, and northeastern Sonora Mexico. Today only 29 populations remain – all are small, isolated, and threatened. The Gila chub now occupies about 10 to 15 percent of its historical range. Current populations of Gila chub are now scattered in small disjunct habitats in Yavapai, Maricopa, Gila, Coconino, Pinal, Graham, Pima, Santa Cruz, Cochise, and Greenlee counties in Arizona, and Catron and Grant counties, New Mexico.

3. How will listing the Gila chub under the Endangered Species Act help protect it?

A: The Gila chub is now listed as an endangered species under the Endangered Species Act. 160 miles of stream segments has been designated as critical habitat in seven river areas, which covers approximately 10% to 15% of the historical range of the Gila chub. The stream reaches designated as critical habitat all currently maintain, at a minimum, perennial pools considered to be preferred habitat of the Gila chub. Land ownership is primarily Federal. Of the total, 107 miles are lands managed by the Forest Service and the Bureau of Land Management. Thirty-four miles of the critical habitat designation is private land with ranching being the primary use.

Projects that may result in the taking of Gila chubs or modification of their designated critical habitat need to be consulted on by the Service to assure that the effects of the project are minimized or offset before a permit to take the species is granted. Next, the Service will begin

assembling a multidisciplinary team to determine recovery goals and map a plan for recovering the Gila chub.

4. What protection does a species receive under the Endangered Species Act (ESA)?

A: Collection, trade, or transport of endangered species without a permit is illegal. Take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of listed animals without a permit is prohibited. Federal agencies that fund, authorize, or carry out actions that may affect a listed species or its critical habitat are required, in consultation with us, to ensure that their activities do not jeopardize the continued existence of the species or adversely modify its critical habitat. These protective responsibilities extend to Federal agencies that may fund, authorize, or carry out projects on private lands.

5. Why does the Gila chub need endangered status under the ESA?

A: Under the ESA, the Service uses five factors to evaluate the level of threats and to determine whether species are endangered or threatened. These factors include: 1) present or threatened destruction, modification, or curtailment of the species' 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 manmade factors affecting the species' continued existence.

In this case, the Gila chub is known to have historically occurred in at least 44 rivers, streams, and spring-fed tributaries and even whole drainages, such as the Santa Cruz and Upper San Pedro rivers. Humans have affected southwestern riparian systems over a period of several thousand years. Before the 1800's, indigenous people and missionaries used these streams and their forested "riparian" banks for subsistence activities, including woodcutting, agriculture, livestock grazing, and food and fiber harvesting. By the late 1800's, many southern Arizona watersheds were in poor condition primarily due to a substantial increase in new immigrants that brought livestock grazing, mining, expanded irrigation agriculture, hay harvesting, timber harvesting, and other management practices, such as fire suppression. These events led to long-term stream, cienega (desert wetland), and riparian habitat degradation throughout southern Arizona and northern Mexico. Although these changes took place nearly a century ago, the ecosystem has not fully recovered, and in some areas may never recover. As a result, this once widespread southwest native is now confined to limited deep pools in the headwaters of some of our rivers and streams.

Today, riparian and cienega habitat and chub populations face additional threats, including increased groundwater pumping, nonnative fishes, crayfish introductions, urbanization, and recreation. Over 85 to 90 percent of the Gila chub's habitat has been degraded or destroyed, and much of it is unrecoverable. Only 29 populations of Gila chub are known to remain; all are small, isolated, and threatened. These factors, as well as the introduction of diseases to chub populations, led to the listing of the Gila chub as endangered under the Endangered Species Act.

In summary, the ESA defines an endangered species as one that is in danger of extinction throughout all or a significant portion of its range. Without protections, the Gila chub could

become extinct in the foreseeable future based on the following: (1) 85 to 90 percent of its habitat has been degraded or destroyed; further degradation and destruction is ongoing; (2) remaining populations of Gila chub are small and occupy habitat that has become severely fragmented, thus reducing chances for recolonization; and (3) competition with, and predation from, nonnatives is a major and increasing threat. Since these circumstances have reduced this species to an imperiled status – we believe that the Gila chub meets the definition of an endangered species under the ESA.

6. What is critical habitat?

A: Critical habitat is a term in the Endangered Species Act (ESA). It identifies geographic areas that contain features essential for the conservation of a threatened or endangered species and may require special management considerations. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve or other conservation area. Critical habitat designation does not impose restrictions on private lands unless federal funds, permits or activities are involved. Federal agencies that undertake, fund, or permit activities that may affect critical habitat are required to consult with the Service to ensure such actions do not adversely modify or destroy designated critical habitat. Critical habitat designation does not impose restrictions on private lands unless Federal funds, permits, or activities are involved.

Critical habitat provides protection from destruction or adverse modification through required consultation under section 7 of the ESA with regards to actions carried out, funded, or authorized by Federal agencies only.

7. How does critical habitat designation affect my private land?

A: Requirements for consultation on critical habitat do not apply to entirely private actions on private lands. Critical habitat designations only apply to Federal lands, or federally funded or permitted activities on private lands. Activities on private or State lands that are funded, permitted or carried out by a Federal agency, such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act, will be subject to the section 7 consultation process with the Service if those actions may affect critical habitat or a listed species. Through this consultation, the Service will advise agencies whether the permitted actions would likely jeopardize the continued existence of the species or adversely modify critical habitat. Federal actions not affecting critical habitat or otherwise affecting Gila chubs or their habitat (e.g., suitable habitat outside of critical habitat), and actions on non-Federal lands that are not federally funded, permitted or carried out, will not require section 7 consultations.

8. Does a “critical habitat” designation mean an area is considered a wildlife refuge or sanctuary?

A: Critical habitat is not designated to stop development or to establish a nature preserve. A critical habitat designation identifies areas that are important to the conservation of federally listed threatened or endangered species. A critical habitat designation requires Federal agencies to consult with the Service on any of their actions that may affect critical habitat in designated areas. The Service can then recommend ways to minimize any adverse effects. It imposes no

requirements on State or private actions on State or private lands where no Federal funding, permits or approvals are required.

9. What has the Service designated as critical habitat for the Gila chub?

A: We have designated 160 miles of New Mexico and Arizona cienegas, headwaters, spring-fed streams, and perennial streams as critical habitat. While the designation does not establish chub preserves, it assists in gaining the support of other Federal agencies in the conservation of the Gila chub's habitat.

We have designated critical habitat for 24 headwater streams or cienegas of seven rivers (Upper Verde, Agua Fria, Middle Gila, Upper Gila, Lower Santa Cruz, Lower San Pedro, and Babocomari drainages). The majority of Gila chub critical habitat is found on Federal lands. Of the total, 107 miles are lands managed by the Forest Service and the Bureau of Land Management. No critical habitat was designated on tribal lands. Thirty-four miles is private land. About 19 miles is on county land and state lands. The seven populations not covered in the critical habitat designation have other protections in place that safeguard the species, are found only in Mexico or are newly established. Areas crucial to a species survival can be left out of a critical habitat designation if sufficient management protections are in place (see questions 10 & 16 below).

The critical habitat designation includes the stream channels within the identified stream reaches and areas within these reaches potentially inundated during high flow events. Critical habitat includes the area of bankfull width plus 300 feet on either side of the banks.

All of the critical habitat reaches are within the geographical range occupied by the species and require special management consideration and protection to ensure their contribution to chub conservation. These areas are largely being managed presently for the benefit of wildlife.

10. Did the Service designate all of the areas it had proposed as critical habitat?

A: No. Since the Service published a proposal, the San Carlos Apache Tribe completed a fisheries management plan and the City of Safford¹ together with Bureau of Land Management and Bureau of Reclamation developed a plan which secures a Gila chub population.

The Service weighed the benefits of designating critical habitat against the benefits of excluding the tribal stream reaches (together with the tribal fisheries management plan and the City's efforts and our continuing conservation relationship with these entities) under section 4(b)(2) of the ESA.

¹ The City of Safford derives most of its municipal water supply from Bonita Creek. The extraction of water and resulting dewatering of a portion of Bonita Creek, have effectively excluded non-native fish from the Bonita Creek Gila chub population. The Bureau of Reclamation is preparing to construct a more effective fish barrier to exclude non-native fishes. The City and the Bureau of Land Management have entered into an agreement to facilitate the planning and long-term permitting of the City's water use and Gila chub conservation.

This analysis resulted in excluding San Carlos Apache Tribe lands and waters and Bonita Creek from the critical habitat designation because they are adequately protected.

Almost two miles each of Cienega Creek (Pima County) and Spring Creek (Yavapai County) were excluded due to the potential economic impact of designating these segments. Possible 20-year cost impacts of nearly \$36 million from these two segments were significant and a highly disproportionate. These two areas bore more than half of the projected costs from the entire designation. These exclusions will not result in Gila chub extinction.

11. How did the Service determine what areas to designate as critical habitat?

A: The Service considers habitat features needed for life and successful reproduction of the species. These include but are not limited to:

- space for individual and population growth, and for normal behavior
- cover, food, water, and other nutritional/physiological requirements
- sites for breeding and rearing offspring

The critical habitat designation constitutes the Service's best assessment of areas needed for the conservation of Gila chub and is based on the best scientific and commercial information available. The stream reaches are essential to the conservation of the species because they support populations of Gila chub and because they have the necessary requirements for survival, growth, and reproduction of the Gila chub, known generally as "primary Constituent Elements." All of the stream reaches are essential to help maintain genetic diversity and adaptation capabilities of the Gila chub.

The Service believes including a stream reach "bankfull width" plus 300 feet on either side of the banks in the lateral extent of critical habitat is essential to the chub's conservation. Bankfull discharge, while a function of the size of the stream, is a fairly consistent feature related to the formation, maintenance, and dimensions of the stream channel.

12. What habitat features are required for the survival and recovery of the Gila chub?

A: The habitat features, or "primary constituent elements" necessary for survival and recovery of the Gila chub include:

- *Perennial pools, areas of higher velocity between pool areas, and areas of shallow water* among plants or eddies all found in small segments of headwaters, springs, or cienegas of smaller tributaries.
- *Water temperatures* for spawning ranging from 17 to 24° C with sufficient dissolved oxygen, nutrients, and any other water related characteristics needed, and seasonally appropriate temperatures for a life stages.
- *Water quality* with reduced levels of contaminants or any other water quality characteristics, including excessive levels of sediments, adverse to Gila chub health.
- *Food base* consisting of invertebrates and aquatic plants.
- *Sufficient cover* consisting of downed logs in the water channel, submerged aquatic vegetation, submerged large tree root wads, undercut banks with sufficient overhanging

vegetation, large rocks and boulders with overhangs, and a high degree of streambank stability and/or healthy, intact riparian vegetative community.

- Habitat *devoid of nonnative aquatic species* detrimental to Gila chub or habitat in which detrimental nonnatives are kept at a level which allows Gila chub to continue to survive and reproduce.
- Streams that maintain a *natural flow pattern* including periodic flooding. An example is Sabino Canyon that has experienced major floods. If flows are modified, then the stream should retain a natural flow pattern that demonstrates an ability to support Gila chub.
- *300-foot riparian zone* adjacent to each side of the stream

13. Will listing or designating critical habitat for the Gila chub affect the States' sportfish stocking programs?

A: Most Gila chub populations do not occur in popular fishing areas. State fish hatcheries and stocking programs are supplemented by federal tax revenues distributed by the Service. Should sportfish stocking be proposed for one of the few areas where the chub still exists, we will consult on the effects of sportfish stocking to the species. The Service believes a few individual Gila chub may be caught incidentally by recreational anglers.

Collection of, or fishing for, Gila chub in Arizona is prohibited by Arizona Game and Fish Commission Order 41, except where such collection is authorized by special permit; collection of Gila chub is prohibited in the State of New Mexico except by special scientific permit. Collection of Gila chub is also prohibited in Mexico except by special permit.

14. Will listing or designating critical habitat for the Gila chub affect road building or recreation programs?

A: Road building and recreation can contribute to riparian, cienega, and Gila chub habitat loss and degradation in southern Arizona and in New Mexico. The local and regional effects of these activities are expected to increase with increasing human population. Increased sediment is the primary problem related to roads. Sediment can enter stream systems as a result of off-road vehicles when they directly disturb and crush vegetation to the point that bare soil is exposed. Roads in forest and rangeland areas may also contribute substantially to watershed problems through direct soil disturbance during road construction. Established roads may also result in an increase of sediments entering stream systems through storm run-off.

If a Federal agency determines that its proposed road building and recreation activities may affect a listed species or modify its critical habitat, it is required to enter into section 7 consultation with the Service. If these activities are conducted on private lands and are thought to result in "taking" of Gila chubs, landowners can contact us to evaluate the need to pursue a Habitat Conservation Plan (HCP) through which incidental taking of chubs may be permitted.

15. What sort of actions will continue to be allowed within areas designated as critical habitat?

A: The Service believes, based on the best available information, that the following actions will not result in a violation of the ESA:

- Actions that may affect the Gila chub that are authorized, funded, or carried out by a Federal agency when the action is conducted in accordance with an incidental take statement issued by us pursuant to section 7 of the ESA, or when such action will not result in take;
- Actions that may result in take of Gila chub when the action is conducted in accordance with a permit under section 10 of the ESA (i.e. HCP, Safe Harbor Agreement);
- Recreational activities such as hiking, off-road vehicles use, camping, and hunting in the vicinity of occupied Gila chub habitat that do not destroy or significantly degrade Gila chub habitat, and do not result in take of Gila chub; and
- Release, diversion, or withdrawal of water from or near Gila chub habitat in a manner that does not displace or result in desiccation or death of eggs, larvae, or adults, does not disrupt spawning activities, or does not favor introduction of nonnative predators; and does not alter vegetation.

16. How will critical habitat be applied on tribal lands?

A: Critical habitat for the Gila Chub was not designated on tribal lands. The Service initially proposed critical habitat designation of portions of the Blue River and Bonita Creek on the San Carlos Apache Reservation. The San Carlos Apache Tribe has completed a fisheries management plan which provides adequate special management considerations for the Gila chub. The Service weighed the benefits of designating critical habitat against the benefits of excluding the tribal stream reaches (together with the existing tribal fisheries management plan) and determined that we would exclude San Carlos Apache Tribe lands and waters from the critical habitat designation under section 4(b)(2) of the ESA.

17. What economic consideration was given before designating as critical habitat?

A: The Service is required to take into consideration the economic impact, and any other relevant impact, of designating any particular areas as critical habitat. The Service may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species. The Service has prepared an economic analysis and a draft environmental assessment of the proposed critical habitat designation and sought public comments to assist us in this evaluation.

The 10th Circuit Court of Appeals directed the Service that when deciding which areas to designate as critical habitat, the economic analysis should include “co-extensive” effects. Those include all economic effects resulting from conserving the species, the species’ listing (endangered) status and the implementation of critical habitat.

A final economic analysis of the 2002 proposal estimates the impacts of Gila chub conservation efforts in the proposed designated areas, not just those exclusively associated with the proposed critical habitat designation or the final designation, to be between \$1.5 and \$3.8 million annually. Between \$227,000 and \$1 million of the annual projected costs were associated with the Blue River and Bonita Creek – both now excluded from critical habitat designation.

Almost two miles each of Cienega Creek (Pima County) and Spring Creek (Yavapai County) were excluded due to the potential economic impact of designating these segments. Possible 20-year cost impacts of nearly \$36 million from these two segments were significant and a highly disproportionate. These two areas bore more than half of the projected costs from the entire designation. These exclusions will not result in Gila chub extinction.

18. How can I get more information regarding the Gila chub, its endangered species listing or its critical habitat?

A: The listing rule, economic analysis, environmental assessment, maps and other documents are available on the Internet at www.fws.gov/arizonaes or by contacting the Field Office Supervisor, U.S. Fish and Wildlife Service, 2321 W. Royal Palm Road, Suite 103, Phoenix, AZ 85021-4951 (602-242-0210).