

FOR FURTHER INFORMATION CONTACT:
Robert Kieschnick ((202) 739-0764).

SUPPLEMENTARY INFORMATION:

Order Granting Extension of Time

Adopted: September 13, 1995.
Released: September 14, 1995.

By the Chief, Mass Media Bureau:

1. On June 15, 1995, the Commission initiated a rulemaking proceeding reexamining the Commission's rules governing programming practices of networks and their affiliates—specifically the right to reject rule, the time option rule, the exclusive affiliation rule, the dual network rule and the network territorial exclusivity rule. *Notice of Proposed Rule Making* in MM Docket No. 95-92, FCC 95-254 (released June 15, 1995), 60 FR 35369 (July 7, 1995). Comments were due August 28, 1995, and reply comments were due September 27, 1995.

2. On August 3, 1995, the Mass Media Bureau granted a 30-day extension of the comment period; as a result, comments were due September 28, 1995, and reply comments were due October 27, 1995. *Order Granting Extension of Time* in MM Docket No. 95-92, DA 95-1711 (released Aug. 3, 1995), 60 FR 40814 (Aug. 10, 1995). The Bureau did so in response to a request by the Network Affiliated Stations Alliance (NASA) for a 60-day extension. While the Bureau did not agree that a 60-day extension was appropriate, it stated its belief that a 30-day extension was warranted to enable parties to carefully compile a complete record regarding the complex issues raised in MM Docket No. 95-92.

3. On August 30, 1995, CBS, Inc., National Broadcasting Company, Inc., and Capital Cities/ABC, Inc., filed a motion to extend the comment date in this proceeding by an additional 30 days, to October 28, 1995. The networks note that ABC and CBS have recently entered into major merger agreements, and that CBS and NBC are involved in a number of station transactions. Further, they submit, all three networks are involved in proceedings involving the network/affiliate advertising rules, children's television and advanced television (ATV). The networks contend that these various undertakings have been occupying the time of their management and legal personnel and that a 30-day extension of time in this proceeding is necessary to provide them a full opportunity to present their views.

4. As set forth in Section 1.46 of the Commission's Rules, 47 CFR 1.46, it is our policy that extensions of time for filing comments in rulemaking proceedings shall not be routinely

granted. In response to NASA's request, we stated our belief that an extension until October 28 was excessive. Upon further reflection, however, and in light of recent events, we believe that it would be in the public interest to extend the comment and reply comment dates for this proceeding an additional 30 days. This proceeding has the potential to significantly affect the way the broadcast networks and their affiliates do business, and the fact that both the major networks and the affiliates feel they need additional time to prepare comments is persuasive.

5. Accordingly, *it is ordered* That the Motion for Extension of Time filed in MM Docket No. 95-92 by CBS, Inc., National Broadcasting Company, Inc., and Capital Cities/ABC, Inc., is granted.

5. *It is further ordered* That the time for filing comments in the above-captioned proceeding is extended to October 28, 1995, and the time for filing reply comments is extended to November 26, 1995.

6. This action is taken pursuant to authority found in Sections 4(i) and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303(r), and Sections 0.204(b), 0.283, and 1.45 of the Commission's Rules, 47 CFR 0.204(b), 0.283, and 1.45.

Federal Communications Commission.

Roy J. Stewart,

Chief, Mass Media Bureau.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AC91

Endangered and Threatened Wildlife and Plants; Proposal To Determine the Least Chub (*Iotichthys phlegethontis*) an Endangered Species With Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) proposes to determine the least chub (*Iotichthys phlegethontis*) to be an endangered species and to designate critical habitat pursuant to the Endangered Species Act of 1973, as amended. This small monotypic minnow is endemic to the Bonneville Basin in Utah where it was once common and widely distributed. Populations of least chub have declined,

and it now only exists within Snake Valley in western Utah. The continuing decline in range and abundance of the least chub has been attributed to competition and predation from nonnative species and habitat loss and alteration.

DATES: Comments from all interested parties must be received by November 28, 1995. Public hearing requests must be received by November 13, 1995.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, U.S. Fish and Wildlife Service, Lincoln Plaza, Suite 404, 145 East 1300 South, Salt Lake City, Utah 84115. Comments and materials received will be available for public inspection, by appointment, at the above address during normal business hours.

FOR FURTHER INFORMATION CONTACT: Robert D. Williams at the above address, telephone 801/524-5001.

SUPPLEMENTARY INFORMATION:

Background

The least chub, *Iotichthys phlegethontis*, is an endemic minnow (Family Cyprinidae) of the Bonneville Basin of Utah, which is located in the Great Basin of southwestern North America. E.D. Cope described the least chub (*Clinostomus phlegethontis*) from specimens collected in the Beaver River in 1872 by Dr. H.C. Yarrow and H.W. Henshaw (Cope 1874, cited in Cope and Yarrow 1875). However, the scientific name has been revised several times: from the genus *Clinostomus* to *Gila* (Cope and Yarrow 1875), to *Phoxinus* (Jordan and Gilbert 1883, cited in Jordan and Evermann 1896), to *Hemitremia* (Jordan 1891), to *Leuciscus* subgenus *Iotichthys* (Jordan and Evermann 1896), and finally to the monotypic genus *Iotichthys* (Jordan et al. 1930, cited in Hickman 1989; Robins 1991).

As suggested by its common and scientific names, the least chub is a small fish (<45 mm, 2.5 in.) that is identified by an upturned or oblique mouth (*clinostomus*), large scales, and absence of a lateral line (rarely with one or two pored scales). It was a deeply compressed body, the dorsal origin lies behind the insertion of the pelvic fin, and the caudle peduncle is slender. Dorsal fin rays number eight (rarely nine), and it has eight anal fin rays. The pharyngeal teeth (2.5-4.2) are in two rows (Jordan and Evermann 1896; Page and Burr 1991).

The colorful least chub has a gold stripe along its blue sides with white-to-yellow fins. Males are olive-green above, steel-blue on the sides, and have a golden stripe behind the upper end of

the gill opening. The fins are lemon-amber, and sometimes the paired fins are bright golden-amber. Females and young are pale olive above, silvery on the sides, and have watery-white fins; their eyes are silvery, with only a little gold coloration, rather than golden as in the males (Sigler and Miller 1963; Page and Burr 1991).

Sigler and Sigler (1987) considered the least chub to be a short-lived and slow-growing species: least chub mature within 1 year and rarely live beyond 3 years of age. Of 218 fish aged by various investigators, less than 1 percent of the fish reached 4 years of age, and only 2 fish reached a total length of 7.6 cm (3 in.). A least chub of average size would be about 3.3 cm (1.3 in.) and weigh 0.57 g (0.02 oz) (Sigler and Workman 1975; Workman et al. 1976; Crawford 1979).

Least chub begin spawning in the spring when water temperatures reach about 16 °C (60 °F; Sigler and Sigler 1987). The least chub is a partial and intermittent spawner. Crawford (1979) found that least chub females produced only a few eggs at any time but release eggs over an extended period. The number of eggs produced at any one time is variable and may range from about 300 to 2,700 (Sigler and Sigler 1987). Although the peak spawning activity occurs in May, the reproductive season lasts from April to August, and perhaps longer depending on environmental conditions. The least chub has evolved this reproductive strategy (i.e., repetitive spawning during one season and of spreading the spawn over many weeks) perhaps as an adaptation to unpredictable environmental changes that are present in desert habitats. The least chub presumably initiates spawning in response to increases in water temperature and photoperiod, which may act in concert with other environmental and physiological factors, including exposure to direct sunlight (Crawford 1979; Sigler and Sigler 1987).

The least chub releases its sex products over vegetation (Crawford 1979). The adhesive eggs then sink and usually attach to the underwater vegetation. Fertilized eggs hatch in about 2 days at water temperatures of 22 °C (72 °F; Crawford 1979). The presence of submerged vegetation provides an important habitat for eggs and young larvae by furnishing needed oxygen and food (Crist and Holden 1980).

Common foods of the least chub include algae (Chlorophyta and Chrysophyta) midges (Chironomidae), and microcrustaceans; but they also eat other items (Sigler and Sigler 1987). Of 185 least chub taken from 27 springs,

121 stomachs contained 14 food types including algae, crustaceans, and insects (Workman et al. 1979). It also is believed that mosquito larvae make up a significant portion of their diet (Sigler and Miller 1963; Sigler and Workman 1975). Workman et al. (1979) noted that least chub diet changed throughout the year, and vegetation was more important during winter months.

The least chub was once widely distributed within the Bonneville Basin of northwestern Utah. The fish occupied a variety of habitats including streams, springs, and ponds, and it was classified as "excessively common" in its preferred habitats (Jordan and Everman 1896). Yarrow and Henshaw found least chub in the Beaver River (Cope and Yarrow 1875). Jordan (1891, cited by Jordan and Evermann 1896) collected least chub from ponds near the mouth of the Provo River. Jordan and Evermann (1896) stated that least chub occurred in "tributaries of Great Salt Lake and Sevier Lake." Least chub also have been observed in Utah Lake, Beaver River, Parowan Creek, Clear Creek, and the Provo River (reviewed by Sigler and Miller 1963; Hickman 1989). More recently, C.D. Barbour, University of Utah, (*in litt.* 1970) collected least chub from the Gandy Salt Marsh Complex in the Snake Valley. In 1970, R.R. Miller, University of Michigan, (*in litt.* 1971), found large numbers of least chub in the Leland Harris Springs complex, also in Snake Valley.

A decline in distribution and abundance of the least chub was first noted in the 1940's and 1950's (Baugh 1980). Hubbs and Miller collected least chub on trips into Utah during the 1940's and 1950's, and also noted a decrease in abundance (Holden et al. 1974). The fish is now restricted to the Snake Valley of the Bonneville Basin.

Least chub occur on a mixture of Federal, State, and private lands at five locations in the Snake Valley. Small numbers of least chub exist in two isolated springs: Central Spring (Bishop Spring Complex, Millard County) and Miller Spring (Juab County), but the fish is most abundant in Leland Harris Spring Complex (Juab County) and Gandy Salt Marsh Complex (Millard County). Recent surveys by the Utah Division of Wildlife Resources (UDWR), Salt Lake City, (*in litt.* 1993) indicated that some least chub in Snake Creek, south of Grandy Salt Marsh. However, no studies have been conducted to determine the distribution, abundance, or status of this Snake Creek population (L. Lentsch, UDWR, pers. comm. 1993).

Historically, the least chub inhabited a variety of habitat types in different environments (Lamarra 1981; Sigler and

Sigler 1987). Least chub now occupy springs, marshes and pools, and stream habitats. Osmundson (1988) reported collections of least chub from 38 sites, and these fish were captured in pools from 0.3 to 260 m³ (3 to 2,800 ft²) in size and with water depths of 0.1 to 3.6 m (0.4 to 12ft). In some of these habitats, certain environmental parameters fluctuate. The springs exhibit cool stable temperature, relatively low conductivity, and little variation in dissolved oxygen content. The marsh and pool environments exhibit extreme diurnal fluctuations in dissolved oxygen, and water temperatures that may vary between 15 and 32 °C (59–90 °F) (Crist and Holden 1980; Lamarra 1981). Seasonal water quality changes in the marshes and stream segments result in fish movement back and forth between different habitat types, especially between the springs and marshes (Crist and Holden 1980).

Vegetation is an important habitat component for the least chub (Crist and Holden 1980), and Sigler and Workman (1975) reported that least chub habitat included aquatic plants that were "plentiful and provided excellent cover." Water parsnip (*Berula erecta*), wire rush (*Juncus balticus*), and algae are common in and around the springs and marshes that are inhabited by the fish (Sigler and Workman, 1975). However, many other plants occur in areas occupied by the fish including *Chara* sp., duckweed (*Laemna* sp.), watercress (*Nasturtium* sp.), bulrushes (*Scirpus* sp.), cattails (*Typha* sp.), and sedges (*Cyperus* sp.) (Sigler and Sigler 1987).

Least chub has not been collected outside of Snake Valley since 1965 (Hickman 1989). They continue to decline in Snake Valley, and studies conducted in the past 15 years indicate a steady decline in their distribution and abundance. Workman et al. (1979) collected least chub from 36 sites in 5 major spring complexes in Snake Valley, but Osmundson (1985) found it in only 2 of 5 complexes where it previously existed. Crist (1990) reported that least chub were extirpated from springs on the Bagley Ranch and the Redden Springs Complex. Least chub numbers are now declining within the Gandy Salt Marsh and Leland Harris Spring Complex. Recent collections by UDWR personnel indicate that least chub occurs in only 3 of 5 springs sampled in the Leland-Harris Complex and 6 of 12 springs in the Grandy Salt Marsh. A continuing decline of the least chub has prompted the American Fisheries Society to recognize it as a threatened species (Deacon et al. 1979).

As with other endemic southwestern fishes (Courtenay and Stauffer 1984; Meffe 1985; Schoenherr 1991), predation by introduced nonnative fishes have caused the decline of the least chub. Largemouth bass, rainbow trout, common carp, and brook trout have been regularly stocked by government agencies and private citizens into least chub habitat (Workman et al. 1979; Sigler and Sigler 1987; Osmundson 1985). Hickman (1989) considered least chub to be "constantly threatened" by the introduction of these gamefish species. However, other nonnative species also prey upon or compete with the least chub, including the mosquitofish (*Gambusia affinis*) and rainwater killifish (*Lucania parva*). Introduction of fishes into least chub habitat probably contributed to the extirpation of least chub outside of Snake Valley, since few least chub are present in spring complexes in Snake Valley where nonnative fishes have been introduced (Osmundson 1985; Shirley, *in litt.* 1989).

Direct, physical habitat loss and habitat degradation also are factors in the decline of the least chub (Holden et al. 1974; Hickman 1989; Crist 1990). In spring complexes that contain least chub, habitat degradation caused by livestock trampling could be a threat although no studies of the impact of livestock on the springs of Snake Valley have been conducted to date.

Recent oil and gas exploration and production activity in the West Desert area may result in increased degradation and/or impacts to least chub habitat. Exploration results in increased road access to sensitive areas while surface activities associated with drilling, including drilling site preparation under water hauling, may impact water quality. Drilling activities also may release drilling fluids into the aquifer or may fracture underground geologic features that are associated with springs.

Water withdrawals also are a potential threat to the least chub. Not only can reduced water supply diminish the amount of least chub habitat, and thus the capacity of an area to support least chub, but lowered levels may cause niche overlaps with other species. These overlaps may increase hybrid introgression and interspecific competition (Crawford 1979; Lamarra 1981). Maintenance of certain water levels is very important to least chub because these levels must be high enough to allow the fish to migrate between springs and surrounding marsh areas as environmental conditions change. Additionally, maintenance of water levels and discharge volumes is

critical in preserving natural sediment transport processes, thereby maintaining underwater habitat configurations and reducing aquatic vegetation encroachment into sensitive spring areas.

Present water withdrawals from surface and underground sources are estimated at 10 percent of the total yearly recharge rate (Van Pelt 1992). These rates do not appear to be threatening to least chub habitat. However, additional proposed wells in the southern part of Snake Valley and surrounding areas could lower the water table, resulting in drying up or lowering the water level in springs and marshes populated by least chub. These springs are dependant on underground water sources that flow from the Deep Creek Mountains to the Snake Valley (M. Barber, Bureau of Land Management (BLM), *in litt.* 1991; Brothers et al. 1993). It is important to note that all surface streams from the Deep Creek Mountains are currently diverted for agricultural use.

Several efforts to reintroduce least chub into historic habitat have been attempted. In 1979, least chub were introduced into a pond near Salt Lake City, Utah. The following year, young least chub were collected, verifying successful reproduction. However, introduction of nonnative fishes, combined with flooding of the pond by the Great Salt Lake, eliminated this successfully reintroduced population. Two other attempts to reintroduce least chub were not successful; the reasons for these failures are not well understood, but competition and/or predation with nonnative fishes offer a partial explanation (Crist 1990). Additional investigations are necessary prior to future reintroduction attempts, including reasons for past successes and failures, and the need to experiment with several reintroduction techniques. Both the UDWR and BLM are working on developing management plans that will address these reintroduction issues (L. Lentsch, UDWR, pers. comm., 1994; R. Fike, BLM, pers. comm., 1994).

Previous Federal Action

The Fish and Wildlife Service (Service) has conducted three status reviews for the least chub and have prepared two status reports. In 1980, the Service reviewed existing information on the least chub and determined that there was insufficient data to warrant its listing as endangered or threatened. On December 30, 1982, the Service classified the fish as a category 2 candidate species (47 FR 58454). After preparation of a 1989 status report, the Service reclassified the least chub as a

category 1 candidate species (54 FR 554; January 6, 1989). The Service continues to evaluate information and data concerning population declines and increasing threats, and has determined that listing the least chub as endangered or threatened is warranted.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (Act) of 1973, as amended (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 the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the least chub (*Iotichthys phlegethontis*) are as follows:

A. *The threatened destruction, modification, or curtailment of its habitat or range.* The least chub was once widely distributed within the Bonneville Basin of northwestern Utah and occupied many streams, springs, and ponds. Yarrow and Henshaw found least chub in the Beaver River (Cope and Yarrow 1875). Jordan (1891, cited by Jordan and Evermann 1896) collected least chub from ponds near the mouth of the Provo River. Jordan and Evermann (1896) stated that least chub occurred in "tributaries of Great Salt Lake and Sevier Lake." More recently, least chub were observed in Utah Lake, Beaver River, Parowan Creek, Clear Creek, and the Provo River (reviewed by Sigler and Miller 1963; Hickman 1989). However, least chub have not been collected outside of Snake Valley since 1965 (Hickman 1989).

Least chub populations in Snake Valley are not stable and studies conducted in the past 15 years indicate a steady decline in their distribution and numbers. Workman et al. (1979) collected least chub from 36 sites spread throughout 5 major spring complexes in Snake Valley. A few years later, Osmundson (1985) found least chub in only two of the five complexes. Further surveys have confirmed that least chub has been extirpated from springs on the Bagley Ranch and the Redden Springs Complex (Crist 1990). Recent data suggest that least chub numbers are now declining within the Gandy Salt Marsh and Leland Harris Spring Complex. Personnel from UDWR found least chub only in 3 of 5 springs sampled in the Leland-Harris Complex and 6 of 12 springs in the Gandy Salt Marsh. Some least chub have recently been discovered in Snake Creek, south of Gandy Salt Marsh. However, no studies

have been conducted to determine the distribution, abundance, or status of this Snake Creek population (L. Lentsch, pers. comm., 1993). Service biologists believe that the numbers of least chub at Snake Creek are insufficient to reverse this downward trend in its numbers.

Habitat loss and degradation have been indicated as major causes of the least chub's decline (Holden et al. 1974; Hickman 1989; Crist 1990). Although no studies have been made of the springs in Snake Valley, numerous other reports link livestock trampling and grazing with fish habitat degradation in streams and springs (Duff 1977; May and Somes 1981; Taylor et al. 1989; Bowen and Beauchamp 1992). The springs in the Snake Valley that are occupied by least chub are not protected from livestock. The BLM has one fenced enclosure in the Gandy Salt Marsh Complex and is considering a second enclosure to protect other springs (R. Fike, BLM, pers. comm., 1993).

Crist and Holden (1990) and Lamarra (1981) indicated that water levels are important to least chub life history. The Las Vegas Valley Water District has requested a permit to drill a series of wells in the southern part of Snake Valley and surrounding areas (M. Barber, *in litt.* 1991). This could lower the water table significantly in Snake Valley, possibly drying up or lowering the water level in springs and marshes populated by least chub. These springs are totally dependent on underground water sources which flow from the Deep Creek Mountains to the west of Snake Valley. Other forms of water use within Snake Valley pose a minimal threat to least chub habitat at this time, and water withdrawals from surface and underground sources are estimated at 10 percent of the total yearly recharge rate (Van Pelt 1992).

B. Overutilization for commercial, recreational, scientific, or educational purposes. Some specimens have been collected for scientific and educational purposes (Sigler and Workman 1975; Workman et al. 1979; Crawford 1979; Osmundson 1985). However, no commercial or recreational uses for the least chub are known to exist. Overutilization for commercial or scientific purposes does not pose a threat to least chub.

C. Disease or predation. Disease or incidence of parasitism presently are not major factors affecting the least chub. Workman et al. (1979) found a single parasite called blackspot (the metacercariae of the digenetic trematode) infesting the least chub. Black spot (*Neascus cuticola*) produces small, black-pigmented nodules on the

skin, trunk musculature, and fins of fishes and is frequently encountered in the least chub, Utah chub (*Gila atraria*), and speckled dace (*Rhinichthys osculus*). Workman et al. (1979) reported black spot infection rates for the least chub as 1–23 nodules per fish, and that the infection rate varied from area to area and with season (highest in late summer and lowest in winter). Despite this moderate infestation rate, all least chubs examined appeared robust and in good condition. This parasite is apparently restricted to certain spring and pond areas.

Predation by nonnative fishes has been a major factor in the decline and extirpation of desert fishes in southwestern North America (Schoenherr 1981; Meffe 1985; Minckley et al. 1991). Hickman (1989) considered least chub to be "constantly threatened" by the introduction of nonnative species. Surveys of spring complexes indicate that where nonnative fishes were introduced, few if any least chub remain (Osmundson 1985; Shirley, *in litt.* 1989). Introduced game fishes which include largemouth bass, rainbow trout, common carp, and brook trout, are predators on least chub, and these species have been regularly stocked in least chub habitat (Workman et al. 1979; Sigler and Sigler 1987; Osmundson 1985; Crist 1990), no doubt contributing to the endangerment of least chub. In addition to game fish, other nonnative fishes also have been released into least chub habitat. Two fishes, the mosquitofish (*Gambusia affinis*) and rainwater killifish (*Luciana parva*), have similar diets to the least chub and are considered potential competitors. The mosquitofish poses a direct threat to the least chub because of its known aggressive predation on eggs and young of other fishes. Mosquitofish have been implicated in the decline of other desert fishes (Schoenherr 1981; Meffe 1985).

Osmundson (1985) and Sigler and Sigler (1987) also indicated that frogs, ducks, gulls, herons and egrets also are potential predators on least chub. Under normal circumstances, predation from these sources probably would not injure healthy populations of least chub. However, the effect of predation from the above combined sources could cause further depletion of already fragile populations.

D. The inadequacy of existing regulatory mechanisms. Although the State of Utah lists the least chub as a protected species, the Service believes that the present level of protection afforded by the State is not sufficient. The State does not allow taking of the species without permits, but it does not

protect or control actions which cause harm to the species or its habitat. The continued introduction of nonnative predators into least chub habitat and adjacent areas is difficult to control, and the State's protection does not address this issue.

The BLM has designated the Gandy Salt Marsh as an "Area of Critical Environmental Concern (ACEC)." This ACEC is inadequate in protecting the least chub because it does not prevent taking of the species. The establishment of an ACEC requires a management system which integrates the protection of riparian areas without infringement on "traditional permitted uses" (Van Pelt 1990). Accordingly, the Gandy Salt marsh ACEC does not prevent livestock grazing in and around least chub habitat and it does not extend over the fish's entire habitat. Finally, the ACEC is a BLM oil and gas leasing category 4, which normally closes the area to leasing. However, a clause was written into the BLM's Resource Management Plan which allows the District Manager to exempt the category 4 protections and to lease ACEC lands.

E. Other natural or manmade factors affecting its continued existence. Declines in native desert fishes in the Southwest has been associated with the introduction and proliferation of nonnative fishes. These nonnative fishes have, in some documented instances, extirpated small desert fishes by direct competition and predation (Schoenherr 1981; Meffe 1985; Minckley et al. 1991). The existence of small desert cyprinids, including the least chub, is presumably the result of a lack of other small competitors (Smith 1981; Minckley et al. 1991).

Least chub coexist with other native fishes, which include the Utah chub and speckled dace. However, the tiny and reclusive least chub competes poorly with nonnative species such as mosquitofish and rainwater killifish. The mosquitofish, rainbow trout, and largemouth bass are considered to be direct predators (Sigler and Workman 1975; Crawford 1979; Sigler and Sigler 1987). Least chub do not build nests or protect their eggs. Instead, they lay their eggs upon vegetation where they and the newly hatched larvae are vulnerable to predation (Crawford 1979).

Hybrid introgression between least chub and the Utah chub and speckled dace have been reported (Sigler and Sigler 1987). Reproductive isolating mechanisms have apparently broken down in some areas due to habitat alteration and degradation. This has resulted in overlaps of reproductive niches and breakdowns in behavior due to overcrowding (Crawford 1978;

Lamarra 1981). Least chub hybrids have been reported from springs near Callao, Utah, where least chubs once existed. But no hybrids have been reported from Leland Harris Springs Complex where least chub habitat has not been greatly altered by humans (Lamarra 1981).

Another potential threat to the least chub is a proposed mosquito abatement program for Juab County. The BLM has rejected the County's request to implement a mosquito control spraying program in marsh and spring areas on BLM administered lands (R. Fike, *in litt.* 1992). The rejection does not prevent the county from spraying on privately-owned lands. The effect of a mosquito control spraying program on the least chub is uncertain. Past studies (Workman et al. 1979) indicate that much of the least chub's diet is composed of insects, which includes mosquito larvae. To date, no studies have been undertaken to determine the effects of toxins on the chub or its environment.

Due to the extremely limited distribution of this species, least chub are very susceptible to stochastic events. There are only five known populations of least chub, and each population is small. A single catastrophic event could destroy a significant portion of remaining least chubs, or one or more of their populations. These remaining populations are vital in maintaining the genetic diversity of the species.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining whether to propose this listing action. Based on this evaluation, the preferred action is to list the least chub as endangered since this fish is restricted to only five known populations. Habitat loss and degradation continue to reduce its numbers in these remaining populations. Without additional protection of its habitat, continued degradation by livestock will result in a further reduction in its numbers. Competition and predation by other nonnative fishes pose severe threats to the remaining populations. The least chub is highly susceptible to additional habitat degradation and to habitat and population losses. For the reasons discussed below, the Service also is proposing to designate critical habitat for the least chub.

Critical Habitat

Critical habitat is defined in section 3 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) that 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 by the Secretary that such areas are essential for the conservation of the species." "Conservation" means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Section 4(a)(3) of the Act, as amended, and implementing regulations require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the same time the species is determined to be endangered or threatened. Critical habitat is being proposed for the least chub to include the following areas in Utah.

Northern Snake Valley Group including: Redding Springs Complex (Tooele County) and Bagley Ranch Springs Complex (Tooele and Juab Counties).

Southern Snake Valley Group including: Miller Spring (Juab County); Leland Harris Springs Complex (Juab and Millard Counties); Gandy Salt Marsh Complex (Millard County); and Bishop Springs Complex (Millard County).

Tule Valley Group including: Coyote Spring Complex (Millard County); Willow Spring (Millard County); Tule Springs Complex (Millard County); and South Tule Springs (Millard County). Legal descriptions for these areas are provided in the "Proposed Regulation Promulgation section.

In determining the areas to designate as critical habitat for a species, the Service considers those physical and biological attributes that are essential to species conservation. In addition, the Act stipulates that the areas containing these elements may require special management consideration or protection. Such physical and biological features are stated in 50 CFR 424.12 and include, but are not limited to, the following items:

- (1) Space for individual 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 generally,
- (5) Habitats that are protected from disturbance or are representative of the

historical, geographical and ecological distributions of a species.

In designating critical habitat, the Service is concerned with constituent elements within the defined areas that are essential to the conservation and recovery of the species. The areas proposed as critical habitat for the least chub provide the necessary constituent elements determine essential to the survival and recovery of the least chub. They include the following:

- adequate water quantity to: (1) maintain underground aquifer function, spring flow pressure and volume, and spring water surface elevation, (2) allow the fish to complete its life cycle (spawning, rearing, feeding, etc.), and (3) allow for movement between integral parts of its habitat and to reduce the overlap with niches of other native fishes;
- sufficient vegetation in spring and surrounding marsh riparian areas to provide cover, food, spawning sites, prevent erosion, and to meet other life history requirements of the fish; and
- a biological environment in which there is little or no interaction with nonnative fishes.

The Service recognizes that those habitats proposed as critical are not sufficient to achieve recovery for the species because they do not represent the historic range or all of the widely diverse habitat types that the species historically evolved in and occupied. The UDWR and BLM are currently surveying least chub habitats throughout its historic range to determine if the requisites necessary for recovery are still available. The Service, in the process of developing a "Least Chub Recovery Plan," may utilize these new data to identify additional critical habitat areas needed to ensure the recovery of the species. The Service may, at a future date, repropose critical habitat for the least chub.

Section 4(b)(8) of the Act requires, for any proposed or final regulation that designates critical habitat, a brief description and evaluation of those activities that may adversely modify or destroy such habitat or those activities that may be affected by such designation. Activities, such as habitat alterations through livestock impacts, pollution, or dewatering, would be detrimental to the survival of this species. Additionally, activities that provide for increased access to remote spring sites or that alter ground water or deep aquifer spring sources and flow rates would also be considered detrimental. Predation and competition from nonnative species on least chubs

are considered major factors causing its demise. Future activities on Federal lands or activities requiring Federal permits in the Snake Valley area would have to be taken under consultation to prevent further adverse impacts on the least chub or its habitat.

Impacts generally will be restricted to activities on Federal lands or on lands where proposed actions require Federal permits. The greatest impact would be on livestock grazing and its restriction in and around least chub habitat. Grazing would be limited within the general area occupied by least chub to prevent any further habitat degradation within proposed critical habitat. Drilling for water within proposed critical habitat would also be restricted. Presently, water regeneration within the Gandy Salt Marsh is adequate to allow for surface water use by livestock without impacting water levels within the marsh. Livestock could graze in pastures surrounding the proposed critical habitat areas if their access to aquatic habitats are prevented. Oil and gas exploration and production activities would be restricted within critical habitat. Surface activities and directional drilling are already restricted on BLM-owned lands that are designated as "Category 4" lands (these lands are already closed to leasing).

Presently, the recharging of ground water is sufficient to offset current withdrawals. Any federally funded or permitted water withdrawals (i.e., the Las Vegas Valley Water District permits for well drilling) would require section 7 consultation if it is shown that ground water withdrawals would impact critical habitat areas.

Section 4(b)(2) of the Act requires the Service to consider economic impacts of designating a particular area as critical habitat. The Service will prepare an economic analysis of the impacts of designating critical habitat for the least chub. Upon completion of the analysis, the Service will notify the public of its availability and will request public review and comments.

Available Conservation Measures

Conservation measures provided to species listed as endangered under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against take. Recognition through listing encourages conservation actions by Federal and State agencies and private individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the

prohibitions against taking and harm are discussed, in part, below.

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 and with respect to its critical habitat, if designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402. Section 7(a)(4) requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or that would result in destruction or adverse modification of proposed critical habitat. If the least chub is listed, section 7(a)(2) of the Act will require Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of this species or to destroy or adversely modify its critical habitat. If a Federal action could possibly affect the least chub or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Some portions of the least chub's proposed critical habitat are on private lands. The Federal Government has certain authority which may influence private undertakings in least chub critical habitat. Private activities that involve dredging and filling of wetlands would require a 404 permit (Federal Clean Water Act).

It is the policy of the Service to identify, to the extent known at the time a species is listed, specified activities that will not be considered likely to result in violation of section 9 of the Act. To the extent possible, activities that will be in violation also will be identified in as specific a manner as possible. The Service believes that the actions listed below might potentially result in a violation of section 9; however, possible violations are not limited to these actions alone:

- (1) Unauthorized collecting or handling of the species;
- (2) Destruction or alteration of the species habitat (i.e., water depletions that significantly modify spring functions; activities that change water quality or quantity; dredging or other physical modifications that impact the springs; introduction of nonnative species);
- (3) Improper use of herbicides, fertilizers, or pesticides;
- (4) Contamination of soil or ground water by spills, discharges or dumping of chemicals, silt, or other pollutants associated with agriculture and oil and gas activities;

Questions regarding whether a specific activity will constitute a violation of section 9 should be directed to the Field Supervisor of the Service's Salt Lake City Field office (see **ADDRESSES** section). Requests for copies of regulations concerning listed animals and general inquiries regarding prohibitions and permits may be addressed to the Fish and Wildlife Service, Ecological Services, P.O. Box 25486, Denver Federal Center, Denver, Colorado, (telephone 303/236-7398; facsimile 303/236/0027).

The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, codified at 50 CFR 17.21, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are found at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. Requests for copies of the regulations on animals and inquiries regarding them may be addressed to the Regional Director, U.S. Fish and Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, Colorado 80225 (telephone 303/236-7398).

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, any comments or suggestions concerning biological information and potential threats to the least chub are requested from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party. Comments are sought particularly concerning:

- (1) Biological, commercial trade, or other relevant data concerning any

threat (or the lack thereof) to the least chub;

(2) The location of any additional populations of least chub and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of this species;

(4) Current or planned activities which may adversely modify the area which is being considered for critical habitat; and

(5) Any foreseeable economic and other impacts resulting from the proposed designation of critical habitat.

(6) Final promulgation of this regulation on the least chub will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication

of the proposal. Such requests must be made in writing to the Field Supervisor (see ADDRESSES section).

National Environmental Policy Act

The Service has determined that Environmental Assessments and Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the Federal Register on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited herein is available upon request from the Field Supervisor (see ADDRESSES section).

Authors

The primary author of this proposed rule is Doug Young (see ADDRESSES section).

List of Subjects in 59 CFR Part 17

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

Proposed Regulation 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:

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.

2. It is proposed to amend § 17.11(h) is amended by adding the following, in alphabetical order under fishes, to the List of Endangered and Threatened Wildlife 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, least	* <i>Iotichthys phlegethontis</i> .	* U.S.A. (UT)	* Entire	* E	*	* 17.95(e)	* NA
*	*	*	*	*	*	*	*

3. It is further proposed to amend § 17.95(e) by adding critical habitat for the least chub, in the same alphabetical order as the species occurs in 17.11(h) to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

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

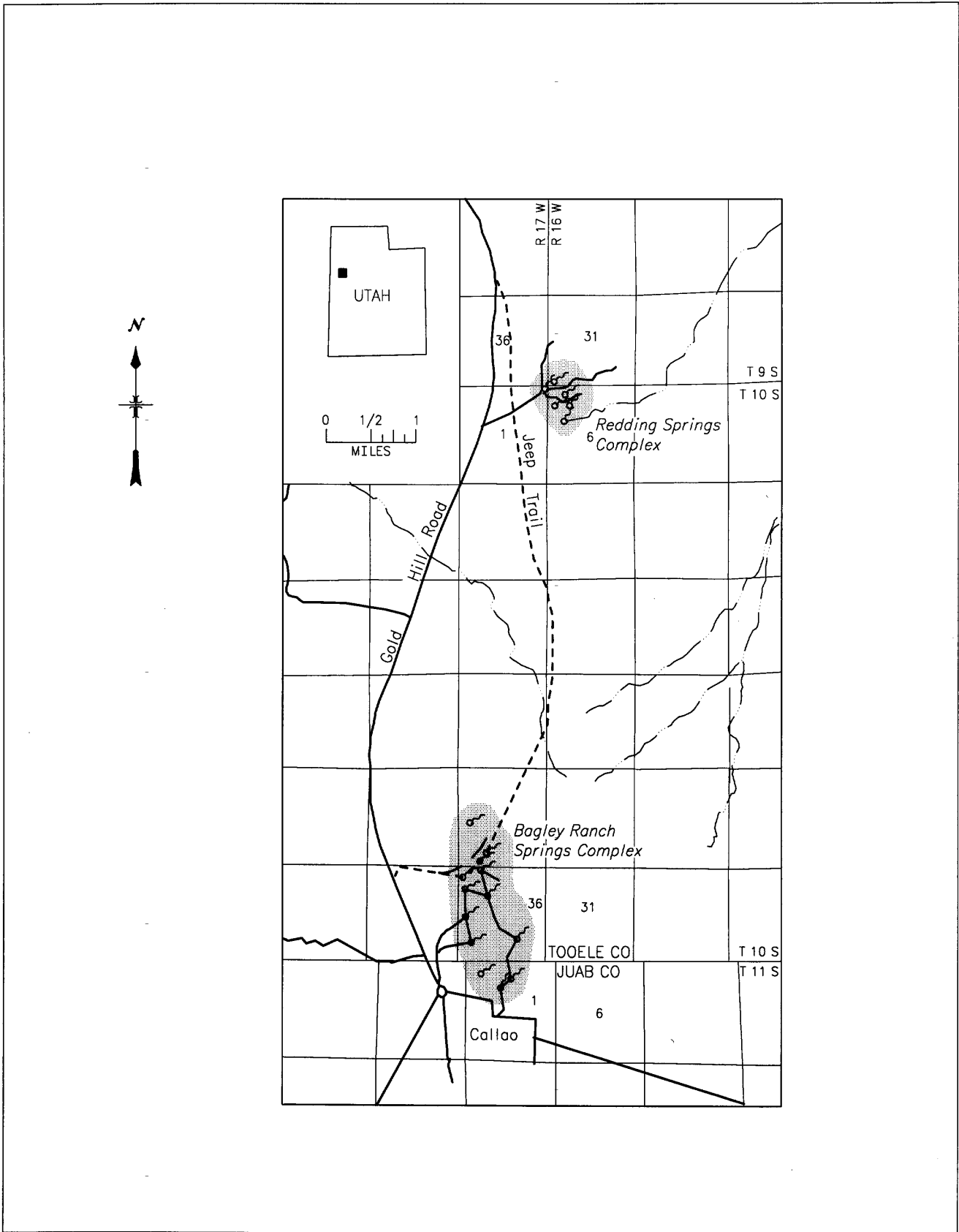
LEAST CHUB (*Iotichthys phlegethontis*)

1. Northern Snake Valley Group, Utah: Tooele and Juab Counties, Snake Valley. The following areas including all springs, outflow pools, runoffs streams, marshes, and a 1/8-mile zone on all sides of springs, pools, streams, and marshes:
T9S, R16W, SW1/4 Sec. 31; T9S, R17W, SE1/4 of SE1/4 Sec. 36; T10S,

R17W, E1/2, of NE1/4 Sec. 1, SW1/4 Sec. 25, W1/2 of SE1/4 Sec. 25, S1/2 of NW1/4 Sec. 25, E1/2 of SE1/4 Sec. 26, E1/2 of E1/2 Sec. 35, W1/2 Sec. 36, W1/2 of E1/2 Sec. 36; T10S, R16W, NW1/4 Sec. 6; T11S, R17W, NW1/2 Sec. 1, W1/2 of NE1/4 Sec. 1.

Note: Map follows:

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2. Southern Snake Valley Group, Utah, Juab and Millard Counties, Snake Valley. The following areas including all springs, outflow pools, runoff streams, marshes, and a 1/8-mile zone on all sides of springs, pools, streams, and marshes, excluding Foote Reservoir, but including the spring source for Foote Reservoir:

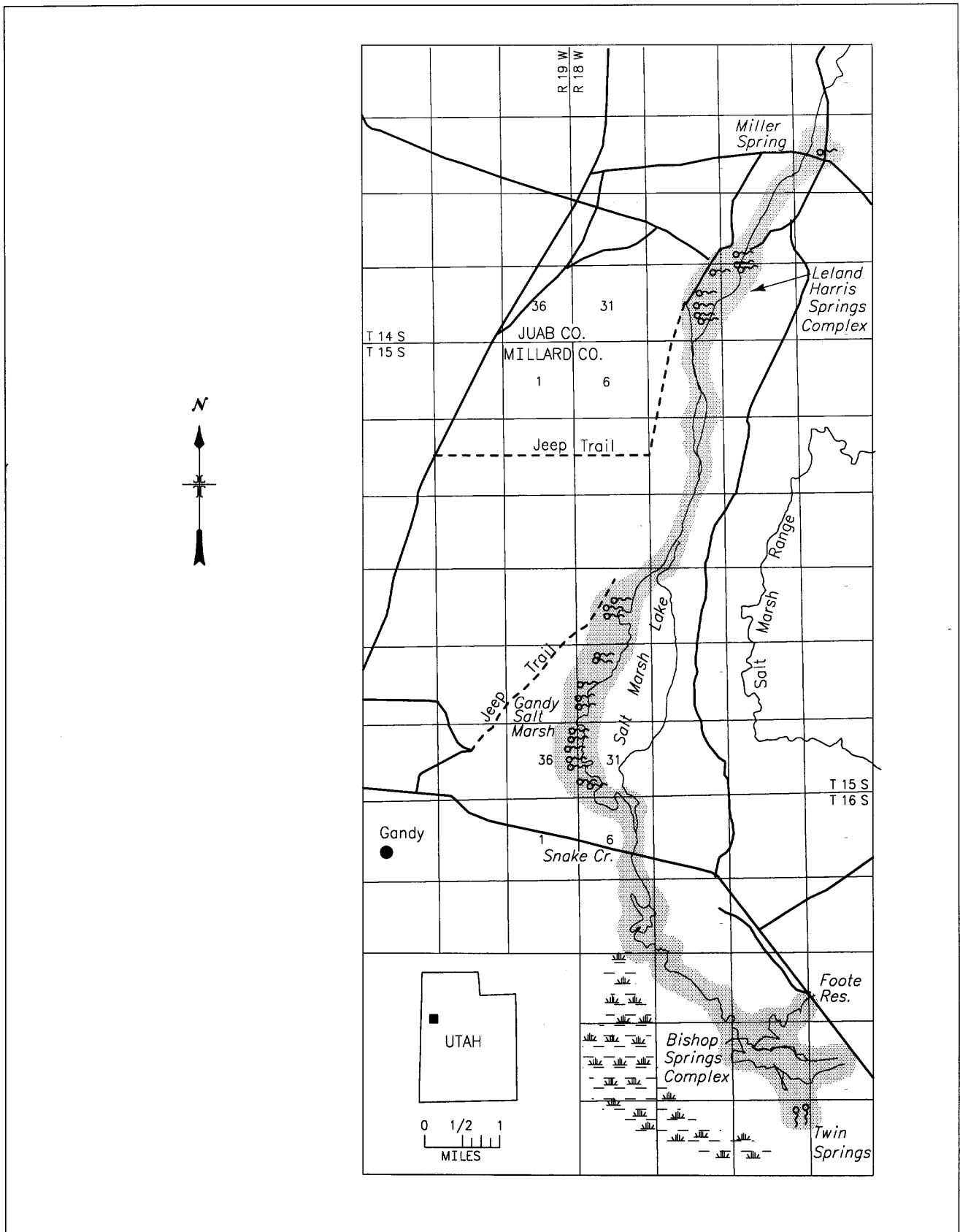
T14S, R18W, SW¹/₄ of NE¹/₄ Sec. 22, SE¹/₄ of NW¹/₄ Sec. 22, NW¹/₄ of NW¹/₄ Sec. 22, N¹/₂ of SW¹/₄ Sec. 22, SE¹/₄ of SE¹/₄ Sec. 21. W¹/₂ of NE¹/₄ Sec. 28, SE¹/₄ of NW¹/₄ Sec. 28, SW¹/₄ Sec. 28, SE¹/₄ of

SE¹/₄ Sec. 29, NW¹/₄ Sec. 33, NW¹/₄ of SW¹/₄ Sec. 33, E¹/₂ Sec. 32; T15S, R18W, E¹/₂ Sec. 5, E¹/₂ Sec. 8, NW¹/₄ of NE¹/₄ Sec. 17, SE¹/₄ of NW¹/₄ Sec. 17, NE¹/₄ Sec. 17, NW¹/₄ of SE¹/₄ Sec. 17, SE¹/₄ of SE¹/₄ Sec. 18, NW¹/₄ of NW¹/₄ Sec. 20, NE¹/₄ Sec. 19, SE¹/₄ of NW¹/₄ Sec. 19, E¹/₂ of SW¹/₄ Sec. 19 W¹/₂ of SE¹/₂ Sec. 19, W¹/₂ of NE¹/₄ Sec. 30, W¹/₂ Sec. 30, W¹/₂ of NW¹/₄ Sec. 31, SW¹/₄ Sec. 31, SW¹/₄ of SE¹/₄ Sec. 31; T15S, R19W, SE¹/₄ of SE¹/₄ Sec. 25, E¹/₂ of SE¹/₄ Sec. 25, E¹/₂ of NE¹/₄ Sec. 36, E¹/₂ of SE¹/₄ Sec. 36; T16S, R18W, E¹/₂ Sec. 6, N¹/₂ of

NW¹/₄ Sec. 6, E¹/₂ Sec. 7, W¹/₂ of W¹/₂ Sec. 8, NE¹/₄ of NE¹/₄ Sec. 18, NW¹/₄ Sec. 17, SW¹/₄ of NE¹/₄ Sec. 17, NE¹/₄ of SW¹/₄ Sec. 17, SE¹/₄ Sec. 17, S¹/₂ of S¹/₂ Sec. 16, SW¹/₂ of SW¹/₄ Sec. 15, E¹/₂ of NE¹/₄ Sec. 20, NE¹/₄ of SE¹/₄ Sec. 20, N¹/₂ Sec. 21, N¹/₂ of SW¹/₄ Sec. 21, SE¹/₄ Sec. 21, S¹/₂ of NW¹/₄ Sec. 22, SW¹/₄ of NE¹/₄ Sec. 22, N¹/₂ of SW¹/₄ Sec. 22, SW¹/₄ of SW¹/₄ Sec. 22, NW¹/₄ of SE¹/₄ Sec. 22, E¹/₂ of NE¹/₄ Sec. 28, W¹/₂ of NW¹/₄ Sec. 27.

Note. Map follows:

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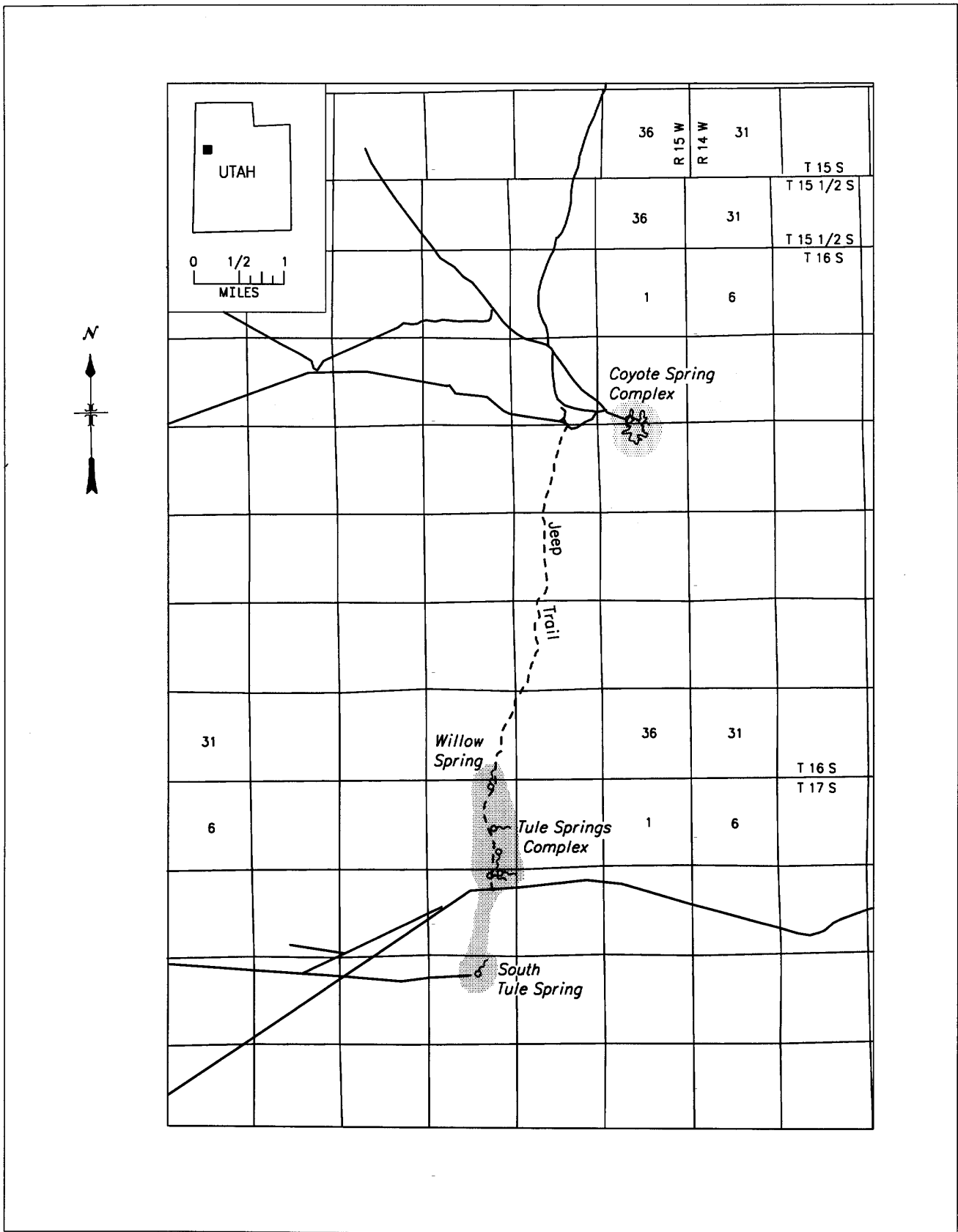


3. Tule Valley Group, Utah: Millard County, Tule Valley. The following areas including all springs, outflow pools, runoff streams, marshes, and a 1/8-mile zone on all sides of springs, pools, streams, and marshes:

T16S, R15W, SE¹/₄ of SW¹/₄ Sec. 12, SW¹/₂ of SE¹/₄ Sec. 12, E¹/₂ of NW¹/₄ Sec. 13, W¹/₂ of NE¹/₄ Sec. 13, S¹/₂ of SE¹/₄ Sec. 34; T17S, R15W, E¹/₂ Sec. 3, W¹/₄ of SW¹/₂ Sec. 2, N¹/₂ of NE¹/₄ Sec. 10, SW¹/₄ of NE¹/₄ Sec. 10, W¹/₂ of SE¹/₄ Sec. 10, W¹/₂ of NE¹/₄ Sec. 15, E¹/₂ of NW¹/₄ Sec. 15.

Note. Map follows:

BILLING CODE 4310-55-M



Constituent elements for all areas of critical habitat include permanent sources of water, water quality and quantity to satisfy requirements for all life history stages of the fish, a predator-free habitat, adequate vegetative cover, and other environmental features that may be deemed necessary upon site-specific evaluations.

Dated: September 18, 1995.

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

[FR Doc. 24320 Filed 9-28-95; 8:45 am]

BILLING CODE 4310-55-M

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 227 and 425

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17 and 425

RIN 1018-AD 12

Endangered and Threatened Species; Proposed Threatened Status for a Distinct Population Segment of Anadromous Atlantic Salmon (*Salmo salar*) in Seven Maine Rivers

AGENCIES: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce; and Fish and Wildlife Service (FWS), Interior.

ACTION: Proposed rule.

SUMMARY: The NMFS and the FWS (collectively, the Services) have completed a status review of U.S. Atlantic salmon populations and identified a distinct population segment (DPS) in seven Maine rivers. Atlantic salmon in these rivers are likely to become endangered in the foreseeable future and therefore are being proposed for listing as threatened pursuant to the Endangered Species Act of 1973 (Act). This proposed rule includes joint regulations which apply all prohibitions of 50 CFR 17.31 to the DPS, but allows exceptions for incidental take under sections 4(d) and 10 of the Act. The special rule allows for a state plan, approved by the Services, to define the manner in which certain activities could be conducted without violating the Act. If this proposed listing is finalized, the protective measures of the Act will extend to the Atlantic salmon in the seven rivers, and a recovery plan will be prepared and implemented.

DATES: Comments from all interested parties must be received by December 28, 1995. Public hearing requests must be received by November 13, 1995.

ADDRESSES: Comments and materials concerning this proposed rule and requests for public hearings should be sent to the Chief, Division of Endangered Species, FWS, 300 Westgate Center Drive, Hadley, Massachusetts 01035, or the Chief, Habitat and Protected Resources Division, NMFS, 1 Blackburn Drive, Gloucester, Massachusetts 01930.

FOR FURTHER INFORMATION CONTACT: Paul Nickerson at 413-253-8615 or Mary Colligan at 508-281-9116.

SUPPLEMENTARY INFORMATION:

Background

In October and November 1993, the Services received a petition under the Act to list anadromous Atlantic salmon as endangered. The Services published a notice of finding on January 20, 1994 (59 FR 3067), stating that the petition presented substantial information indicating that the requested action may be warranted. The notice also requested information from the public. A biological review team (Team) comprised of staff from the Services compiled and analyzed all available scientific information pertaining to the status of anadromous Atlantic salmon in the United States. The Team prepared a report entitled "Status Review for Anadromous Atlantic Salmon in the United States, January 1995" (Status Review). The Status Review provides detailed information and references used as the basis for this proposed rule. This Status Review was summarized in a March 17, 1995, finding (60 FR 14410) and is available upon request (see **ADDRESSES**). Further details from the Status Review are provided below. In the March 17, 1995, finding, the Services stated that they would promptly publish a proposed rule with appropriate listing actions.

Life History

Anadromous Atlantic salmon have a relatively complex life history that extends from spawning and juvenile rearing in freshwater rivers to extensive feeding migration in the high seas. As a result, Atlantic salmon have several distinct phases in their life history that are identified by specific behavioral and physiological changes. Adult Atlantic salmon ascend the rivers of New England beginning in spring, a migration that peaks in June and continues into fall. Spawning occurs in late October through November. Good spawning habitat has a gravel substrate

and adequate water circulation to keep the eggs well oxygenated. Female anadromous Atlantic salmon produce between 1,500 and 1,800 eggs per kilogram (2.2 pounds) of body weight; on average each female Maine Atlantic salmon produces 7,200 eggs. Eggs hatch in late March or April and the resulting alevins remain in the redd for about six weeks and are nourished by their yolk sac. When the alevins emerge from the gravel about mid-May and begin feeding, they are referred to as fry. Fry become parr as vertical bars become visible on the sides of their bodies. In spring, when the parr are two or three years of age and 12.5 centimeters (cm) to 15 cm (5 to 6 inches) long, they undergo smoltification, a process where morphological and physiological changes prepare the smolt for the transition from fresh to salt water. Most smolts in New England rivers migrate to sea in May and begin their ocean feeding migration.

The marine life history of Atlantic salmon of U.S. origin is not as well understood as the freshwater phase. Scientists have discovered correlations between natural mortality in the marine environment and abiotic factors, particularly sea surface temperature. Atlantic salmon of U.S. origin are highly migratory, undertaking long marine migrations from the mouths of U.S. rivers to the northwest Atlantic Ocean where they are distributed seasonally over much of the region. Upon entry into the nearshore waters of Canada, the U.S. post-smolts become part of a mixture of stocks of Atlantic salmon from various North American streams. Data from commercial harvest indicate that post-smolts overwinter in the southern Labrador Sea and in the Bay of Fundy. Direct sampling during the winter months is needed to better understand post-smolt Atlantic salmon distribution in the North Atlantic. Most Atlantic salmon of U.S. origin spend two winters in the ocean before returning to fresh water for spawning. Those that return after only one year at sea are called grilse.

Consideration as a "Species" Under the Act

The Act defines species as "any species of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife that interbreeds when mature." This definition allows for the recognition of distinct population segments at levels below taxonomically recognized species or subspecies. To qualify as a DPS, a population (or group of populations) of indigenous Atlantic salmon must be reproductively isolated from conspecific