

Management Actions and Population Trends For the Twin Lakes Population of *Holocarpha macradenia* Santa Cruz Tarplant September 1998 thru July 2003

In 1998 and 1999 and 2001 the Twin Lakes population of *Holocarpha macradenia* was mowed once in the spring once in the fall using a string trimmer. The litter was then removed using garden rakes or McCleods. The site was scraped after the fall mowing using McCleods. One third of the seed heads were collected to be propagated off site in order to increase seed stock. In 2000 an early rain that had the potential to cause germination of *H. macradenia* occurred so no scraping was conducted.

In 2002 mowing continued and 15 nursery raised plants were planted at the site on February 6th. These plants were more robust than the naturally occurring individuals and produced over ten times the number of seed heads than those that germinated on their own.

Encouraged by the 2002 results 494 plants, grown from seed collected in previous years, were planted in two macro plots adjacent to the existing population in the winter of 2002. Of these plants 344 survived but they were no more robust than the naturally occurring individuals. This was probably due to the decision to plant them early as opposed to the previous planting which consisted of plants which were grown to a larger size before being planted out.

The area where plants naturally occurred, in addition to one of the two macro plots, were mowed twice this year as well as being treated with a chain harrow. Also this year several small trees and shrubs were removed from the site.

Below is a summary of the population trends during the years discussed above. Given the small size of this population it is our intention to continue with our current management as well as incorporating any management techniques presented at this workshop that may result in an increase in the population of *H macradenia* at Twin Lakes State Beach.

Summary of <i>Holocarpha macradenia</i> productivity at Twin Lakes State Park 1998 - 2003		
Year	Naturally Occuring Plants	Number of Flower Heads
1998	no data	no data
1999	16	20
2000	7	14
2001	19	38
2002	7	17
2003	5	7

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