City of San Diego
Multiple Species Conservation Program

Summary of Monitoring Results for *Ambrosia pumila*

August 2003

Introduction

San Diego ambrosia (*Ambrosia pumila*) is a sensitive plant species whose northernmost distribution is in southern Riverside County. This perennial herb species was once common in northern Baja California, Mexico but its distribution has been significantly reduced by expansion of agricultural land use. Modern land use within San Diego County has also greatly reduced the historic distribution of San Diego ambrosia. This plant species appears to propagate from a subterranean, rhizome-like root instead of a typical seed-dependant reproduction strategy. If San Diego ambrosia only reproduces vegetatively and is limited in its ability to sexually reproduce, it may not be able to adapt to changing conditions. This may also be partially responsible for the limited distribution of San Diego ambrosia.

Monitoring for this plant in Mission Trails Regional Park (MTRP) was conducted on August 15 and August 18, 2003 by Holly Cheong, Melanie Johnson, Betsy Miller, Khalil Martinez, and Eden Nguyen. The largest patch of San Diego ambrosia in MTRP, which is located adjacent to the Kumeyaay Lake Campground, was surveyed. The patch surveyed is identified as patch C6 in the City of San Diego Mission Trails Regional Park San Diego Ambrosia Management Plan (Dudek & Associates, 2000). The goal of the effort was to continue long-term monitoring of San Diego ambrosia under the Multiple Species Conservation Program (MSCP).

Methodology

Monitoring for this species was conducted in accordance with the Biological Monitoring Plan for the Multiple Species Conservation Program (Biological Monitoring Plan), dated January 25, 1996. Previous surveys in MTRP were conducted by Dudek & Associates in 1998 (Dudek & Associates, 2000) and by MSCP staff in 2000 and 2001.

The largest patch of San Diego ambrosia at MTRP (patch C6) was chosen as a sampling area. Transect lines were randomly allocated along an east to west stratification line in an attempt to avoid problems with potential environmental gradients and the clumping distribution of San Diego ambrosia. Steel rods were installed to indicate the location of each transect. Transect post locations were mapped using a Global Positioning System (GPS). The total number of transects (N=13) and total number of quadrats (N=334) sampled approximately 5% of the total sampling area.

A one meter square (1 m^2) quadrat was used to define the quadrat boundary and estimate population size. The 1 m^2 quadrat was placed along the transect so that the quadrat was on the west side of the transect. Each plant located within the 1 m^2 quadrat was counted and the total number for each quadrat was recorded. Quadrats were placed at 1 m intervals along each transect.

Each patch documented in the 1998 surveys (Dudek and Associates, 2000) was checked for presence or absence of San Diego ambrosia. A submeter GPS was used to locate the patches.

Results and Conclusions

It is estimated from the results of the transects that approximately 205,826 adult individuals of San Diego ambrosia were found in patch C6 in MTRP adjacent to the Kumeyaay Lake Campground. In comparison, approximately 121,702 individuals were estimated in 2000, 178,624 in 2001, and 208,855 individuals in 1998 (Dudek and Associates, 2000). Flowering adults were not counted separately from non-flowering adults because the plant's seeds are not considered viable according to viability testing conducted in 1998 (Dudek & Associates, 2000).

Although only the largest patch was surveyed using the quadrat method, each patch previously documented in 1998 (Dudek & Associates, 2000) was checked to determine presence or absence of San Diego ambrosia. All patches contained San Diego ambrosia.

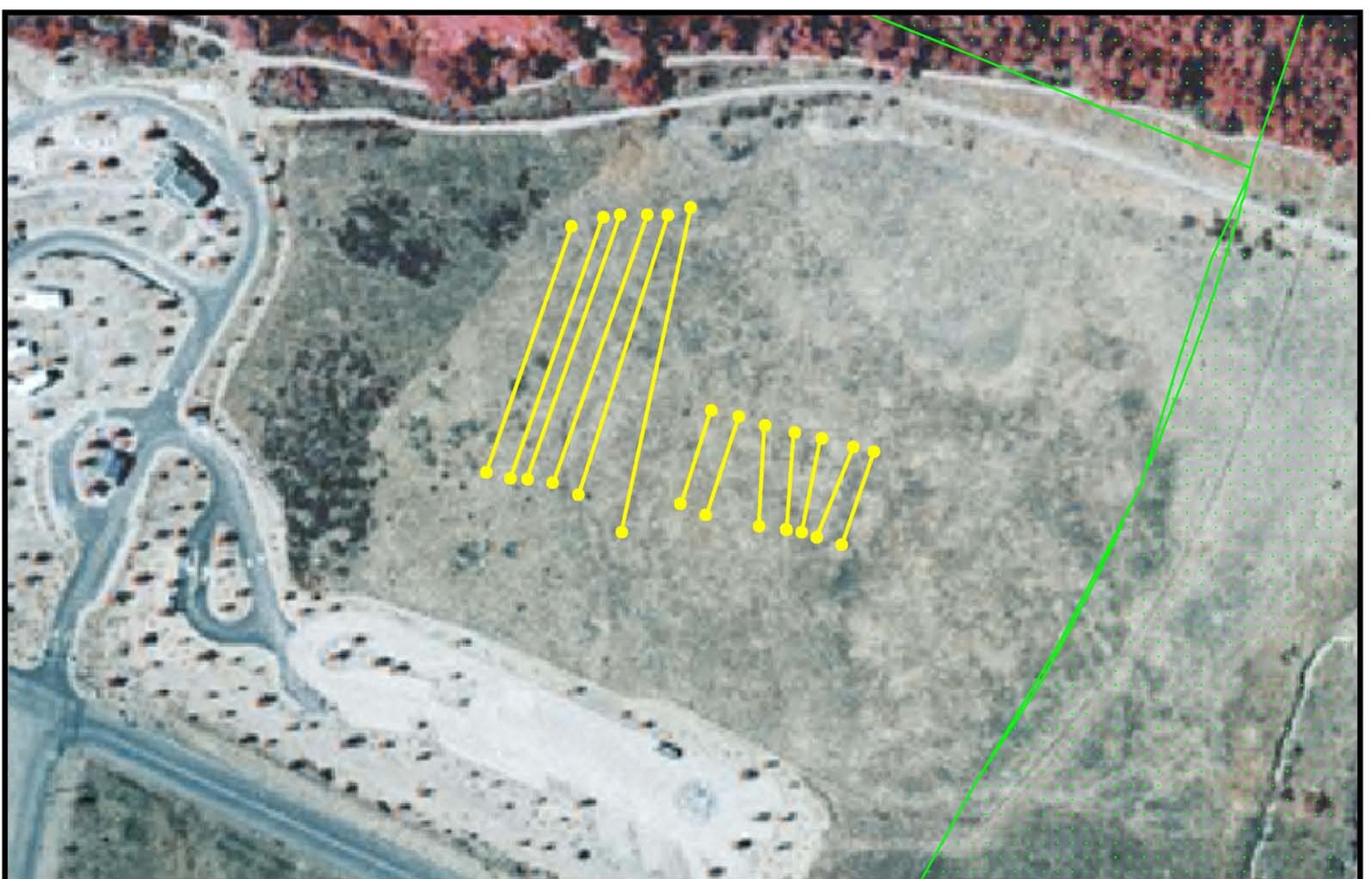
Recommendations

Additional surveys should be conducted on-site to determine the status of San Diego ambrosia. However, given the unique biology of San Diego ambrosia, the plant species might be better estimated through different sampling techniques, such as percent cover estimates.

Additional populations of San Diego ambrosia have been documented in Santee and the San Diego National Wildlife Refuge. The City of San Diego should coordinate survey information with the City of Santee and U.S. Fish and Wildlife Service Refuges Division in order to determine the regional status of the species.

References

Dudek & Associates, Inc. May 15, 2000. City of San Diego Mission Trails Regional Park San Diego Ambrosia Management Plan. 34pp. + appendices.



Sampling Transects

MHPA

Mission Trails

Ambrosia pumila

Survey Date: 8/15/03, 8/18/03

N

Source:
H. Cheong, M. Johnson, E. Nguyen,
B. Miller, K. Martinez