

## **5-YEAR REVIEW**

### **Ohlone Tiger Beetle (*Cicindela ohlone*)**



Ohlone tiger beetle. Photo: Terry Rein

**October 2019**

## **GENERAL INFORMATION:**

**Species:** *Cicindela ohlone*

**Date listed:** October 3, 2001

**FR citation(s):** 66 FR 50340

**Classification:** Endangered

## **BACKGROUND:**

**Most recent status review:** U.S. Fish and Wildlife Service. 2009. Ohlone tiger beetle (*Cicindela ohlone*) 5-Year Review: Summary and Evaluation. USFWS. Ventura Field Office. Ventura, California.

**FR Notice citation announcing this status review:** U.S. Fish and Wildlife Service. 2019. Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Status Reviews of 58 Species in California, Nevada, and the Klamath Basin of Oregon. Federal Register 84:36116-36118.

## **ASSESSMENT:**

### **Information acquired since the last status review:**

This 5-year review was conducted by the U.S. Fish and Wildlife Service's (Service) Ventura Fish and Wildlife Office. Data for this review were solicited from interested parties through a Federal Register notice announcing this review on July 26, 2019. We also contacted State and local agencies, partners, stakeholders, and species experts to request any data or information we should consider in our review. Additionally, we conducted a literature search and a review of information in our files.

The Ohlone tiger beetle is a member of the Coleopteran family Cicindelidae (tiger beetles) and is endemic to Santa Cruz County, California. The species is known only from coastal terraces supporting remnant patches of native grassland habitat, associated with either Watsonville loam or Bonnydoon soil types, characterized by shallow, pale, poorly drained clay or sandy clay soil that bakes to a hard crust by summer, after winter and spring rains cease. Adult beetles are typically found along trails or barren areas among low, sparse vegetation within the grassland habitat. Ohlone tiger beetles require these open areas for construction of larval burrows, thermoregulation, and foraging. The density of burrows decreases with increasing vegetation cover. Ohlone tiger beetles are diurnal, predatory insects that prey on small arthropods. Ohlone tiger beetle larvae are also predatory; they live in small, vertical burrows from which they lunge and seize passing invertebrate prey.

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 historically, prior to the increase in urban development and agriculture. However, we have no evidence or data indicating that this species occurred beyond the present known occupied areas of Santa Cruz County.

At the time of listing in 2001, 16 occurrences of the Ohlone tiger beetle were known from 5 geographic areas (Table 1). At the time of our last status review in 2009, 9 previously known occurrences were not detected that year and were thought to be extirpated, with the 7 observed occurrences distributed in only 3 geographic areas. Since 2009, 8 sites have been confirmed or assumed to be present, while the 8 remaining sites are thought to be extirpated or potentially extirpated (Table 1). It should be noted that surveys are not routinely conducted at all previously known locations. Suitable breeding habitat is highly dynamic and is largely a result of cumulative annual weather conditions (rainfall, temperature, etc.) and management actions (grazing, mowing, etc.) that occurred the previous year. Although a large portion of occurrences in Table 1 are referred to as potentially extirpated, the potential for recolonization is high, as most of these locations have not been lost to development, rather, only need consistent management in the form of grazing, mowing, or other habitat manipulation techniques.

Table 1. Status of Ohlone tiger beetle at the 16 known breeding locations in Santa Cruz County, California.

Site Number (2009 5-Year Review)	Location	Last known occurrence as of 2009 status review	Last known occurrence as of this status review	Assumed or Known Present = P, Potentially Extirpated = PE, Extirpated = E
Occurrence 1	West of the City of Soquel	2008	2008	E
Occurrence 2	City of Scotts Valley	2009	2019	P
Occurrence 3	West of the City of Santa Cruz	2005	2018	P
Occurrence 4	Northwest of the City of Santa Cruz	2009	2009	P
Occurrence 5	North of City of Santa Cruz	2004	2004	E
Occurrence 6	Northwest of the City of Santa Cruz	2009	2019	P
Occurrence 7	Northwest of the City of Santa Cruz	2004	2019	P
Occurrence 8	West of the City of Santa Cruz	2004	2013	PE
Occurrence 9	West of the City of Santa Cruz	1998	1998	E
Occurrence 10	West of the City of Santa Cruz	2009	2019	P
Occurrence 11	West of the City of Santa Cruz	2009	2009	PE
Occurrence 12	West of the City of Santa Cruz	2009	2018	P
Occurrence 13	West of the City of Santa Cruz	2004	2004	PE
Occurrence 14	Northwest of the City of Santa Cruz	2009	2009	PE
Occurrence 15	Northwest of the City of Santa Cruz	2004	2004	PE
Occurrence 16	Northwest of the City of Santa Cruz	2004	2019	P

Long-term population monitoring data are only available from one location, Occurrence 2 (Table 1). Population monitoring data have been collected at this location since 2000 (Overtree 2018) and illustrate the variability in annual population numbers at this well managed property. The adult population in 2000 was estimated to be 406 individuals, while in 2018 the population was estimated to be 845. Within this timeframe, a low of 136 adults was estimated in 2005, with the largest estimate of 1,035 adults in 2016.

At time of listing in 2001, destruction and degradation of habitat were identified as the primary threats to the Ohlone tiger beetle. Other threats identified at time of listing were unrestricted collecting, predation and parasitism, inadequacy of existing regulatory mechanisms, stochastic events, recreational activities, and use of pesticides. At the time of the 2009 5-year review, all threats identified at time of listing were considered on-going. In particular, habitat degradation due to encroachment by nonnative plants was found to be a much more serious threat than in 2001. Much of the habitat for this species was found to be suitable for development and unprotected from these threats. Currently, all threats identified as on-going in the 2009 5-year review remain on-going. Nonnative plants and urban development remain the primary threats to the species.

**Conclusion:**

After reviewing the best available scientific information, we conclude that the Ohlone tiger beetle remains an endangered species. The evaluation of threats affecting the species under the factors in 4(a)(1) of the Act and analysis of the status of the species in our most recent 5-Year Review (Service 2009) remain an accurate reflection of the species current status.

**RECOMMENDATIONS FOR FUTURE ACTIONS:**

- Enhance existing and potential habitat throughout the species range, as necessary, through removal of invasive species, grazing, burning, planting, or other management actions deemed appropriate by the Service.
- Investigate and implement a captive propagation program for the species to bolster existing populations and to introduce the species to suitable breeding habitats.
- Investigate and implement the translocation of individuals between populations to ensure genetic diversity.
- Work with the City of Santa Cruz to develop coastal prairie management plans for City owned properties.
- Work with the University of California, Santa Cruz (UCSC) to ensure potential and suitable habitats on UCSC lands are managed for the benefit of the species.

**Lead Field Supervisor, Fish and Wildlife Service**

Approve  Date 11/6/19

**Literature Cited:**

Overtree, L. 2018. Ohlone Tiger Beetle Monitoring Report. Glenwood Open Space Preserve  
2018. Land Trust of Santa Cruz County.