

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Proposal of Critical Habitat for Four Species in Texas

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes Critical Habitat for Texas wild rice (*Zizania texana*), San Marcos salamander (*Eurycea nana*), San Marcos gambusia (*Gambusia georgei*) and fountain darter (*Etheostoma fonticola*). Texas wild rice and fountain darter were listed as Endangered on April 26, 1978 (43 FR 17910-17916) and on October 13, 1970 (35 FR 16047), respectively. San Marcos gambusia and San Marcos salamander were proposed as Endangered and Threatened, respectively, with Critical Habitat on July 14, 1978 (43 FR 30318-30319). The Critical Habitat portions of the two latter proposals were withdrawn by the Service on March 6, 1979, because of procedural and substantive changes made by the Endangered Species Act Amendments of 1978. Critical Habitat for Texas wild rice and fountain darter are proposed for the first time. This proposed rule conforms to the requirements of the 1978 Amendments.

DATES: Comments from the public on this proposed rule must be submitted by May 19, 1980. Comments from the Governor of Texas must be submitted by June 17, 1980. A public meeting will be held April 8, 1980, and a public hearing will be held May 12, 1980, in San Marcos, Texas.

ADDRESSES: Interested persons or organizations are requested to submit comments to Director (OES), U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240. Comments and materials relating to this rule are available for public inspection during normal business hours at the Service's Office of Endangered Species, Suite 500, 1000 North Glebe Road, Arlington, Virginia 22201. A public meeting and a public hearing will be held at the locations set out in the table below.

Public Meeting: San Marcos, Texas—
Southwest Texas State University, Student Union Building, Chautauqua Room. 7:00 p.m. April 8, 1980.

Public Hearing: San Marcos, Texas—
Southwest Texas State University, Student

Union Building, Chautauqua Room. 7:00 p.m. May 12, 1980.

FOR FURTHER INFORMATION CONTACT: Mr. John L. Spinks, Jr., Chief, Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240 (703/235-2771).

SUPPLEMENTARY INFORMATION:**Background**

Texas wild rice—*Zizania texana* was listed as an Endangered species without Critical Habitat on April 28, 1978 (43 FR 17910-17916). Critical Habitat is proposed for this species for the first time. Texas wild rice, once known from San Marcos Spring Lake and its outflow, the San Marcos River, has undergone significant population decline (Emery, 1967). The wild rice population, once vigorous in San Marcos Spring Lake and for a 2 mile (3.2 km) segment of the San Marcos River, has been reduced to an area measuring approximately 1,131 square meters (Emery, 1977) along a 1.5 mile (2.4 km) stretch of the river. Reports indicate that the population is stable at present (Beaty, pers. comm., 1980).

Elimination of *Zizania texana* from much of its former distribution along the San Marcos River and Spring Lake has been attributed to human activities. Past impacts, now largely abated, include cutting of *Zizania texana* and other aquatic vegetation, and streambed harrowing or plowing to eliminate aquatic plants from recreational areas. Plant debris resulting from cut vegetation entangles in the erect inflorescences of *Zizania texana* and forces them underwater, preventing sexual reproduction of the species. Although cutting practices have been modified recently and the size of plant debris reduced (Longley, pers. comm., 1980), *Zizania texana* flowering heads are still being forced underwater in this manner, and no native *Zizania texana* have been observed to produce significant amounts of seed in recent years (Emery, pers. comm., 1980). Two commercial aquatic plant enterprises have engaged in the removal of undesirable species from stream and lake bottoms and have replaced them with saleable species for the aquarium trade (Emery, 1967). Pollution from sewage leaks, storm drainage systems, and watershed runoff from streets, highways, railroads, and recreational areas have also had detrimental effects on the population (Beaty, 1975).

Although harrowing, pollution, and commercial activities have virtually stopped, threats to the survival of the species remain. Maintenance of certain recreational areas along the San Marcos River has destroyed colonies of *Zizania texana*, particularly in the vicinity of

Spring Lake Dam and the U.S. Highway 82 bridge. Continued cutting of vegetation and intensive recreational activity in these areas makes reestablishment of the grass highly unlikely. Floating plant debris from vegetation cut in Spring Lake continues to interfere with seed production in the Texas wild rice, despite modifications in cutting practices. The species must therefore rely on vegetative reproduction to maintain and increase the population, which may have serious evolutionary consequences for the species. Possible hybridization of the species is another potentially serious threat to the gene pool of this population. *Zizania* hybrids, crosses between Texas wild rice and other wild rice species, are producing seeds in experiments conducted in the immediate vicinity of the San Marcos River (Longley, pers. comm., 1980). Should any of these seeds make their way into the San Marcos River, and hybrid plants cross with flowering native *Zizania texana*, a dilution of the *Zizania texana* gene pool could result.

In addition, threats to the springs feeding the San Marcos River or the Edwards Aquifer, such as ground water pollution or reduced flow, could threaten the Texas wild rice.

The area proposed as Critical Habitat satisfies all known criteria for the ecological and physiological requirements of *Zizania texana*. The inability of the native plants to reproduce sexually in this habitat is cause for concern regarding the evolutionary potential of the species, however. It is apparent that factors interfering with sexual reproduction of Texas wild rice must be alleviated if the species is to adapt to future changes in its environment. The area proposed as Critical Habitat includes the entire known present and historical range of the species and a small amount of habitat (approximately ½ mile) downstream from existing colonies for expansion of the population.

San Marcos salamander—On August 2, 1977, the U.S. Fish and Wildlife Service published a notice in the *Federal Register* (42 FR 39119-39120) to the effect that a review of the status of 10 amphibians was being conducted. The San Marcos salamander (*Eurycea nana*) was included as part of the review. As a result of the notice of review, responses were received from the State of Texas and professional biologists. The comments and supportive documents were reviewed and a summary was presented in the July 14, 1978, proposed rule to list this species as Threatened with special rules which would allow

taking under state law (see the Federal Register, 43 FR 30316-30319). On March 6, 1979, the Service withdrew all pending Critical Habitat proposals in compliance with the Endangered Species Act Amendments of 1978 (see the Federal Register, 44 FR 12382-12384).

The San Marcos salamander is presently known only from Spring Lake and approximately 50 meters downstream in the San Marcos River. While the population may be quite dense, this species is entirely aquatic and depends on a constant flow of spring water to maintain its environment. The threats to the environment were specified in the proposal of July 14, 1978 (43 FR 30316-30319), and are summarized later in this rulemaking.

With respect to the San Marcos salamander, the area proposed as Critical Habitat satisfies all known criteria for the evolutionary, ecological, behavioral, and physiological requirements of the species. Dense algal mats cover the substrate and it is within this vegetation that the salamander finds cover and protection from fish and other predators. Tenthredinid fly larvae and amphipods are the main food items of the salamander and these prey are found abundantly within the bottom vegetation (Tupa and Davis, 1976). While courtship of the salamander has not been described and eggs have not been found, hatchlings have; coupled with the relatively large population size, successful reproduction is apparently occurring. The area proposed as Critical Habitat includes the entire known range of the species.

San Marcos gambusia—On July 14, 1978, the U.S. Fish and Wildlife Service published a proposal to list the San Marcos gambusia (*Gambusia georgei*) as Endangered with a segment of the San Marcos River as its Critical Habitat. On March 6, 1979, the Service published a notice (44 FR 12382-12384) withdrawing all pending Critical Habitat proposals in compliance with the Endangered Species Act Amendments of 1978.

The San Marcos gambusia is presently known only from one section (approximately 1.5 km) of the San Marcos River below Spring Lake in the community of San Marcos. In 1969, Drs. Clark Hubbs and Alex Peden estimated the population of San Marcos gambusia to be fewer than 1,000 individuals. A survey in 1974 revealed the presence of one individual. The most recent survey (1979) found 19 individuals living in the area proposed as Critical Habitat. There are two other species of gambusia (*Gambusia affinis* and *Gambusia geiseri*) which occur in the same area and these are still abundant. The above

information was taken from a 1976 contract report by Dr. B. G. Whiteside and a 1979 contract report by Dr. Clark Hubbs.

Fountain Darter—The fountain darter was listed as Endangered on October 13, 1970 (35 FR 16047). The fountain darter was known originally from the San Marcos and Comal Rivers in Hays and Comal Counties, Texas, respectively. The Comal River population was extirpated during the mid 1950's due to reduced flows from Comal Springs (Schenck and Whiteside, 1976). Efforts to reestablish this population have been made by introducing individuals from the San Marcos population. It is too early to determine the status of this population, therefore the Comal River, Comal County, Texas is not being proposed as Critical Habitat at this time.

In the San Marcos River drainage, the fountain darter was known downstream just below the junction of the Blanco River. Recent collectors have not found any individuals below the outfall of the new sewage treatment plant. The treatment plant is located approximately 1 mile (1.6 km) upstream from the confluence of the Blanco River. Absence of the fountain darter in this section of the San Marcos River is most likely due to the small impoundment (Cumming's Dam) built in the early 1900's which altered the habitat. The impoundment has increased the depth and restricted the growth of many types of vegetation utilized by the darter in the upper reaches of the San Marcos River (Schenck and Whiteside, 1976).

Fountain darter populations are presently known in Spring Lake, and in the San Marcos River downstream to just below the Interstate Highway 35 bridge.

With respect to the San Marcos gambusia and fountain darter, the area proposed as Critical Habitat satisfies all known criteria for the evolutionary, ecological, behavioral, and physiological requirements of these species. The area proposed as Critical Habitat is presently inhabited by these species. Additional Critical Habitat for the fountain darter along the Comal River may be proposed in the future.

Critical Habitat

The Act defines "critical habitat" as (i) the specific areas within the geographical areas occupied by the species, at the time it is listed in accordance with the provisions of Section 4 of this 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 geographic area occupied by the species at the time it is listed in accordance with the provisions of Section 4 of this Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

The Service believes that the entire known ranges of the species under consideration should be designated as Critical Habitat. Each of the species occupies an extremely restricted range and is therefore highly susceptible to changes in habitat. The areas proposed as Critical Habitat satisfy all known criteria for the evolutionary, ecological, behavioral, and physiological requirements of the species. If, during the comment period, new information is made available, these areas proposed as critical for the continued existence of these species may be modified to more accurately reflect their physiological, behavioral, ecological, and evolutionary requirements.

Texas Wild Rice—The most significant factors presently affecting the continued existence of the Texas wild rice are its extreme vulnerability due to limited range, its apparent inability to reproduce sexually in its native habitat, and the possibility of hybridization. Any action which would significantly alter the flow or water quality of the San Marcos River could adversely modify the Critical Habitat, since the species is adapted to conditions of clear water, uniform annual flow rate and constant year-round temperature (Beaty, 1975). *Zizania texana* does not survive in stagnant water (Beaty, pers. comm., 1980). In addition, any actions which would physically alter the Spring Lake-San Marcos River site, such as dredging, bulldozing, or bottom plowing; or physically disturb the Texas wild rice, such as harrowing, cutting, or intensive collecting, would adversely modify Critical Habitat. These disturbances have been identified as contributors to the decline of the existing Texas wild rice population.

San Marcos Salamander—Foremost among the factors contributing to this salamander's threatened status is its very limited range coupled with the threat of lowered water tables affecting Spring Lake (Longley, 1978).

The owner of Spring Lake, Aquareena Springs, has taken particular care to safeguard the animals in the lake and has cooperated closely with biologists in the Texas Parks and Wildlife Department to ensure that populations can be maintained. Hence, take is not seen as a threat to the continued survival of the species. The major threats to this species are: (1) lowering

of water tables in the area such that Spring Lake could become either dry or intermittent, thus exposing algal mats, and leading to the destruction of this species' sole habitat; (2) the owners of Spring Lake expressed concern that skin divers could disrupt algal mats and the bottom of the lake. This could expose salamanders to predation by fish and other predatory species.

San Marcos gambusia—This species' absence from Spring Lake and its very restricted distribution in the San Marcos River is an indication of its sensitivity and habitat specificity. The areas inhabited by the San Marcos gambusia are open areas away from the stream banks with a minimum of aquatic vegetation over a mud bottom with little current. The habitat is also characterized by thermal constancy. Any actions which would result in an increase in vegetation, disrupt the mud bottom, or alter the temperature regime could easily eliminate the species.

Fountain Darter—Specific actions which would reduce or eliminate the fountain darter populations include the destruction or significant reduction of aquatic vegetation in Spring Lake and the San Marcos River. It has been demonstrated that the preferred habitat of adult and young fountain darters areas with rooted aquatic vegetation which grows close to the substrate with filamentous algae present (Schenck and Whiteside, 1976).

Other actions which could adversely impact the fountain darter include impoundments, excessive withdrawal of water, and pollution. An impoundment on the lower portion of the San Marcos River apparently eliminated the fountain darter in that section of the river. The Comal River population of fountain darters were extirpated when their habitat was reduced to isolated pools by excessive removal of water. The darter has recently been reintroduced into the Comal River in an attempt to reestablish that population (Schenck and Whiteside, 1976). Pollution in the form of silt, from improperly maintained construction activities could temporarily reduce the population in some areas.

Effect of This Proposal if Published as a Final Rule

Provisions of Interagency Cooperation which implement Section 7 of the Act are codified at 50 CFR Part 402. If published as a final rule this proposal would require Federal agencies not only to insure that activities they authorize, fund, or carry out, do not jeopardize the continued existence of the species, but also to insure that their actions do not result in the destruction or adverse modification of this Critical Habitat

which has been determined by the Secretary to be critical.

Section 4(b)(4) of the Act requires the Service to consider economic and other impacts of specifying a particular area as Critical Habitat. The Service has prepared a draft impact analysis, based on available data, and believes at this time that economic and other impacts of this action will be insignificant in the foreseeable future. The Service is notifying agencies that may have jurisdiction over the areas under consideration of this proposed action. These agencies and other interested persons or organizations are requested to provide input at the public meeting and submit additional information on economic or other impacts of this proposed action (see below).

The Service will prepare a final impact analysis prior to the time of final rulemaking, and will use this document as the basis for its decision as to whether or not to exclude any area from Critical Habitat for any of the four species.

Public Meeting and Public Hearing

The Service announces that a public meeting will be held on this proposed rule at San Marcos, Texas on April 8, 1980. The public is invited to attend this meeting and to present opinions and information on the proposal. To further accommodate comments regarding this proposed rule, a public hearing will be held in San Marcos, Texas on May 12, 1980.

Public Comments Solicited

The Director intends that the rules finally adopted be as accurate and effective as possible in the conservation of the Texas wild rice, San Marcos salamander, San Marcos gambusia, and fountain darter. Therefore, any comments or suggestions from the public, concerned governmental agencies, the scientific community, industry, private interests or any other interested party concerning any aspect of this proposed rule are solicited. The Service particularly requests information on the following:

- (1) Biological and other relevant data concerning any threat (or lack thereof) to these species;
- (2) Additional information concerning the range and distribution of the species;
- (3) Current or planned activities in the subject areas;
- (4) The probable impacts of such activities on areas designated as critical habitat; and
- (5) The foreseeable economic and other impacts of the critical habitat designation on Federal activities.

National Environmental Policy Act

A draft environmental assessment has been prepared and is on file in the Service's Washington Office of Endangered Species. Based on the draft assessment, this proposal is not a major Federal action which would significantly affect the quality of the human environment within the meaning of Section 102(2)(C) of the National Environmental Policy Act of 1969. The draft assessment and public comments will be analyzed to prepare a final determination prior to the issuance of any final rule regarding these species.

The primary authors of this rule are Ms. Irene M. Storks, Dr. James D. Williams, and Dr. C. Kenneth Dodd, Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240, (703/235-1975).

Note.—The Department of the Interior has determined that this is not a significant proposal and does not require preparation of a regulatory analysis under Executive Order 12044 and 43 CFR Part 14.

Literature Cited

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- Emery, W. H. P. Southwest Texas State University, San Marcos, Texas. Personal communication, telephone. February 25, 1980.
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- Schenck, J. R. and B. G. Whiteside. 1976. Distribution, habitat preference and population size estimate of *Etheostoma fonticola*. Copeia, 1976 (4).
- Tupa, D. D. and W. K. Davis. 1976. Population dynamics of the San Marcos salamander, *Eurycea nana* Bishop. Texas J. Sci. 27:179-195.
- Whiteside, B. G. 1976. Contract Report to U.S. Fish and Wildlife Service on status of San Marcos gambusia.

Regulations Promulgation

Accordingly, it is hereby proposed to amend Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, as set forth below:

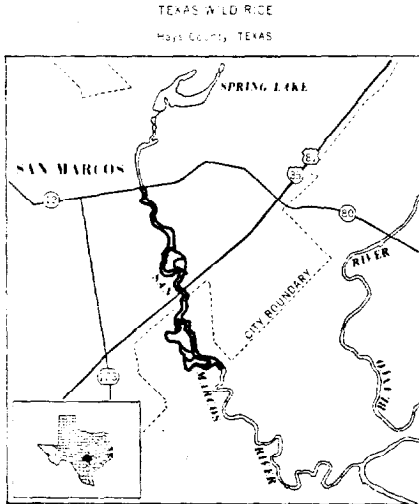
§ 17.96 [Amended]

1. It is proposed that § 17.96(a), Plants, be amended by adding Critical Habitat of *Zizania texana* (Texas wild rice) after that of *Oenothera deltooides* ssp. *howellii* (Antioch Dunes evening-primrose) as follows:

Poaceae

Texas Wild Rice (Zizania texana)

Texas, Hays County; Spring Lake and its outflow, the San Marcos River, downstream to its confluence with the Blanco River.



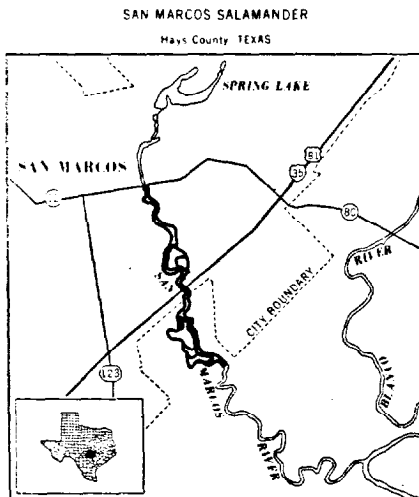
§ 17.95 [Amended]

2. It is further proposed that § 17.95(d), Amphibians, be amended by adding Critical Habitat of the San Marcos salamander before that of the Houston Toad as follows:

San Marcos Salamander

(Eurycea nana)

Texas, Hays County; Spring Lake and its outflow, the San Marcos River, downstream approximately 50 meters from the Spring Lake Dam.



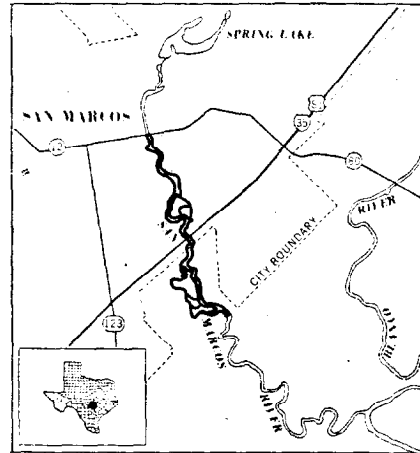
3. It is further proposed that § 17.95(e), Fishes, be amended by adding Critical Habitat of the San Marcos gambusia after that of the yellowfin madtom as follows:

San Marcos Gambusia

(Gambusia georgei)

Texas, Hays County; San Marcos River from Highway 12 bridge downstream to approximately 0.5 miles below Interstate Highway 35 bridge.

SAN MARCOS GAMBUSIA
Hays County, TEXAS



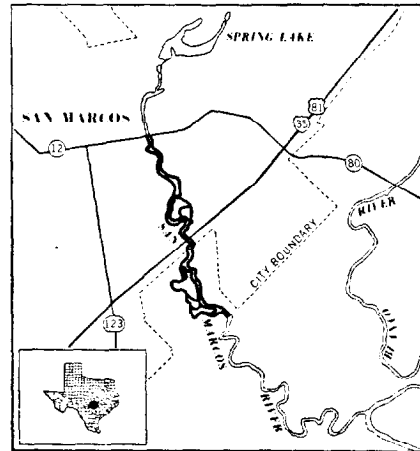
4. It is further proposed that § 17.95(e), Fishes, be amended by adding Critical Habitat of the Fountain darter after that of the slackwater darter as follows:

Fountain Darter

(Etheostoma fonticola)

Texas, Hays County; Spring Lake and its outflow, the San Marcos River, downstream approximately 0.5 miles below Interstate Highway 35 bridge.

FOUNTAIN DARTER
Hays County, TEXAS



Dated: March 13, 1980.

Robert S. Cook,
Acting Director, Fish and Wildlife Service.

[FR Doc. 80-8306 Filed 3-18-80; 8:45 am]

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