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List of Subjects in 47 CFR Part 25

Satellites.

Federal Communications Commission.

Anna M. Gomez,

Deputy Chief, International Bureau.

[FR Doc. 00-3332 Filed 2-10-00; 8:45 am]

BILLING CODE 6712-01-P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AF89

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the Ohlone Tiger Beetle (*Cicindela ohlone*)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose endangered status pursuant to the Endangered Species Act (Act) of 1973, as amended, for the Ohlone tiger beetle (*Cicindela ohlone*). This species is endemic to Santa Cruz County, California, and is threatened by habitat fragmentation and destruction due to urban development, habitat degradation due to invasion of nonnative vegetation, and vulnerability to local extirpations from random natural events. This proposal, if made final, would extend the Federal protection and recovery provisions of the Act to this species.

DATES: Comments from all interested parties received by April 11, 2000 will be considered. Public hearing requests must be received by March 27, 2000.

ADDRESSES: If you wish to comment, you may submit your comments and materials concerning this proposal by any one of several methods.

(1) You may submit written comments to the Field Supervisor, U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, California 93003.

(2) You may send comments by e-mail to ohlonetigerbeetle@r1.fws.gov. Please submit these comments as an ASCII file and avoid the use of special characters and any form of encryption. Please also include "Attn: [RIN 1018-AF89]" and your name and return address in your e-mail message. If you do not receive a

confirmation from the system that we have received your e-mail message, contact us directly by calling our Carlsbad Fish and Wildlife Office at phone number 805/644-1766.

(3) You may hand-deliver comments to our Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, California 93003.

FOR FURTHER INFORMATION CONTACT:

Colleen Sculley, invertebrate biologist, Ventura Fish and Wildlife Office, at the above address (telephone 805/644-1766; facsimile 805/644-3958).

SUPPLEMENTARY INFORMATION:

Background

The Ohlone tiger beetle (*Cicindela ohlone*) is a member of the Coleopteran family Cicindelidae (tiger beetles), which includes over 2,000 species worldwide and over 100 species in the United States (Pearson and Cassola 1992). Tiger beetles are day-active, predatory insects that prey on small arthropods. Because many tiger beetles often feed on insect species that are injurious to man and crops, they are regarded as beneficial (Pearson and Cassola 1992; Nagano 1982). Adult tiger beetles are medium-sized, elongate beetles characterized by their usually brilliant metallic green, blue, red, and yellow coloration highlighted by stripes and spots. Adults are ferocious, swift, and agile predators that seize small prey with powerful sickle-shaped jaws.

Tiger beetle larvae are also predatory. They live in small vertical or slanting burrows from which they lunge and seize passing invertebrate prey (Essig 1926; Essig 1942; Pearson 1988). When a prey item passes near a burrow, the larva grasps the prey with its strong mandibles (mouthparts) and pulls it into the burrow, and once inside the burrow, the larva will feed on the captured prey (Essig 1942; Pearson 1988). Tiger beetles share similar larval body forms throughout the world (Pearson and Cassola 1992). The larvae, either white, yellowish, or dusky in coloration, are grub-like and fossorial (subterranean), with a hook-like appendage on the fifth abdominal segment that anchors the larvae inside their burrows.

Tiger beetle larvae undergo three instars (larval development stages). This period can take 1 to 4 years, but a 2-year period is the most common (Pearson 1988). After mating, the tiger beetle female excavates a hole in the soil and oviposits (lays) a single egg (Pearson 1988; Kaulbars and Freitag 1993; Grey Hayes, University of California, Santa Cruz, pers. comm. 1998). Females of many species of *Cicindela* are extremely specific in choice of soil type for

oviposition (egg laying) (Pearson 1988). It is not known at this time how many eggs the Ohlone tiger beetle female lays, but other species of *Cicindela* are known to lay between 1 and 14 eggs per female (mean range 3.7 to 7.7), depending on the species (Kaulbars and Freitag 1993). After the larva emerges from the egg and becomes hardened, it enlarges the chamber that contained the egg into a tunnel (Pearson 1988). Before pupation (transformation process from larva to adult), the third instar larva will plug the burrow entrance and dig a chamber for pupation. After pupation, the adult tiger beetle will dig out of the soil and emerge. Reproduction may either begin soon after emergence or be delayed (Pearson 1988).

Tiger beetles are a well-studied taxonomic group with a large body of scientific literature; the journal *Cicindela* is devoted exclusively to tiger beetles. Scientists have studied the diversity and ecological specialization of tiger beetles, and amateur collectors have long been attracted by their bright coloration and swift movements. Tiger beetle species occur in many different habitats including riparian habitats, beaches, dunes, woodlands, grasslands, and other open areas (Pearson 1988; Knisley and Hill 1992). A common habitat component appears to be open sunny areas for hunting and thermoregulation (an adaptive behavior to use sunlight or shade to regulate body temperature) (Knisley *et al.* 1990; Knisley and Hill 1992). Individual species of tiger beetle are generally highly habitat-specific because of oviposition and larval sensitivity to soil moisture, composition, and temperature (Pearson 1988; Pearson and Cassola 1992; Kaulbars and Freitag 1993).

The Ohlone tiger beetle is endemic to Santa Cruz County, California, where it is known only from coastal terraces supporting remnant patches of native grassland habitat. Specimens of this species were first collected northwest of the City of Santa Cruz, California, in 1987, and were first described in 1993 (Freitag *et al.* 1993). Both male and female specimens have been collected.

The adult Ohlone tiger beetle is a relatively small beetle measuring 9.5 to 12.5 millimeters (mm) (0.37 to 0.49 inches (in)) long. The adults have large, prominent eyes and metallic green elytra (leathery forewings) with small light spots (Freitag *et al.* 1993). Their legs are long, slender, and coppery-green. Freitag *et al.* (1993) describe features that distinguish this species from closely related species of *Cicindela purpurea* and other *purpurea* group taxa.

Two principal distinguishing features of the Ohlone tiger beetle are its early seasonal adult activity period and its disjunct distribution. While other tiger beetle species, such as *Cicindela purpurea*, are active during spring, summer, or early fall (Nagano 1982; Freitag *et al.* 1993), the Ohlone tiger beetle is active from late January to early April (Freitag *et al.* 1993). The Ohlone tiger beetle is the southernmost of *purpurea* group species in the Pacific coast region; its distribution is allopatric (geographically separated) to those of similar species (Freitag *et al.* 1993).

Ohlone tiger beetle larvae are currently undescribed. However, tiger beetle burrows, measuring 4 to 6 mm in diameter (0.16 to 0.23 in), were found in the same habitat areas where adult Ohlone tiger beetles were collected (David Kavanaugh, California Academy of Sciences, pers. comm. 1997; V. Cheap, *in litt.* 1997). The surface openings of these burrows are circular and flat with no dirt piles or mounds surrounding the circumference (Kim Touneh, Service, pers. obs. 1997). These burrows are similar to larval burrows belonging to other tiger beetle species. Larvae and inactive adults have been excavated from these burrows, and the inactive adults collected from these burrows were fully mature and easily identified as Ohlone tiger beetles (D. Kavanaugh, pers. comm. 1997; V. Cheap, *in litt.* 1997). Based on these collections, Kavanaugh (pers. comm. 1997) concluded that the larvae found in these burrows were Ohlone tiger beetle larvae. Further investigations of these recently collected larvae are being conducted to scientifically characterize and document the morphology of the Ohlone tiger beetle larvae (D. Kavanaugh, pers. comm. 1997).

Ohlone tiger beetle habitat is an open native grassland, with California oatgrass (*Danthonia californica*) and purple needlegrass (*Stipa pulchra*), on level or nearly level slopes. The substrate is shallow, pale, poorly drained clay or sandy clay soil that bakes to a hard crust by summer, after winter and spring rains cease (Freitag *et al.* 1993). Ohlone tiger beetle habitat is associated with specific soil types in Santa Cruz County, either Watsonville loam or Bonnydoon soil types. Soil core analyses were conducted for three out of the five known population sites; the soil types for these three sites were determined to be either Watsonville loam or Bonnydoon (Richard Casale and Ken Oster, U.S. Department of Agriculture, Natural Resources Conservation Service, pers. comm. 1997).

Adult Ohlone tiger beetles have been observed in remnant patches of native grassland on coastal terraces where bare areas occur among low or sparse vegetation. Trails (*e.g.*, foot paths, dirt roads, and bicycle paths) are also used. When disturbed, adults will fly to more densely vegetated areas (Freitag *et al.* 1993; Richard Arnold, private consultant, pers. comm. 1995). Oviposition by females and subsequent larval development also occur in this coastal prairie habitat (*i.e.*, open areas among native vegetation) (D. Kavanaugh, pers. comm. 1997; V. Cheap, *in litt.* 1997). The density of larval burrows decreases with increasing vegetation cover (G. Hayes, *in litt.* 1997).

The historic range of the Ohlone tiger beetle cannot be precisely assessed because the species was only recently discovered, and no historic specimens or records are available. The earliest specimen recorded was collected from a site northwest of the City of Santa Cruz in 1987 (Freitag *et al.* 1993). Based on available information on topography, substrates, soils, and vegetation, it is likely that suitable habitat for the Ohlone tiger beetle was more extensive and continuous prior to the increase in urban development and agriculture. Historically, potentially suitable habitat may have extended from southwestern San Mateo County to northwestern Monterey County, California (Freitag *et al.* 1993). However, we have no evidence or data indicating that this species occurred beyond the present known occupied areas of Santa Cruz County. Currently, the extent of potentially suitable habitat for the Ohlone tiger beetle is estimated at 81 to 121 hectares (ha) (200 to 300 acres (ac)) in Santa Cruz County, California (Freitag *et al.* 1993).

The available data indicate a restricted range and limited distribution of the Ohlone tiger beetle. This finding is supported by the following considerations. First, many tiger beetle species are known to be restricted to specific habitats (Pearson 1988; Knisley and Hill 1992; Pearson and Cassola 1992), such as the open native grassland occupied by the Ohlone tiger beetle. Second, tiger beetles are widely collected and well studied, yet no historic specimens were found in the extensive collections of the California Academy of Sciences (Freitag *et al.* 1993). The Ohlone tiger beetle's specialized habitat and restricted range may account for the absence of collection records prior to 1987. Because *Cicindela* is a very popular insect genus to collect (Chris Nagano, Service, pers. comm. 1993), and because

entomologists commonly collect out of season and out of known ranges in order to find temporally and spatially outlying specimens, one would expect more specimens to have been collected if the Ohlone tiger beetle were more widespread and common.

Only five populations of Ohlone tiger beetles are known to exist. All known populations are located on coastal terraces supporting remnant stands of native grassland. One population occurs northwest of the City of Soquel at 60 to 90 meters (m) (200 to 295 feet (ft)) elevation. A second population is located in the City of Scotts Valley at 210 m (690 ft) elevation; a third is located west of the City of Santa Cruz at 110 m (360 ft) elevation on property owned by the County of Santa Cruz; a fourth population is found in a preserve northwest of the City of Santa Cruz and owned by the City and occurs at about 110 m (360 ft) elevation; and the fifth population is found northwest of the City of Santa Cruz on properties owned by the University of Santa Cruz (University) and the California Department of Parks and Recreation, at about 340 m (1115 ft) elevation (Freitag *et al.* 1993; R. Morgan, *in litt.* 1994; G. Hayes, *in litt.* 1997). The abundance of individuals in each population is unknown. However, each population is localized to areas of less than 2 ha (5 ac) (G. Hayes, pers. comm. 1995).

Researchers conducted two separate surveys to assess the current distribution and status of the Ohlone tiger beetle. Between 1990 and 1994, researchers surveyed 14 sites with native grassland habitat from southwestern San Mateo County to southern Santa Cruz County for Ohlone tiger beetles. Six additional locations supporting nonnative grasslands, but which appeared otherwise suitable, were also surveyed. Surveys were conducted from February to April, when Ohlone tiger beetles are active. This work documented four of the five known populations (R. Morgan, *in litt.* 1994); the preserve population was not known or found during this survey effort.

A second survey effort, conducted during the 1995 activity season, surveyed for populations of Ohlone tiger beetles in coastal grasslands from southern San Mateo County to northern Monterey County. Researchers visited sites repeatedly through the Ohlone tiger beetle's season of activity. These surveys confirmed the four previously known populations and discovered the fifth population at the city-owned preserve (G. Hayes, *in litt.* 1997). All five known populations are located within the urban areas of the City of

Santa Cruz and surrounding communities.

Based on the results of the two survey efforts and the above considerations, we conclude that the Ohlone tiger beetle is restricted to remnant patches of native grassland on coastal terraces in the mid-county portion of coastal Santa Cruz County, California.

Previous Federal Action

On February 18, 1993, we received a petition from Randall Morgan of Soquel, California, requesting that we add the Ohlone tiger beetle to the list of threatened and endangered species pursuant to the Act. The petition contained information indicating that the Ohlone tiger beetle has a limited distribution and specialized habitat requirements and is threatened by proposed development projects and recreational activities. Our 90-day petition finding, published on January 27, 1994, in the **Federal Register** (59 FR 3330), determined that substantial information was presented in the petition indicating that listing may be warranted. Our 12-month petition finding, published on March 1, 1996, in the **Federal Register** (61 FR 8014), concluded a not-warranted determination due to inadequate life history information and survey data to conclusively determine that the beetle is restricted to the described habitat.

On April 30, 1997, we received a second petition from Grey Hayes of Santa Cruz, California, to emergency-list the Ohlone tiger beetle as an endangered species under the Act. The petition specified endangered status because of the beetle's limited distribution and threats from proposed development projects, invasion of nonnative plants, and recreational activities. Based on the information provided by the petitioner and additional information gathered since the first petition in 1993, we determined that emergency-listing the Ohlone tiger beetle was not justified but that listing of this species as endangered is warranted. Therefore, in our most recent Notice of Review, published on October 25, 1999 (64 FR 57534), we included the Ohlone tiger beetle as a candidate species. Candidate species are those species for which listing is warranted but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii) of the Act.

The processing of this proposed rule conforms with our current Listing Priority Guidance published in the **Federal Register** on October 22, 1999 (64 FR 57114). The guidance clarifies the order in which we will process rulemakings. Highest priority is processing emergency listing rules for

any species determined to face a significant and imminent risk to its well-being (Priority 1). Second priority (Priority 2) is processing final determinations on proposed additions to the lists of endangered and threatened wildlife and plants. Third priority is processing new proposals to add species to the lists. The processing of administrative petition findings (petitions filed under section 4 of the Act) is the fourth priority. The processing of critical habitat determinations (prudence and determinability decisions) and proposed or final designations of critical habitat will no longer be subject to prioritization under the Listing Priority Guidance. This proposed rule is a Priority 3 action and is being completed in accordance with the current Listing Priority Guidance.

Peer Review

In accordance with interagency policy published on July 1, 1994 (59 FR 34270), upon publication of this proposed rule in the **Federal Register** we will solicit expert reviews by at least three specialists regarding pertinent scientific or commercial data and assumptions relating to the taxonomic, biological, and ecological information for the Ohlone tiger beetle. The purpose of such a review is to ensure that listing decisions are based on scientifically sound data, assumptions, and analyses, including the input of appropriate experts.

Summary of Factors Affecting the Species

Section 4 of the Act and regulations (50 CFR part 424) issued 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 Ohlone tiger beetle (*Cicindela ohlone*) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* Loss of habitat is the principal threat to insect species worldwide because of their close associations with, and dependence on, specific habitats (Pyle *et al.* 1981). The effects of habitat destruction and modification on tiger beetle species have been documented by Knisley and Hill (1992) and Nagano (1982). The Ohlone tiger beetle is restricted to remnant patches of native grassland on coastal terraces where low and sparse vegetation provide space for foraging, reproduction, and

thermoregulation, and support a prey base of other invertebrate species. The poorly drained clay or sandy clay substrate of the coastal terraces provides the soil moisture, composition, and temperature conditions necessary for oviposition and larval development (Pearson 1988; Kaulbars and Freitag 1993).

The five known populations of the Ohlone tiger beetle are threatened by habitat destruction by urban development and/or habitat modification by invasive nonnative vegetation. Disturbance of the substrate and removal or elimination of vegetation by urban development kills or injures individuals and precludes others from feeding, sheltering, or reproducing. Historically, potentially suitable habitat is believed to have extended from southwestern San Mateo County to northwestern Monterey County, California (Freitag *et al.* 1993). Most of this habitat has been modified or destroyed by human actions such as urbanization and agriculture (Freitag *et al.* 1993).

About 6,060 to 8,080 ha (15,000 to 20,000 ac) of native grassland remain in Santa Cruz County, and not more than 81 to 121 ha (200 to 300 ac) contain the proper combination of substrate, slope, and exposure (bare areas between patches of grasses) to be considered suitable habitat for the Ohlone tiger beetle (Freitag *et al.* 1993). Nearly all of this suitable habitat is located within or adjacent to urbanized areas in the coastal mid-county area of Santa Cruz. Much of the City of Santa Cruz and its adjacent towns were built on these marine terrace grassland habitats (Freitag *et al.* 1993). Within suitable habitat, the beetle occupies only sparsely vegetated areas and bare areas, which are artifacts of trails or past grazing sites. The total extent of the area occupied by the beetle is estimated to be 10 ha (25 ac) or less.

The Ohlone tiger beetle population northwest of the City of Soquel is threatened by a proposed 21-lot residential development. The preferred alternative of the proposed project would completely extirpate the Ohlone tiger beetle population by eliminating all of the known occupied habitat and most of the extant grassland habitat found on this site. One alternative in the final environmental impact report for the project does propose that the majority of suitable habitat for the Ohlone tiger beetle be set-aside and managed to reduce nonnative vegetation and enhance habitat quality. The county is currently waiting for the applicant to submit design reviews in a supplemental environmental impact

report, which would then be available for public review. When this report will be available for review or whether the alternatives will contain changes that might affect the Ohlone tiger beetle is not known (Kim Tschantz, County of Santa Cruz, pers. comm. 1999).

The population site located in the City of Scotts Valley was proposed for development of 233 residential homes and an open park containing two ballfields. This proposed project would have set aside most of the beetle's occupied habitat by fencing a 30-m (100-ft) wide area between the two ballfields, but construction would still have occurred on adjacent occupied areas and known grassland habitat would have been eliminated. The adjacent development could have led to potential disturbance, such as pesticide drift, soil erosion, and vegetation alteration. In addition, the isolated population would have been more vulnerable to random extinction (see Factor E of this section). A final environmental impact report for this project was completed in the summer of 1998 (Impact Sciences, Inc. 1998). However, this proposed development was voted down in a referendum, thus halting the development of this property for the present time. The landowner is now considering both alternative development plans and the sale of the land. Local agencies and conservation groups are interested in purchasing the land as open space, but funding sources have not been identified. The future plans for the site are not known (Laura Kuhn, City of Scotts Valley, pers. comm. 1999).

A portion of the third population site for the Ohlone tiger beetle, located west of the City of Santa Cruz, was proposed as a residential housing development. The property was originally zoned as part of the Santa Cruz Greenbelt. However, that designation expired in 1994, and the property owners began to consider developing the property. In the spring of 1999, the City of Santa Cruz purchased the property, and it will be managed as open space by the City. The State of California will hold a conservation easement on the land. A management plan will be developed by the City of Santa Cruz, and the Ohlone tiger beetle will be considered in the plan. At the present time, the site is closed to public use except for officially escorted hikes (Susan Harris, City of Santa Cruz, pers. comm. 1999).

The rest of the third population site is still on private land. In September 1998, the property owners tilled up a large percentage of the area the Ohlone tiger beetle occupied, in preparation for converting the land from livestock

grazing to a vineyard (G. Hayes, pers. comm. 1998). Whether the species has been completely extirpated from this site is not known.

The fourth population of Ohlone tiger beetles occurs northwest of Santa Cruz on land managed as a preserve by the California Department of Parks and Recreation (CDPR). The CDPR wants to develop their property and has a proposal for the opening of existing trails and the construction of a vehicle entrance road and parking area. The entrance road would be developed over a portion of occupied habitat. The vehicle parking area would be constructed adjacent to the Ohlone tiger beetle's occupied habitat. However, in the public works plan for this site, CDPR established a policy that road maintenance or other activities will be scheduled to minimize impacts on burrows, larval habitat, foraging activities, or other aspects of the population (CDPR 1997).

Property adjacent to the CDPR land is managed by the University of California, Santa Cruz (University), and a population of the beetle is known to occur on this property. Areas that the Ohlone tiger beetle inhabit are designated in the University's Long Range Development Plan for Site-Specific Research, Campus Resource Lands, and Environmental Reserve (University of California 1992). Although some development is possible in site-specific research areas and campus resource lands, no development projects are anticipated at this time (Graham Bice, University of California, pers. comm. 1995; G. Hayes, pers. comm. 1997).

In addition to the development threats to the Ohlone tiger beetle, the invasion of nonnative vegetation threatens the already reduced extent of suitable habitat for this species. Despite being relatively free of development threats, the fifth population site, located northwest of the City of Santa Cruz and owned by the City, is threatened by habitat degradation due to the invasion of nonnative plant species into the coastal prairie. Nonnative vegetation and forest vegetation are encroaching into grassland habitats and out-competing native grassland habitats and out-competing native grassland vegetation (S. Harris, pers. comm. 1998). The City is attempting to maintain the species' habitat by mowing parts of it to provide bare ground, and trails near where the Ohlone tiger beetle occurs will be closed to bicycles (S. Harris, pers. comm. 1999).

The other four populations of Ohlone tiger beetle are also threatened by invasion of nonnative vegetation (e.g.,

French broom (*Cytisus monspessulanus*), velvet grass (*Holcus* spp.), filaree (*Erodium* spp.), and *Eucalyptus* spp.) (R. Morgan, *in litt.* 1992; G. Hayes, *in litt.* 1997; G. Hayes, pers. comm. 1997). These nonnative plants are aggressive invaders that convert sunny, native grassland needed by Ohlone tiger beetles to habitat dominated by an overstory that shades the bare areas among the low or sparse native vegetation, thus covering the open sunny areas required by the Ohlone tiger beetle to thermoregulate, forage, and oviposit. In addition to shading these areas used by the beetle, the nonnative vegetation fills in the open spaces among the low or sparse vegetation creating an unsuitable densely vegetated habitat. Nonnative vegetation may also affect the numbers and diversity of the beetle's prey, predators, and parasites (see Factor C of this section). Increased vegetation encroachment is the primary factor attributed to the extirpation of several populations of other *Cicindela* species (e.g., *C. abdominalis* and *C. debilis*) (Knisley and Hill 1992). Without management efforts to reduce and control nonnative species, the populations of Ohlone tiger beetle will likely decline because of habitat degradation.

Areas that may once have been suitable for Ohlone tiger beetles have been converted to nonnative grasslands, or have been developed because the firm, level substrate of the coastal terraces afforded good building sites with scenic views of the Pacific Ocean. For the same reasons that other terraces have already been developed, remaining areas of suitable habitat are under great development pressure.

B. Overutilization for commercial, recreational, scientific, or educational purposes. Members of the genus *Cicindela* may be the subject of more intense collecting and study than any other single insect genus. Tiger beetle specimens are highly sought by amateur collectors (C. Nagano, pers. comm. 1993). In light of the recent discovery of the Ohlone tiger beetle, and concerns regarding its continued existence, the desirability of this species to private collectors may increase, leading to increased collection of specimens. The original petitioner for the Ohlone tiger beetle has been contacted by several people from such places as France, Wisconsin, and California, looking for Ohlone tiger beetle specimens they can add to their private collections, as well as those asking where the colonies are located and indicating they want to collect the species at those locations (R. Morgan, pers. comm. 1998). Listing this

species as endangered will likely increase its attractiveness to private collectors. Unrestricted collecting is considered a threat to the species. Although the reproductive rate for the Ohlone tiger beetle is unknown, females of other species of *Cicindela* produce between 3.7 and 7.7 (mean range) eggs (Kaulbers and Freitag 1993). If the Ohlone tiger beetle has a similarly low reproductive rate, even limited collecting could have harmful effects on its reproductive or genetic viability and lead to extinction of the species.

The Ohlone tiger beetle is not likely to be used as a model organism for general research projects because it is a rare and limited species. It may be the subject of studies intended to improve understanding of the species' ecology and to improve management strategies for its conservation. Although such studies would directly benefit the recovery of the Ohlone tiger beetle, they may contribute cumulatively to other threats to the species.

C. Disease or Predation. No diseases are known to threaten the Ohlone tiger beetle. However, the Ohlone tiger beetle may be affected by any of several predators and parasites known to prey upon, and afflict, other tiger beetle species. The parasites are considered to have greater effects than predators (Nagano 1982; Pearson 1988). Known tiger beetle predators include birds, shrews (Soricidae), raccoons (*Procyon lotor*), lizards (*Lacertilia*), toads (*Bufo* spp.), ants (*Formicidae*), robber flies (*Asilidae*) and dragonflies (*Anisoptera*) (Lavigne 1972; Nagano 1982; Pearson 1988). Known tiger beetle parasites include ant-like wasps of the family Typhiidae, especially the genera *Mathoca*, *Karlissa*, and *Pterombrus*, and the Bombyliid flies of the genus *Anthrax* (Nagano 1982; Pearson 1988). These insect parasites are distributed worldwide and specialize on tiger beetle larvae.

Predators and parasites play important roles in the natural dynamics of populations and ecosystems. However, the effects of predation and parasitism may pose substantial threats to Ohlone tiger beetle populations already affected by other factors, especially limited distribution and small, isolated populations. At this time, the magnitude of predation and parasitism on the Ohlone tiger beetle is not known.

D. The inadequacy of existing regulatory mechanisms. Regulatory mechanisms currently in effect do not provide adequate protection for the Ohlone tiger beetle and its habitat. Federal agencies are not legally required

to consider and manage for species of concern.

At the State and local levels, regulatory mechanisms are also inadequate. The California Endangered Species Act does not allow for the listing of invertebrate species. State and local agencies may consider the Ohlone tiger beetle when evaluating certain activities for compliance with the California Environmental Quality Act (CEQA) and local zoning regulations. If an activity is identified as having a significant impact on this species, mitigation measures may be required by State and local regulatory agencies to offset these impacts. However, CEQA and local regulations do not provide specific protection measures to ensure the continued existence of the Ohlone tiger beetle. In addition, CEQA provisions for "Statements of Overriding Considerations" can allow projects to proceed despite unmitigated adverse impacts.

Ohlone tiger beetle habitat occurs on properties owned by the University, the CDP, and the City of Santa Cruz. The University does not have a management plan that specifically protects the Ohlone tiger beetle or its habitat (G. Hayes, pers. comm. 1997). The CDP has an existing Public Works Plan that calls for surveys to verify the occupied habitat boundary of the Ohlone tiger beetle and proposes to minimize the impacts of disturbance to the Ohlone tiger beetle during road maintenance and other scheduled activities in the plan (G. Gray, CDP, pers. comm. 1997). However, a local citizen has expressed concern that surveys and minimization measures are not being adequately carried out (G. Hayes, *in litt.* 1999). For the site northwest of Santa Cruz, the City of Santa Cruz Parks and Recreation Department's Proposed Master Plan for the preserve proposes increased usage of existing trails, but identifies the Ohlone tiger beetle and its habitat as sensitive resources. The proposed master plan includes a management program for Ohlone tiger beetle habitat; however, implementation of any management actions will depend on future funding (S. Harris, per. comm. 1999).

For the site west of the City of Santa Cruz, a management plan will eventually be developed since this property has been purchased as open space. The property is officially closed to public use except for officially escorted hikes. However, the enforcement of this closure may not be adequate.

Because the Ohlone tiger beetle is not listed at the State or Federal levels, nothing prohibits importing, exporting, sale, or trade of the species.

E. Other natural or manmade factors affecting its continued existence. The five populations of the Ohlone tiger beetle are isolated and restricted to relatively small patches of habitat. Because a direct correlation exists between increased extinction rates with the reduction of available habitat area and increased distances between small populations (Gilpin 1987), the small, isolated populations of the Ohlone tiger beetle are more vulnerable to local extinction from random genetic and demographic events or environmental catastrophes. The small sizes of occupied habitat also reduce the ability of the habitats to buffer against edge effects and other influences from adjacent developed areas, such as pesticide drift, soil erosion, and vegetation alteration.

Although some species of tiger beetles are known to disperse over sizable distances (Pearson 1988), species from the *purpurea* group of the genus *Cicindela* typically do not disperse widely, usually 12 to 18 m (40 to 60 ft) (David Pearson, Arizona State University, pers. comm. 1997). The dispersal capabilities of Ohlone tiger beetles are unknown; however, because the Ohlone tiger beetle belongs to the *purpurea* group, its dispersal distance is most likely narrow. Assuming individuals to be capable of dispersing distances comparable to those between populations, the likelihood of successful emigration or colonization is greatly reduced by the small size of suitable habitat patches and the unavailability of even marginal habitat among the extensive urban development in the region.

Some recreational uses of Ohlone tiger beetle habitat (i.e., off-road motor vehicle use or heavy bicycling) may pose a threat to the Ohlone tiger beetles. The beetles require open ground to maneuver, take prey, and lay eggs. They use the hard-packed bicycle trails for foraging, thermoregulation, and laying their eggs (R. Morgan, pers. comm. 1998). Bicycle traffic on a trail through the University site has been observed to result in the crushing of several individual beetles (R. Morgan, *in litt.* 1993). Similar mortality has been observed in the species' habitat west of the City of Santa Cruz (R. Morgan, *in litt.* 1993) and may occur in other Ohlone tiger beetle populations. Also, bicycle and foot traffic could potentially collapse larval tunnels and crush the larvae. The significance of such mortality for population viability is not known at this time, but is considered a potential threat to the Ohlone tiger beetle, particularly if bicycle traffic through the habitat increases. Heavy

vehicular traffic in areas with extensive use of public trails, such as on Santa Cruz University, City of Santa Cruz, and CDPR land, may also create soil compaction and rutting, damaging potential oviposition sites. Populations of another tiger beetle species found in the northeastern United States, *Cicindela dorsalis dorsalis*, were extirpated in several localities that were subjected to heavy recreational use (*i.e.*, heavy pedestrian foot traffic and vehicular use) but survived at other sites that had received little or no recreational disturbance (Knisley and Hill 1992).

Pesticides could pose a threat to the Ohlone tiger beetle. The effects of insecticides on other tiger beetle species are referenced by Nagano (1982). Local land owners may use pesticides to control targeted invertebrate species around their homes and gardens. These pesticides may drift aerially or be transported by water runoff into Ohlone tiger beetle habitat where they may kill nontargeted organisms including the Ohlone tiger beetle or its prey species. As urban development increases near or in Ohlone tiger beetle habitat, negative impacts from pesticides may become more frequent. The significance of pesticide effects is not known at this time, but they are recognized as a substantial potential threat to the species.

In making this proposed rule determination, we have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by the Ohlone tiger beetle. Threats to the five populations of Ohlone tiger beetle, including habitat fragmentation and destruction due to urban development, habitat degradation due to invasion of nonnative vegetation, vulnerability to random local extirpations, and potential threats due to collection, pesticides, and recreational use of habitat, imperil the continued existence of this species. Much of the habitat of this species is suitable for development and is unprotected from these threats. The Ohlone tiger beetle is known from only five populations. This species is in danger of extinction "throughout all or a significant portion of its range" (section 3(6) of the Act) and, therefore, meets the Act's definition of endangered. Because of the high potential for these threats, if realized, to result in the extinction of the Ohlone tiger beetle, the preferred action is to list this species as endangered.

Critical Habitat

Critical habitat is defined in section 3, paragraph (5)(A) of the Act as 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 essential to the conservation of the species and which may require special management considerations or protection; and specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Act, 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.

Critical habitat designation, by definition, directly affects only Federal agency actions through consultation under section 7(a)(2) of the Act. 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 a listed species or destroy or adversely modify its critical habitat.

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, we designate critical habitat at the time the species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)(1)) state that the 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 Final Listing Priority Guidance for FY 1999/2000 (64 FR 57114) states, that the processing of critical habitat determinations (prudence and determinability decisions) and proposed or final designations of critical habitat will no longer be subject to prioritization under the Listing Priority Guidance. Critical habitat determinations, which were previously included in final listing rules published in the **Federal Register**, may now be processed separately, in which case stand-alone critical habitat determinations will be published as notices in the **Federal Register**. We will undertake critical habitat

determinations and designations during FY 1999 and FY 2000 as allowed by our funding allocation for that year. As explained in detail in the Listing Priority Guidance, our listing budget is currently insufficient to allow us to immediately complete all of the listing actions required by the Act.

We propose that critical habitat is prudent for the Ohlone tiger beetle. In the last few years, a series of court decisions have overturned Service determinations regarding a variety of species that designation of critical habitat would not be prudent (*e.g.*, *Natural Resources Defense Council v. U.S. Department of the Interior* 113 F. 3d 1121 (9th Cir. 1997); *Conservation Council for Hawaii v. Babbitt*, 2 F. Supp. 2d 1280 (D. Hawaii 1998)). Based on the standards applied in those judicial opinions, we believe that designation of critical habitat would be prudent for the Ohlone tiger beetle.

Due to the small number of populations, Ohlone tiger beetle is vulnerable to unrestricted collection, vandalism, or other disturbance. We are concerned that these threats might be exacerbated by the publication of critical habitat maps and further dissemination of locational information. However, at this time we do not have specific evidence for Ohlone tiger beetle of taking, vandalism, collection, or trade of this species or any similarly situated species. Consequently, consistent with applicable regulations (50 CFR 424.12(a)(1)(i)) and recent case law, we do not expect that the identification of critical habitat will increase the degree of threat to this species of taking or other human activity.

In the absence of a finding that critical habitat would increase threats to a species, if any benefits would derive from critical habitat designation, then a prudent finding is warranted. In the case of this species, designation of critical habitat may provide some benefits. The primary regulatory effect of critical habitat is the section 7 requirement that Federal agencies refrain from taking any action that destroys or adversely modifies critical habitat. While a critical habitat designation for habitat currently occupied by this species would not be likely to change the section 7 consultation outcome because an action that destroys or adversely modifies such critical habitat would also be likely to result in jeopardy to the species, there may be instances where section 7 consultation would be triggered only if critical habitat is designated. Examples could include unoccupied habitat or occupied habitat that may become unoccupied in the future. Designating

critical habitat may also produce some educational or informational benefits. Therefore, we propose that critical habitat is prudent for Ohlone tiger beetle. However, the deferral of the critical habitat designation for Ohlone tiger beetle will allow us to concentrate our limited resources on higher priority critical habitat and other listing actions, while allowing us to put in place protections needed for the conservation of Ohlone tiger beetle without further delay. We anticipate in FY 2000 and beyond giving higher priority to critical habitat designation, including designations deferred pursuant to the Listing Priority Guidance, such as the designation for this species, than we have in recent fiscal years.

We plan to employ a priority system for deciding which outstanding critical habitat designations should be addressed first. We will focus our efforts on those designations that will provide the most conservation benefit, taking into consideration the efficacy of critical habitat designation in addressing the threats to the species, and the magnitude and immediacy of those threats. We will make the final critical habitat determination with the final listing determination for Ohlone tiger beetle. If this final critical habitat determination is that critical habitat is prudent, we will develop a proposal to designate critical habitat for Ohlone tiger beetle as soon as feasible, considering our workload priorities. Unfortunately, for the immediate future, most of Region 1's listing budget must be directed to complying with numerous court orders and settlement agreements, as well as due and overdue final listing determinations.

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 activities. Recognition through listing results in public awareness and 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 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 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 us on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with us.

Federal involvements are not known to exist within the habitat of the Ohlone tiger beetle. If any Federal agency were to fund or issue permits for a project that may affect the Ohlone tiger beetle, that agency would be required to consult with us. Possible nexuses include the Department of Housing and Urban Development and the Department of Commerce's Small Business Administration for funding, and the U.S. Army Corps of Engineers for permits authorized under section 404 of the Clean Water Act.

Listing the Ohlone tiger beetle as endangered will provide for the development of a recovery plan. Such a plan will bring together Federal, State, and local efforts for its conservation. The plan will establish a framework for cooperation and coordination in conservation efforts. The plan will set recovery priorities and estimate costs of various tasks necessary to accomplish them. It also will describe site-specific management actions necessary to achieve the conservation and survival of the Ohlone tiger beetle.

The Act and implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, 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, capture, 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 endangered wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to

our agents and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 and 17.23. For endangered species, 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.

As published in the **Federal Register** on July 1, 1994 (59 FR 34272), it is our policy 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. The intent of this policy is to increase public awareness of the effect of this listing on proposed and ongoing activities within the species' range.

We believe that, based on the best available information, if the Ohlone tiger beetle is listed under the Act, the following actions are not likely to result in a violation of section 9, provided these activities are carried out in accordance with existing regulations and permit requirements:

(1) Possession, delivery, or movement, including interstate transport and import into or export from the United States, involving no commercial activity, of dead specimens of this taxon that were collected prior to the date of publication in the **Federal Register** of a final regulation adding this taxon to the list of endangered species; and (2) Activities conducted in accordance with reasonable and prudent measures identified by us in a biological opinion issued pursuant to section 7 of the Act, and activities authorized under section 10 of the Act.

We believe that the following actions could result in a violation of section 9; however, possible violations are not limited to these actions alone:

(1) Collection of specimens of this taxon for private possession or deposition in an institutional collection;

(2) Sale or purchase of specimens of this taxon, except for properly documented antique specimens of this taxon at least 100 years old, as defined by section 10(h)(1) of the Act;

(3) The unauthorized release of biological control agents that attack any life stage of this taxon; and

(4) Noncompliance with the California Department of Parks and Recreation management plans that restrict recreational uses (*i.e.*, biking and foot traffic) of areas designated as occupied habitat by the Ohlone tiger beetle.

Dated: January 20, 2000.

Jamie Rappaport Clark,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 00-3277 Filed 2-10-00; 8:45 am]

BILLING CODE 4310-55-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 223

[Docket No. 000202022-0022-01; I.D. 012100F]

RIN 0648-AN58

Endangered and Threatened Species: Threatened Status for One Evolutionarily Significant Unit of Steelhead in California

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: Based on a comprehensive status review of west coast steelhead (*Oncorhynchus mykiss*, or *O. mykiss*) populations throughout Washington, Oregon, Idaho, and California, NMFS proposed to list 10 Evolutionarily Significant Units (ESUs) as threatened or endangered under the Endangered Species Act (ESA) in 1996. One of these steelhead ESUs, the Northern California ESU, was proposed for listing as a threatened species. Because of scientific disagreements, NMFS deferred its final listing determination for five of these steelhead ESUs, including the Northern California ESU, in August 1997. After soliciting and reviewing additional information to resolve these disagreements, NMFS issued a final determination in March 1998 that the Northern California ESU did not warrant listing under the ESA because available scientific information and conservation measures indicated the ESU was at a lower risk of extinction than at the time of the proposed rule. Because the State of California has failed to implement conservation measures that NMFS considered critically important in its decision not to list the Northern California steelhead ESU, NMFS completed an updated status review and has reconsidered the status of this ESU under the ESA.

Based on this review, NMFS has determined that the Northern California steelhead ESU warrants listing as a threatened species at this time. Accordingly, NMFS is now issuing a

proposed rule to list this ESU as threatened under the ESA.

DATES: A public hearing on this proposal will be held on March 15, 2000, from 6:30 p.m.-9:00 p.m. Requests for additional public hearings must be received by March 27, 2000. Comments on this proposal must be received at the appropriate address or fax number (See **ADDRESSES**), no later than 5 p.m. pacific standard time, on April 11, 2000. Comments will not be accepted if submitted via e-mail or Internet.

ADDRESSES: The public hearing will be held at the Eureka Inn, 518 Seventh St., Eureka, California. Comments on this proposed rule and requests for additional public hearings or reference materials should be sent to the Chief, Protected Resources Division, NMFS, Southwest Region, 401 West Ocean Blvd., Suite 4200, Long Beach, CA 90802-4213. Comments may also be sent via facsimile (fax) to 562-980-4027.

FOR FURTHER INFORMATION CONTACT: Craig Wingert, 562-980-4021, or Chris Mobley, 301-713-1401.

SUPPLEMENTARY INFORMATION:

Previous Federal ESA Actions Related to West Coast Steelhead

The history of petitions NMFS has received regarding west coast steelhead is summarized in a final rule and notice of determination for five steelhead ESUs (Lower Columbia River; Central Valley, California; Oregon Coast; Klamath Mountains Province; and Northern California ESUs) that was published on March 19, 1998 (63 FR 13347). The most comprehensive petition was submitted by Oregon Natural Resources Council and 15 co-petitioners on February 16, 1994. In response to this petition, NMFS assessed the best available scientific and commercial data, including technical information from Pacific Salmon Biological Technical Committees (PSBTCs) and interested parties in Washington, Oregon, Idaho, and California, and convened a Biological Review Team (BRT), composed of staff from NMFS' Northwest and Southwest Fisheries Science Centers and Southwest Regional Office, as well as a representative of the U.S. Geological Survey Biological Resources Division (formerly the National Biological Service) to conduct a coast-wide status review for west coast steelhead (Busby *et al.*, 1996).

Based on the results of the BRT's status review, an analysis of Federal, state, and local conservation measures, and other information which NMFS determined constituted the best scientific and commercial data

available, NMFS published a proposed listing determination (61 FR 41541, August 9, 1996) that identified 15 ESUs of steelhead in the states of Washington, Oregon, Idaho, and California. Ten of these ESUs, including the Northern California ESU, were proposed for listing as threatened or endangered species, four were found not warranted for listing, and one was identified as a candidate for listing.

On August 18, 1997, NMFS published a final rule listing five ESUs as threatened and endangered under the ESA (62 FR 43937, August 18, 1997). In a separate document published on the same day, NMFS determined substantial scientific disagreement remained for five proposed ESUs, including the Northern California steelhead ESU (62 FR 43974, August 18, 1997). In accordance with section 4(b)(6)(B)(i) of the ESA, NMFS deferred its decision on these five steelhead ESUs for 6 months for the purpose of soliciting additional data. During this 6-month period of deferral, NMFS received new scientific information regarding the status of these proposed steelhead ESUs. This new information was evaluated by NMFS' BRT which prepared both an updated status review for these five ESUs [Memorandum to William Stelle and William Hogarth from M. Schiewe, December 18, 1997, Status of Deferred and Candidate ESUs of West Coast Steelhead (NMFS, 1997a), and a review of the associated hatchery populations [Memorandum to William Stelle and William Hogarth from Michael Schiewe, January 13, 1998, Status Review Update for Deferred ESUs of West Coast Steelhead: Hatchery Populations (NMFS, 1998a)].

Based on a review of the updated scientific information for these ESUs, as well as a review and evaluation of Federal, State, and local conservation measures reducing the threats to these ESUs, NMFS issued a final rule (63 FR 13347, March 19, 1998) listing two ESUs as threatened (Lower Columbia River and Central Valley California), and a notice of determination that three ESUs (Oregon Coast, Klamath Mountains Province, and Northern California) did not warrant listing. NMFS' determination that these three ESUs did not warrant listing was based on the best available scientific and commercial data, which indicated these ESUs were at a lower risk of extinction than at the time of the proposed listing determination. Even though the risks confronting these ESUs had been reduced to a point at which listing was not warranted, NMFS still expressed concerns about the status of these three ESUs in the notice of determination,