

**City of San Diego
Multiple Species Conservation Program**

**Summary of Monitoring Results for
*Dudleya variegata***

June 2003

Introduction

Variegated dudleya (*Dudleya variegata*) is a small, succulent plant that is found in grassland areas and open areas in chaparral. This species is considered a narrow endemic species under the Multiple Species Conservation Program (MSCP).

Monitoring for this plant was conducted between May and June of 2003 in various locations. Monitoring for this species began in 2001 and has been conducted annually (McMillan Biological Consulting and Conservation Biology Institute, 2001; Wildlife Research Institute, 2002). The locations, dates, and survey personnel for each survey is given in the table below. The methodology and results of the monitoring are detailed below. In addition, monitoring of the Mission Trails population was conducted this year by the Friends of Los Penasquitos Canyon and Mission Trails Regional Park staff. The goal of the effort was to continue the annual collection of data for long-term monitoring of variegated dudleya under the MSCP.

Variegated Dudleya Surveys, 2003		
Location	Date	Surveyors
Otay Lakes	May 30, 2003	Holly Cheong, Chad Kane, Keli Balo, Michael Klein, Keith Greer, Melanie Johnson, Randy Rodriguez
Margerum Avenue	June 6, 2003	Holly Cheong, Keli Balo, Eden Nguyen, Melanie Johnson
Goat Mesa	June 11, 2003	Holly Cheong, Keli Balo, Eden Nguyen
Mercy Road, Black Mountain Ranch	June 13, 2003	Holly Cheong, Eden Nguyen, Jan Atha, Anna Shepherd

Methodology

Monitoring for this species was conducted in accordance with the Biological Monitoring Plan for the Multiple Species Conservation Program (Monitoring Plan), dated January 25, 1996. The location of each sampling site was determined by field level surveys and then depicted on aerial photographs. Each population was censused except for Otay Lakes. In Otay Lakes, sixteen transects were randomly allocated with varying lengths throughout the population. The belt transect method was used to estimate the size of the Otay Lakes population. Plants were counted within 1 meter on either side of the transect (2 meters wide total) and 2 meters on either side of the transect (4 meters wide total). Separate counts were taken for a 2 meter wide belt and a 4 meter wide belt to determine if the 4 meter belt produced an estimate with a greater confidence interval than the 2 meter belt.

Results

Surveyors estimated a total of 31,256 plants, which included 31,250 flowering individuals and 6 non-flowering individuals. A description of each site and the number of individuals found at each site is given below.

Otay Lakes

The Otay Lakes variegated dudleya population is located in the eastern portion of lower Otay Lake (see attached figure). These lands are conserved for watershed management of the adjacent Otay Lakes and will be included as a City of San Diego cornerstone conservation bank in the future. A total of 24,921 flowering individuals were estimated within Otay Lakes using the 1 meter belt transect method. A total of 24,283 flowering individuals were estimated within Otay Lakes using the 2 meter belt transect method. Non-flowering individuals were not observed at this site. A total of 10,000 + individuals were estimated from surveys conducted in 2001. In 2002, variegated dudleya did not come up at this site.

Margerum Avenue

The Margerum Avenue variegated dudleya population is located in Rancho Mission Park accessible off of Margerum Avenue (see attached figure). This area is a dedicated open space park with hiking trails and picnic areas. The variegated dudleya population is on the other side of a creek that has formed from the adjacent development and is relatively isolated from recreational activities. A total of 3,209 flowering individuals were documented on site in 2003. No flowering individuals were observed. In 2001, 215 individuals were documented on-site. In 2002, variegated dudleya did not come up at this site.

Goat Mesa

The Goat Mesa variegated dudleya population is located in Otay Mesa above Spring Canyon (see attached figure). In 2003, 3,004 individuals were counted including 2,998 flowering individuals and 6 non-flowering individuals. In 2001, 1,000 plants were estimated to be on-site. No individuals were observed in 2002.

Mercy Road

The Mercy Road variegated dudleya population is part of Los Peñasquitos Canyon Preserve accessible off of Mercy Road (see attached figure). In 2003, 738 flowering individuals were counted. No non-flowering individuals were observed. In 2001, 1000 + individuals were estimated. No individuals were observed in 2002.

Black Mountain Ranch

The Black Mountain Ranch variegated dudleya population is located within the Black Mountain Ranch (Santa Luz) open space area northwest of Black Mountain Open Space Park (see attached

figure). This population was inadvertently disturbed during construction and is currently undergoing restoration. A total of 22 flowering individuals were observed on-site. In 2001, 114 plants were counted on-site. No individuals were observed in 2002.

Recommendations

In terms of future sampling methodology, a census of all individuals present should be taken whenever possible. If a census cannot be done, the belt transect sampling method appears to be a viable, efficient sampling method for this species. The 1 meter belt transect method is recommended since sampling out to 2 meters on either side of the transect is more time consuming and did not result in increased accuracy.

References

McMillan Biological Consulting and Conservation Biology Institute. 2001 MSCP Rare Plant Survey and Monitoring Report. 2001.

Ogden Environmental. Biological Monitoring Plan for the Multiple Species Conservation Program. 1996.

Wildlife Research Institute. 2002 MSCP Rare Plant Survey and Monitoring Report. 2002.

Black Mountain Ranch

Dudleya variegata

 Dudleya Population

 MHPA



Source: H. Cheong,
E. Nguyen,
A. Shepherd
J. Atha,
Survey Date: 6/13/03



Goat Mesa

Dudleya variegata

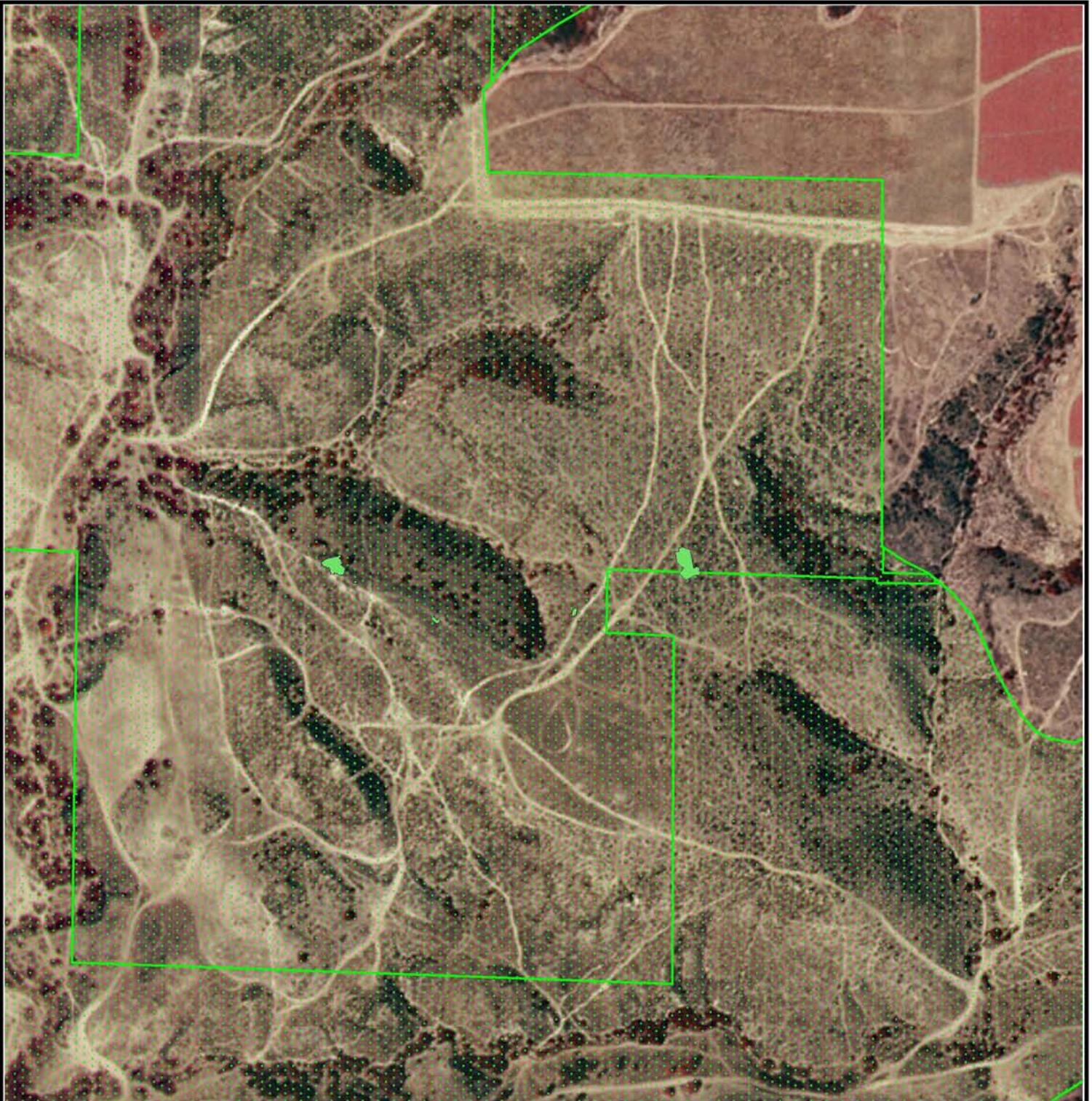
 Population Area

 MHPA



Sources: H. Cheong,
M. Johnson, K. Balo

Survey Date:
6/11/03





Population Area



MHPA

Margerum Ave

Dudleya variegata

Survey Date: 6/6/03



Source: H. Cheong, K. Balo
M. Johnson, E. Nguyen



Population Area



MHPA

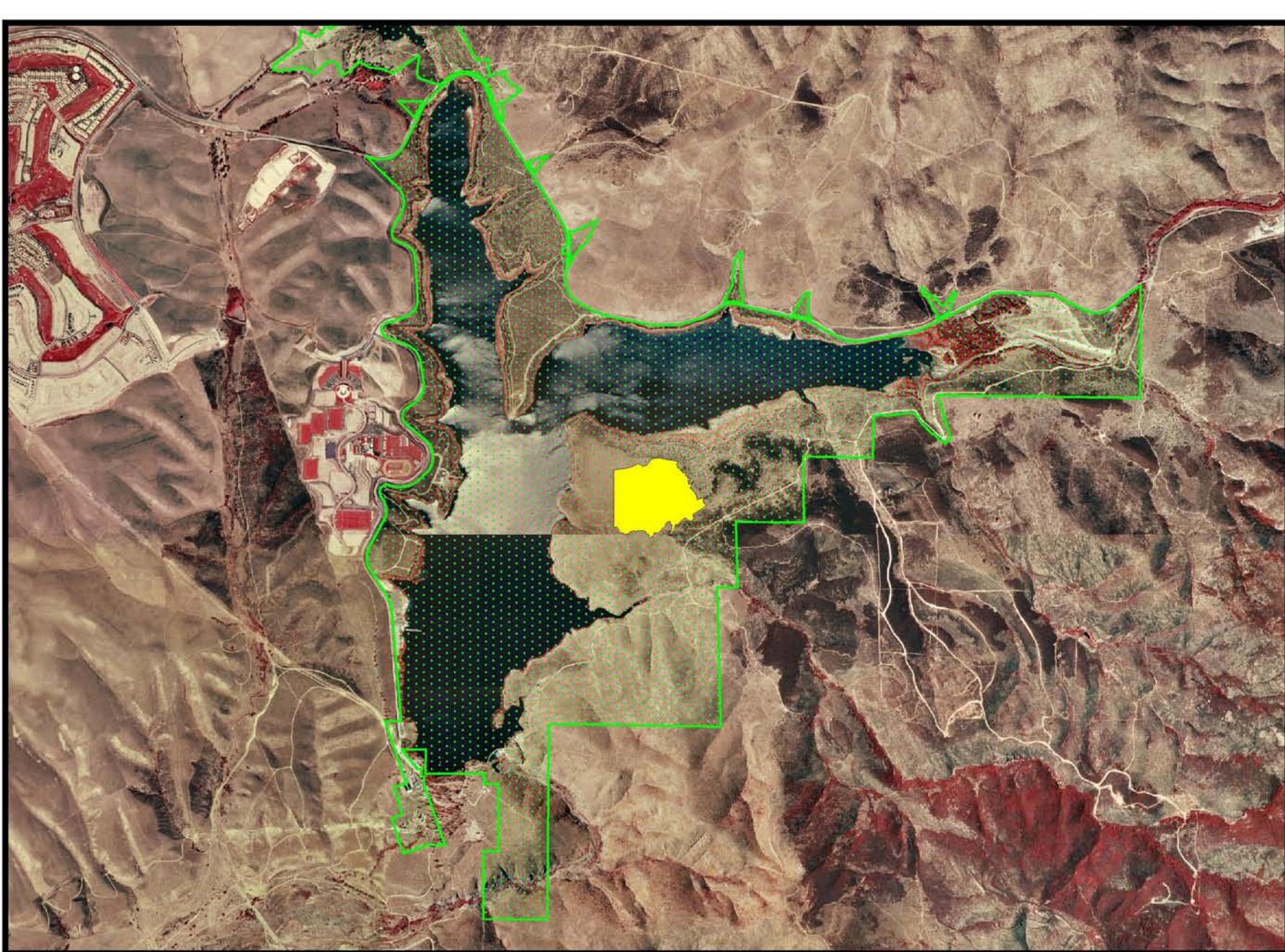
Mercy Road

Dudleya variegata

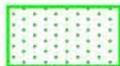
Survey Date: 6/13/03



Source: H. Cheong, J. Atha,
E. Nguyen, A. Shepherd



Population Area



MHPA

Otay Lakes

Dudleya variegata

Survey Date: 5/30/03



Source: M. Johnson, J. Atha,
C. Kane, M. Klein, E. Nguyen,
K. Greer, R. Rodriguez, K. Balo