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SURVEY OF LOBOS CREEK,
SAN FRANCISCO, CA
FOR
SAN FRANCISCO FORK-TAILED DAMSELFLY

Ischnura gemina (Kennedy)

AND

TREE LUPINE MOTH

Grapholita edwardsiana (Kearfott)

* * *

August - September 1988

Prepared for
Baseline Consulting

by

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I SAN FRANCISCO FORK-TAILED DAMSELFLY *Ischnura gemina* (Kennedy)

Historical Background

Kennedy described the San Francisco Fork-Tailed Damselfly, *Ischnura gemina*, in 1915 from three specimens collected near the Stanford University campus. It was collected infrequently during the following four decades and was thought to have gone extinct until a specimen was collected in Marin County by an entomology student at the University of California, Berkeley, for a class project. This prompted Rosser Garrison, then a graduate student of Odonata systematics at Berkeley, and fellow student John Hafernik to conduct more extensive surveys for the damselfly around the bay area. They determined that small colonies persisted in the San Francisco Bay Area, but that it was common nowhere, and that many colonies survived in precarious habitats. It likely was they who proposed that *gemina* receive federal protection.

I contacted John Hafernik, who is now a professor of Zoology at San Francisco State University and continues to study this rare insect, on 3 September 1988 to determine his experience with this species, if any, at or near the Lobos Creek site. Dr. Hafernik stated that he had not surveyed Lobos Creek, but had searched unsuccessfully for the damselfly at several sites within the San Francisco Presidio and nearby areas where access was unrestricted. He stated that he had found *Ischnura cervula* Selys in low numbers at several sites, but no specimens of *I. gemina* or any other species of *Ischnura* were taken.

Habitat Requirements

Larvae of *Ischnura gemina*, like other species of *Ischnura*, are found in still to moderately slow running water having emergent vegetation and plentiful prey. They can be found in protected areas of swifter streams where the flow is diminished by eddies and backwashes from logs, vegetation, rocks or similar obstructions. A good indicator of

suitable habitat is one where cattails (*Typha*) or duckweed (*Lemna*) grows, as their presence is indicative of calmer waters.

Adults are found only near suitable larval habitat. Females tend to stay closer to water than males. Adults have been captured from March to October.

The Lobos Creek Site

I first visited Lobos Creek on 14 August 1988 to examine the creek without making more than a cursory effort to survey for *I gemina*. The creek appeared to be suitable habitat for *Ischnura* as the creek flows sluggishly over most of its length and aquatic vegetation, including duckweed, is plentiful. A few adult damselflies were taken, but all were species of the genus *Argia*.

Survey for *Ischnura gemina*

After the initial site inspection of 14 August 1988 and a prolonged period of unseasonably cool, overcast weather when collecting adults would have been impossible, I collected adult damselflies for three successive weeks in September on the 3rd, 10th and 17th. I used a sweep net to collect all adults of *Ischnura* seen, if any, and to collect any other adult whose generic identity could not be determined without closer inspection. On each occasion, I waded the length of Lobos Creek from the spillway at the west end of the enclosed area eastward for approximately 1/2 mile to the point where travel was inhibited by overgrown shrubs. I waded the creek twice in both directions staying close to the north shore on one trip and closer to the south bank on the second. No *Ischnura gemina* was detected. The complete results of these surveys are contained in table 1.

I also made a single west-east and east-west collection along the north bank on each date. The totals seen or captured are included in the totals of Table 1.

On the last date, 17 September 1988, I collected a few larvae with an aquatic net. This proved to be difficult as watercress has choked much of the creek so that sweeping the vegetation generally results in a muddy tangle of weeds, and the larvae were difficult to disentangle from the mire. I did manage to wash 13 larvae from the muck. All were larvae of *Argia*, the most abundant genus of damselfly at the site.

Conclusions

No *Ischnura gemina* adults or larvae were found at the Lobos Creek site, and it is unlikely that it occurs there. However, except for a very few sites where *Ischnura* exists with little competition from other species of damselflies, *gemina* is common nowhere. At a site such as Lobos Creek where there is a large population of *Argia*, *gemina* could easily be overlooked and might not be detected even by a more intensive collection effort than during my survey.

Two other species of *Ischnura* were found there. One adult *I. perparva* Selys was captured on 3 September, and three adults of *I. cervula* were collected, two on 10 September and one on 17 September. Their presence indicates that the habitat is suitable for *gemina*. *I. perparva* was not seen at the Presidio sites visited by John Hafernik when he surveyed for *gemina*, so its discovery suggests that *gemina* may yet be found at Lobos Creek, but possibly only with an enormous collecting effort.

In summation, I found no evidence that *I. gemina* is present at Lobos Creek, and I do not believe that it occurs there. The habitat seems to be suitable, and *I. gemina* may yet be found there, so during construction activity, the quality of the creek should be maintained by preventing soil or construction materials from fouling the creek. This would also preserve Lobos Creek as a potential site for introduction of this rare species from other localities should this be needed to save the species.

Table 1. CENSUS OF DAMSELFLIES AT LOBOS CREEK
SEPTEMBER 1988

<u>Date</u>	<u><i>Ischnura</i> <i>perparva</i></u>	<u><i>Ischnura</i> <i>cervula</i></u>	<u><i>Argia</i> <i>spp.</i></u>
3 Sept. 1988 (1140 - 1520)	1	0	293
10 Sept. 1988 (1110 - 1535)	0	2	282
17 Sept. 1988 (1045 - 1430)	0	1	305
(1430 - 1530)			13 larvae
TOTAL COUNTED:			
Adults:	1	3	980
Larvae:	0	0	13