

Dated: March 17, 1998.

Jamie Rappaport Clark,

Director, Fish and Wildlife Service.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AE85

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the Cowhead Lake Tui Chub

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) proposes to determine the Cowhead Lake tui chub (*Gila bicolor vaccaceps*), to be an endangered species under the authority of the Endangered Species Act of 1973, as amended (Act). The Cowhead Lake tui chub is a fish that is found only in Cowhead Slough and connected ditches within the bed of Cowhead Lake in extreme northeastern Modoc County, California. This subspecies is threatened throughout its range by a variety of human impacts, including the dewatering of Cowhead Lake, livestock grazing, agricultural activities, and by random naturally occurring events. This proposal, if made final, would implement Federal protection provided by the Act. The Service seeks data and comments from the public on this proposal.

DATES: Comments from all interested parties must be received by May 29, 1998. Public hearing requests must be received by May 14, 1998.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, Sacramento Fish and Wildlife Service Office, U.S. Fish and Wildlife Service, 3310 El Camino Avenue, Suite 130, Sacramento, California 95821-6340. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Mr. Wayne S. White, Field Supervisor, at the above address (telephone 916/979-2710).

SUPPLEMENTARY INFORMATION:

Background

The Cowhead Lake tui chub was first recognized as a distinct subspecies by Hubbs and Miller (1948) and was first

described by Bills and Bond (1980). The following morphological description is taken from Bills and Bond (1980) and Moyle *et al.* (1989). The Cowhead Lake tui chub is a small fish in the minnow family (Cyprinidae) approximately 85-115 millimeters (3-4.5 inches) from the nose to the middle of the tail and is distinguished from the other subspecies of tui chub by the number of gill rakers (bony projections in the gills). Coloration is silver like other subspecies of tui chub, except for a dark lateral stripe and dark speckles scattered on the cheek, operculum (area behind the eye) and lower body. The pectoral fins usually exhibit a row of melanophores (cells containing dark pigment) along the anterior rays and a few specimens have exhibited a concentration of pigment on the pelvic and anal fins.

There have been no formal studies on the life history or habitat of the Cowhead Lake tui chub. The following information refers to tui chubs in general and is taken from Moyle (1976).

Tui chubs occur in a wide variety of habitats, most commonly in the weedy shallows of lakes and quiet waters in sluggish rivers. They do well in a wide variety of water conditions from warm to cold, and clear to eutrophic. In the fall they seek out deeper water and may spend winters in a semi-dormant state on the bottom of lakes. Tui chubs are opportunistic omnivores concentrating on invertebrates associated with bottom or aquatic plants (i.e., clams, insect larvae, insects, crayfish) as well as algae and plant material. Tui chub usually spawn from late April to late June; eggs adhere to plants or the bottom and hatch in 9 days. In large deep lakes, tui chubs tend to form large schools in shallow water frequently associated with beds of aquatic vegetation. In shallow lakes, with heavy aquatic growth, schooling is less noticeable. Tui chubs tend to disperse amongst the vegetation presumably as protection from predators. Tui chubs appear to be able to adapt to the severe long and short-term climatic fluctuations characteristic of the interior basins where they are most common. The family Cyprinidae in general has been successful because they have a well-developed sense of hearing, release a fear scent when injured (a warning signal to others), have pharyngeal teeth (broader diet), and exhibit high fecundity. Despite these advantages, many native minnows are declining in numbers as their environment deteriorates beyond their ability to cope with the changes or they are displaced by more aggressive introduced species.

Cowhead Lake tui chub are found in the vicinity of Cowhead Lake, a

Pleistocene lake in the extreme northeastern corner of Modoc County, California, in an area known as the Modoc Plateau. The Modoc Plateau consists of molten basalt that formed approximately 70 million years ago (Young *et al.* 1988). The area is characterized by lava rims, upland plateaus, lava flows and tubes, ancient pluvial lake beds and large-volume springs, and shallow soils (Young *et al.* 1988). Volcanic rock is porous, therefore, most of the rainfall percolates through into the groundwater. Surface water is minimal, but rainfall and snowmelt in the mountains feed the groundwater, which surfaces as springs. The habitat type is sagebrush steppe, which is generally a treeless, shrub-dominated community characterized by sagebrush (*Artemisia* species) with perennial bunch grasses in the understory and some juniper pine (Young *et al.* 1988). The area is characterized by cold, harsh winters, dry summers, and low rainfall.

The lakebed of Cowhead Lake is approximately 1,100 hectares (2,700 acres) based on assessors maps (Modoc County, California, Jan. 1982), with an elevation of 1,597 meters (5,241 feet). Historically, Cowhead Lake and Cowhead Slough are thought to have been marsh habitat, based on the soil type. In its natural state the lake's water levels were probably variable. This habitat type would have retained and stored its water, slowly discharging it via Cowhead Slough to Twelvemile Creek and on into the Warner Basin (Roger Farschon, Bureau of Land Management (BLM), pers. comm., 1997a). Cowhead Slough and Cowhead Lake are fed mainly by snowmelt runoff and springs via Eightmile Creek and other smaller tributaries from the Warner Mountains. There may also be several faults at the upper end of the slough that provide subsurface flow (Sato *in litt.* 1992). Historically the lake was probably shallow and naturally dried up on occasion (Peter Moyle, University of California, Davis, pers. comm., 1997). Approximately 40 percent of the lakebed occurs on private land and 60 percent of the lakebed has unknown title based on a title search done in 1997 (Modoc County Title Co. *in litt.* 1997). The lake went dry sometime in the 1930's. Since the drought ended, and continuing up to the present day, the lake has been mechanically pumped dry so that the lakebed could be used to grow hay. There is a series of irrigation ditches, two reservoirs on nearby creeks, and a mechanical pumping system, which

have modified the hydrology of the Cowhead basin.

Cowhead Lake tui chub were found in a spring and a reservoir adjacent to Cowhead Lake (Miller 1939), in irrigation ditches within Cowhead Lake (Sato *in litt.* 1993), and in Cowhead Slough (Moyle *in litt.* 1974, Sato *in litt.* 1992 and 1993, Olson *in litt.* 1997, Jack Williams, BLM, pers. comm., 1997). The entire current estimated range of this species is approximately 5.4 kilometers (3.4 miles) of Cowhead Slough and connected ditches within the bed of Cowhead Lake. Approximately one half of the range is on public land managed by the Bureau of Land Management (BLM). The other half of the range is on land that has been managed by private ownership since the 1950's. However, the Service has not been able to locate documentation of title in the public records to support this assumption. This portion of the tui chub's range will be referred to as private land in this proposed rule, but the Service is not currently clear on the ownership of this portion of the species range.

There are no population estimates available for the Cowhead Lake tui chub. Surveys in the lake bed and adjacent springs and reservoirs on private lands have been limited because access has been restricted. Surveys on adjacent BLM land have focused on distribution and not estimating population numbers.

Previous Federal Action

On December 30, 1982, the Service published a revised notice of review for vertebrate wildlife in the **Federal Register** (47 FR 58454) designating the Cowhead Lake tui chub as a category 2 candidate. Category 2 was composed of taxa for which the Service had information indicating that threatened or endangered status might be warranted, but for which adequate data on biological vulnerability and threats were not available to support issuance of listing proposals. As a result of additional information obtained, the Service reclassified the Cowhead Lake tui chub as a category 1 candidate in the November 21, 1991, notice of review (56 FR 58804). The Cowhead Lake tui chub was included as a candidate in the February 28, 1996 (61 FR 7596), and September 19, 1997 (62 FR 49398), notices of review.

The processing of this proposed rule conforms with the Service's final listing priority guidance for fiscal year 1997, published in the **Federal Register** on December 5, 1996 (61 FR 64475). In a **Federal Register** notice published on October 23, 1997 (62 FR 55628), the guidance was extended beyond fiscal

year 1997. The fiscal year guidance clarifies the order in which the Service will process rulemakings following two related events: (1) The lifting on April 26, 1996, of the moratorium on final listings imposed on April 10, 1995 (Pub. L. 104-6), and (2) the restoration of significant funding for listing through passage of the Omnibus Budget Reconciliation Act on April 26, 1996, following severe funding constraints imposed by a number of continuing resolutions between November 1995 and April 1996. Based on biological considerations, this guidance establishes a "multi-tiered approach that assigns relative priorities, on a descending basis, to actions to be carried out under section 4 of the Act" (61 FR 64479). The guidance calls for giving highest priority to handling emergency situations (Tier 1) and second highest priority (Tier 2) to resolving the listing status of the outstanding proposed listings. Tier 3 includes the processing of new proposed listings for species facing high magnitude threats. This proposed rule for the Cowhead Lake tui chub falls under Tier 3. The guidance states that "effective April 1, 1997, the Service will concurrently undertake all of the activities presently included in Tiers 1, 2, and 3" (61 FR 64480). The Service has thus begun implementing a more balanced listing program, including processing more Tier 3 activities. The completion of this Tier 3 activity (a proposal for a species with a listing priority of 3 (high-magnitude, imminent threats)) follows those guidelines.

Summary of Factors Affecting the Species

Section 4 of the Act and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Cowhead Lake tui chub are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The historic range of the Cowhead Lake tui chub is thought to be Cowhead Lake, when it retained water, and the springs and low gradient portions of the creeks draining into Cowhead Lake (P. Moyle, pers. comm., 1997; USDI 1997). The lake was probably shallow and dried up naturally on occasion, periodically confining Cowhead Lake tui chub to the streams and springs (P. Moyle, pers. comm. 1997). The lakebed itself is 1,100

hectares (2,700 acres) with a topographic gradient of 0 to 5 meters (0 to 16 feet) (based on topographic measurements on a 1990 USGS 7.5 minute quadrangle map). The surface flow of water is naturally highly variable in this volcanic, high desert area. The amount of suitable aquatic habitat for this species may vary from year to year based on the water supply. It is unclear precisely what role the tributary springs and creeks currently play in the life history of Cowhead Lake tui chub. It is also unknown what the impact of flooding was when the lakebed was in its natural state.

The diversion of water from Cowhead Lake has eliminated approximately 98 percent of the Cowhead Lake tui chub's historical range and is a threat to the Cowhead Lake tui chub. Before the turn of the century a water diversion ditch (Peterson ditch) was built in the Warner mountains west of Cowhead Lake, which diverts water from Twelvemile Creek and possibly from Eightmile Creek into Surprise Valley, southwest of Cowhead Lake (R. Farschon, pers. comm., 1997a). Another ditch was built in the 1910's (Sato *in litt.* 1992) on the Schadler property that appears to divert water from Peterson ditch into Eightmile Creek. In the 1930's the lake went dry and ranchers started growing hay in the lakebed. When the drought ended, the connection between Cowhead Lake and Cowhead Slough was dredged so that the lake would stay drained to permit continued hay production. Cowhead Slough was dredged 1-1.5 meters (3-5 feet) deep from the lakebed north to the edge of public BLM lands (R. Farschon, 1997a). In the 1960's a privately owned reservoir was built on Eightmile Creek to allow controlled irrigation to two pastures. This water is ultimately collected in a ditch in the lakebed, which runs into Cowhead Slough. Barrel Springs (2 miles to the southeast of Cowhead lake) and its associated tributaries used to contribute water to Cowhead Lake until its water flow was diverted for agricultural uses. Currently the seasonal waters from the Barrel Springs area drain to the northeast of the lake and into Cowhead Slough. The lake usually holds some water during the wet season before pumping begins in the spring. In the mid-1980's and in 1997 there was enough water to fill the lake. Beginning around April each year, water in Cowhead Lake is actively pumped into Cowhead Slough and as a result no water remains in the lakebed outside of the ditches. The historical shallow-water marsh habitat is now maintained as irrigated pasture.

The current distribution of Cowhead Lake tui chub, based on recent surveys (1992 to 1997), is in various pools in Cowhead Slough and in connected ditches within the bed of Cowhead Lake from approximately 1 kilometer (0.5 mile) north of the confluence of Elevenmile Creek to the irrigation ditch in the lakebed of Cowhead Lake, approximately 5.4 kilometers (3.4 miles). Cowhead Lake tui chub have been observed feeding and hiding in filamentous mats of algae in the slough (Sato *in litt* 1993). Mats of *Ranunculus* also appear to provide cover for young of the year in the slough (Sato *in litt* 1993). Cowhead Slough consists of a series of pools (95 percent) and riffles (5 percent) which wind through a lava canyon approximately 50 meters (164 feet) wide and approximately 6.4 kilometers (4 miles) long. The size of the water course itself is far narrower than the canyon and varies according to the amount of runoff and snowmelt each year. The slough ranges from 1–2 meters (4–6 feet) wide (Ken Sanchez, USFWS, pers. comm., 1997) to a trickle, with large pools up to 10 meters (33 feet) wide, 50 meters (164 feet) long and 1 meter (3 feet) deep (Moyle *in litt* 1974). In the mid-1980's pools were reported to be up to 2 meters (6.5 feet) deep due to heavy precipitation in those years (Sato *in litt* 1992). Moyle *et al.* (1989) reported the bottom of the channel as 80 percent mud, 5 percent sand, and 15 percent boulder/bedrock with abundant rooted and floating vegetation, but little overhanging canopy cover. According to Sato (*in litt* 1993) the upper end of the slough above the pump on private land has more riparian habitat (willows) and more perennial water than the rest of slough. There is also a difference in topography between the private and public sections of the slough. The private land has a steeper gradient, more cobbles and boulders, deeper pools, and more open water than the reaches on public lands. These factors may account for why there appear to be more Cowhead Lake tui chub in Cowhead Slough on the private land. It has also been hypothesized that as the slough dries up annually, the fish move upstream to the more perennial water.

The banks of Cowhead Slough contain mostly short-cropped annual grasses with minimal riparian vegetation (Sato *in litt* 1992). The water has been reported as muddy and turbid during surveys from possible erosion of the slough banks caused primarily by cattle grazing and from drainage of ephemeral streams into the slough (Moyle *in litt* 1974, Sato *in litt* 1992). Cowhead Slough and the ditches in the lakebed

are within either public or private grazing allotments, which are actively grazed (R. Farschon, pers. comm., 1997b). The lack of riparian habitat can reduce the amount of water retained in the slough later in the year (Sato *in litt* 1993). The degradation of water quality can reduce oxygen levels, visibility and prey abundance for the Cowhead Lake tui chub.

Prior to being drained the lake is thought to have contained the majority of the Cowhead Lake tui chub population. Currently the population appears to be restricted to Cowhead Slough and connected ditches within the lake bed, which have been severely altered from their natural condition. The entire population occurs in one connected drainage within a very confined area 5.4 kilometers (3.4 miles), and there are no additional refugial populations. Protection of the habitat within this very limited range is required to conserve the Cowhead Lake tui chub. Further loss of habitat from agricultural modifications is a threat to the continued existence of the Cowhead Lake tui chub.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* The Cowhead Lake tui chub has not been documented as a commercial or recreational fish species. It has been little studied and there are only a handful of documented collections. This factor is not considered a threat to the existence of the Cowhead Lake tui chub.

C. *Disease or predation.* Aquatic snakes and birds are likely predators of Cowhead Lake tui chub. This species is most vulnerable to predation during drought periods when much of the drainage dries up and Cowhead Lake tui chub are concentrated in smaller pools. The only other species detected in Cowhead Lake tui chub habitat are speckled dace (*Rhinichthys osculus*) and an occasional trout, which do not appear to pose a threat to the Cowhead Lake tui chub. Introduction of nonnative fish, game fish, or other tui chubs could harm the Cowhead Lake tui chub through increased competition, predation, and hybridization. There have been no documented instances of disease adversely affecting the Cowhead Lake tui chub. If a disease were introduced, the tui chub population would be at great risk because of its small size and confined range.

D. *The inadequacy of existing regulatory mechanisms.* Currently there are no regulatory mechanisms that specifically protect the Cowhead Lake tui chub or its habitat. The current documented range of the Cowhead Lake tui chub is approximately 50 percent on

private land and 50 percent on public land. It appears that the majority of the population occurs on private land where there is more perennial water. The Cowhead Lake tui chub is considered a species of special concern by CDFG as Class 1: Endangered. This designation indicates that the species meets the State definition to qualify for official listing, but is not officially listed yet. The Federal status of the Cowhead Lake tui chub is as a candidate species (see section on Previous Federal Action). There is currently no regulatory authority vested in either the State or Federal designations that offers protection or appropriate management for this species. This lack of adequate regulatory protection is a threat to the existence of the Cowhead Lake tui chub.

The National Environmental Policy Act (NEPA) and section 404 of the Clean Water Act (CWA) represent the primary Federal laws that could potentially afford some protection to listed species, however, neither of these laws protect candidate species. The conversion of land to agricultural uses that may adversely affect the Cowhead Lake tui chub is generally unregulated at any level of government. For example, the U.S. Army Corps of Engineers (Corps) has promulgated regulations that exempt some farming, forestry, and maintenance activities from the regulatory requirements of section 404 (33 CFR 323.4).

The California Environmental Quality Act (CEQA) offers some opportunities to protect rare and endangered plants or animals, as well as species that are eligible for listing but are not currently listed. If a proposed project may significantly impact a species, it is possible to require mitigation. However, this protection is at the discretion of the lead agency involved and social and economic considerations can override requirements for mitigation or protection. Proposed revisions to CEQA guidelines, if made final, may weaken the current protections for threatened, endangered and other sensitive species. Section 1603 of California Fish and Game Code authorizes the California Department of Fish and Game (CDFG) to regulate streambed alterations. Such alterations include any work that substantially diverts, alters or obstructs the natural flow or substantially changes the bed, channel or bank of any river, stream or lake. At this time, the Service is not aware of any 1603 permit for the activities occurring in Cowhead Lake and Cowhead Slough.

E. *Other natural or manmade factors affecting its continued existence.* Pest control programs (i.e., USDA-APHIS grasshopper control program) that

introduce pesticides into the drainage are a threat to the Cowhead Lake tui chub. The water supply in this high desert habitat is low and variable and naturally limits the amount of suitable habitat for the Cowhead Lake tui chub. This natural condition offers fewer options for refuge for Cowhead Lake tui chub in the event of drought, harsh winter conditions or human-induced environmental impacts.

The entire population of Cowhead Lake tui chub occurs in less than 2 percent of its historical range and, therefore, is vulnerable to the risks associated with small, restricted populations. Impacts to species populations that can lead to extinction include: the loss or alteration of essential elements (habitat, food), the introduction of limiting factors into the environment (poison, predators), and catastrophic random changes or environmental perturbations (extreme weather, disease) (Gilpin and Soule 1986). Many extinctions are the result of a severe reduction of population size by some deterministic event, followed by a random natural event that extirpates the species. The smaller a population is, the greater its vulnerability to stochastic perturbations (Terbough and Winter 1980, Gilpin and Soule 1986, Shaffer 1987). The elements of risk that are amplified in very small populations include: (1) The impact of high death rates or low births rates; (2) the effects of genetic drift and inbreeding; and (3) deterioration in environmental quality. When the number of individuals in the sole population of a species or subspecies is sufficiently low, the effects of inbreeding may result in the expression of deleterious genes in the population (Gilpin 1987). Deleterious genes reduce individual fitness in various ways, most typically as decreased survivorship of young. Genetic drift in small populations decreases genetic variation due to random changes in gene frequency from one generation to the next.

This reduction of variability within a population limits the ability of that population to adapt to environmental changes.

One scenario where loss of habitat may cause extinction is when the species is a local endemic (because of their isolation and restricted range) (Gilpin and Soule 1986). The Cowhead Lake tui chub is a local endemic, which can be locally abundant, yet lives in a very restricted area. Because the sole population is small and occurs in one single drainage, it is extremely vulnerable to natural or human-made environmental impacts. There are no known populations of Cowhead Lake tui

chub outside of Cowhead Slough for recolonization if a catastrophic event were to occur in Cowhead Slough. While the species still occurs within its limited range, we do not know whether the population is declining, how habitat conditions may be affecting the population, and how the small population size may be affecting genetic and behavioral stability. Based on the vulnerability of this small population in its limited range, and the lack of any refugial populations or habitat, the Service believes that threats to current occupied or potential habitat and individuals put this species at risk of being extirpated.

The Service has carefully assessed the best scientific and commercial information available regarding the present and future threats faced by this species in determining this proposed rule. This species is threatened throughout its range by a variety of human impacts, including the dewatering of Cowhead Lake, livestock grazing, agricultural activities, and by random naturally occurring events. Based on this evaluation, the preferred action is to list Cowhead Lake tui chub as endangered based on the risk of extinction throughout all of its range. Critical habitat is not being proposed for this species for reasons discussed in the "Critical Habitat" section of this proposal.

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 determination 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 and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time a species is determined to be endangered or threatened. Service regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other

human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species. The Service determines that designation of critical habitat for the Cowhead Lake tui chub is not prudent due to lack of benefit to the species.

Critical habitat receives consideration under section 7 of the Act with regard to actions carried out, authorized, or funded by a Federal agency (see Available Conservation Measures section). As such, designation of critical habitat may affect activities on Federal lands and may affect activities on non-Federal lands where such a Federal nexus exists. Under section 7 of the Act, Federal agencies are required to ensure that their actions do not jeopardize the continued existence of a species or result in destruction or adverse modification of critical habitat. However, both jeopardizing the continued existence of a species and adverse modification of critical habitat have similar standards and thus similar thresholds for violation of section 7 of the Act. In fact, biological opinions that conclude that a Federal agency action is likely to adversely modify critical habitat but not jeopardize the species for which the critical habitat has been designated are extremely rare. Also, the designation of critical habitat for the purpose of informing Federal agencies of the locations of occupied Cowhead Lake tui chub habitat is not necessary because the Service can inform Federal agencies through other means. For these reasons, the designation of critical habitat for the Cowhead Lake tui chub would provide no additional benefit to the species beyond that conferred by listing, and therefore, such designation is not prudent.

Cowhead Lake tui chub has an extremely narrow distribution in one small reach (5.4 kilometers (3.4 miles)) of Cowhead Slough. At the present time, no other site is known to be occupied by or suitable for this fish. However, the Service believes that a high level of awareness already exists for this species due to numerous efforts since 1994, between private and public entities, to develop and implement a conservation agreement to conserve and protect this species (J. Danna *in litt.* 1994a and 1994b, J. Schadler *in litt.* 1994 and 1995, S. Stokke *in litt.* 1997). In addition, the Cowhead Lake tui chub has been included in the draft Recovery Plan for Warner Basin fishes and may benefit to some degree from recovery actions specified for the listed species in the plan (USDI 1997). The private

landowners at Cowhead Lake are aware of the Cowhead Lake tui chub's presence and extremely limited habitat, as are the BLM managers and others involved in management of the area. Therefore, designation of critical habitat would provide no benefit with respect to notification. In addition, given the species' narrow distribution and precarious status, virtually any conceivable adverse effect to the species' habitat would very likely jeopardize its continued existence. Designation of critical habitat for Cowhead Lake tui chub would, therefore, provide no benefit to the species apart from the protection afforded by listing the fish as endangered.

Protection of the habitat of Cowhead Lake tui chub will be addressed through the section 4 recovery process and the section 7 consultation process. The Service believes that activities involving a Federal action which may affect Cowhead Lake tui chub can be identified without designating critical habitat by providing Federal agencies with information on the locations of occupied habitats and information on the kinds of activities which could affect the species. For the reasons discussed above, the Service finds that the designation of critical habitat for the Cowhead Lake tui chub is not prudent.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in conservation actions by Federal, State, and local agencies, private organizations, and 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 certain activities are discussed, in part, below.

The Cowhead Lake tui chub has been included in a draft Recovery Plan for the threatened and rare native fishes of the Warner Basin and Alkali (USDI 1997). The Cowhead Lake tui chub was included because it is a rare native endemic that occurs within the Warner Basin that could potentially benefit from recovery actions in the Warner Basin for the other listed native fishes.

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 any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat, if any is designated. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. Approximately one-half of the only known population of Cowhead Lake tui chub is on BLM-managed land including grazing allotments within the range of this species. Grazing can decrease water quality by removing vegetation on streambanks and uplands, thereby increasing erosion and sedimentation, and by polluting the water with waste products.

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. With respect to the Cowhead Lake tui chub, these prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (including harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt any such conduct), import or export, transport in interstate or foreign 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 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 for incidental take in connection with otherwise lawful activities. Information collections associated with these permits are approved under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and assigned Office of Management and Budget clearance number 1018-0094.

For additional information concerning these permits and associated requirements, see 50 CFR 17.22. Requests for copies of the regulations regarding listed species and inquiries about prohibitions and permits may be addressed to: Regional Director, U.S. Fish and Wildlife Service, 911 NE 11th Avenue, Portland, Oregon 97232-4181 (503/231-6241; FAX 503/231-6243).

It is the policy of the Service, published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed those activities that would or would not constitute a violation of section 9 of the Act if a species is listed. The intent of this policy is to increase public awareness of the effect of a proposed listing on proposed and ongoing activities within a species' range. The Service believes that, based on the best available information, the following actions will not result in a violation of section 9, provided these actions are carried out in accordance with any existing regulations and permit requirements:

- (1) Possession of legally acquired Cowhead Lake tui chub;
- (2) Actions that may affect Cowhead Lake tui chub which are authorized, funded or carried out by a Federal agency, when the action is conducted in accordance with an incidental take statement issued by the Service pursuant to section 7 of the Act.
- (3) Actions that may affect Cowhead Lake tui chub that are not authorized, funded or carried out by a Federal agency, when the action is conducted in accordance with an incidental take statement issued by the Service pursuant to section 10(a)(1)(B) of the Act. Section 10(a)(1)(B) refers to Habitat Conservation Plans (HCP's) that are negotiated after a species has been listed under Section 4 of the Act and are designed to mitigate and minimize impacts to the species to the greatest extent practicable.

Activities that the Service believes could potentially harm the Cowhead Lake tui chub and result in "take" include, but are not limited to:

- (1) Take of Cowhead Lake tui chub without a permit, which includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting any of these actions;
- (2) Possess, sell, deliver, carry, transport, or ship illegally taken Cowhead Lake tui chub;
- (3) Introduction of nonnative fish species that compete or hybridize with, or prey on Cowhead Lake tui chub;

Dated: March 17, 1998

Jamie Rappaport Clark,

Director, Fish and Wildlife Service.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AE76

Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for *Chlorogalum purpureum* (Purple Amole), a Plant from the South Coast Ranges of California

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) proposes threatened status pursuant to the Endangered Species Act of 1973, as amended (Act), for the California plant, *Chlorogalum purpureum* (purple amole). One of the two varieties comprising this species, *C. p. var. purpureum*, is known only from the central south coast ranges in Monterey County, on lands managed by the Department of the Army at Fort Hunter Liggett. It is threatened by loss and alteration of habitat and direct loss of plants from construction and use of military training facilities, field training activities, and alteration of fire cycles due to military training. The other variety, *C. p. var. reductum*, is known only from two sites in the La Panza region of the coast ranges in San Luis Obispo County, on U.S. Forest Service and private lands. This taxon is threatened by illegal vehicle trespass into the population on Forest Service land. This proposed rule, if made final, would extend the Act's protection to these plants. Although this rule proposes *Chlorogalum purpureum* at the species level, each variety would be treated as a separate taxonomic unit for the purposes of applying the section 7 jeopardy standard and identifying recovery units, if this rule is made final. **DATES:** Comments from all interested parties must be received by May 29, 1998. Public hearing requests must be received by May 14, 1998.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Field Supervisor, Ventura Fish and Wildlife Office, U.S. Fish and Wildlife Service, 2493 Portola Road, Suite B, Ventura, California 93003. Comments and materials received, as well as the supporting documentation

used in preparing the rule, will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Carl Benz, Assistant Field Supervisor, Listing and Recovery, at the address above (telephone 805/644-1766; facsimile 805/644-3958).

SUPPLEMENTARY INFORMATION:

Background

Chlorogalum purpureum (purple amole) was first described by Brandegee in 1893 from specimens collected in the Santa Lucia Mountains by William Vortriede a year earlier (Brandegee 1893). In 1904, E.L. Greene (1904) published the new combination *Laothoe purpurea* when he discovered that the genus name *Laothoe* had been published earlier than *Chlorogalum*. However, R.F. Hoover (1940) conserved the name *Chlorogalum* through the rule of *nomen conservandum*. Hoover (1964) described the variety *reductum*, commonly known as Camatta Canyon amole, based on its shorter stature compared to the nominative variety. This nomenclature was retained in the most recent treatment of the genus (Jernstedt 1993). These two varieties comprise the entire species.

Chlorogalum purpureum is a bulb-forming perennial herb in the lily family (Liliaceae). It has a basal rosette of linear leaves 2 to 5 millimeters (mm) (0.1 to 0.2 inches (in)) wide with wavy margins. A widely branching stem supports bluish-purple flowers with six recurved tepals (petals and sepals that have a similar appearance). The stems of *C. p. var. purpureum* are 25 to 40 centimeters (cm) (10 to 16 in) high, whereas those of *C. p. var. reductum* are only 10 to 20 cm (4 to 8 in) high (Hoover 1964, Jernstedt 1993). *Chlorogalum purpureum* is the only member of the genus with bluish-purple flowers that open during the day (Jernstedt 1993). Reproduction in *Chlorogalum purpureum* is primarily by seed. Hoover (1964) reports that clonal reproduction by longitudinal splitting of the bulbs is rare; some splitting has been noted in one population of *C. p. var. reductum* (Alice Koch, California Department of Fish and Game (CDFG), pers. comm. 1997b).

Chlorogalum purpureum occurs in grassland, oak woodland, and oak savannah between 300 and 620 meters (m) (1,000 and 2,050 feet (ft)) in elevation in the south coast ranges of California. *Chlorogalum purpureum* var. *purpureum* is known from oak woodlands and meadows at three sites near Jolon in Monterey County on lands

owned and managed by the Department of the Army (Fort Hunter Liggett). Historically, appropriate habitat may have existed east of the base, in Jolon Valley, but most of the flat areas in that valley have been converted to cropland, pasture, or vineyards. At Fort Hunter Liggett, the plant occurs on flat or gently sloping terrain with a gravelly surface underlain by clay soils, where other vegetation is sparse.

Of the three localities of *Chlorogalum purpureum* var. *purpureum*, one is comprised of discontinuous and fragmented patches of plants scattered over an area 7 to 9 kilometers (km) (4 to 6 miles (mi)) long and about 5 km (3 mi) wide in the cantonment (housing and administration area), the Ammunition Supply Point and adjacent Training Area 13, and the boundary of Training Area 10 (U.S. Army Reserve 1997, map provided by U.S. Army Reserve 1997, Painter and Neese 1997). While some of the discontinuities in distribution are due to unsuitable intervening habitat, other patches have been fragmented by roads, the historical settlement of Jolon, and military training facilities. No population counts have been made at this site, but estimates of some areas within it suggest that it supports several thousand plants (U.S. Department of the Army 1997, Painter and Neese 1997). The second locality is about 4 km (2.5 mi) to the southeast in Training Area 25. The taxon is patchily distributed in an area of about 6 square km (2 square mi) that is laced with vehicle tracks and dirt roads. At one location there, 400 to 500 plants have been recorded (Painter and Neese 1997), but the entire site may support several thousand individuals. The third and southernmost locality is at the boundaries of Training Areas 23, 24, and 27. This is the largest known site and contains plants in high densities. Following a fire that may have promoted flowering, this site was estimated to support up to 10,000 plants (Painter and Neese 1997).

The primary threats to *Chlorogalum purpureum* var. *purpureum* are the loss, fragmentation, and alteration of habitat and direct elimination of plants from construction and use of military training facilities, military field training activities, alteration of fire cycles due to military training, and potentially from grazing and associated habitat changes.

About 110 km (70 mi) to the south, *Chlorogalum purpureum* var. *reductum* occurs in one region in the La Panza Range of San Luis Obispo County. It is known from only two sites. One is located just south of Highway 58; a smaller site is located approximately 5 to 8 km (3 to 5 mi) to the south. The