

**San Diego Association of Governments**  
**Managing Rare and Native Plants, Restoring Social Trails, and Engaging the Public**  
**Final Report**  
**Project Period: November 8, 2018 to May 8, 2021**  
**SANDAG Contract Number: 5005506**

## **Executive Summary**

The primary goal of this project is for the management of *Aphanisma blitoides*, rare plant. Currently *A. blitoides* consists of habitat specific occurrences throughout the Point Loma peninsula. Many of these occurrences are on National Park Service (NPS) lands. Threats to this species include invasive plants, illegal trail usage, and erosion. Our objective is to remove invasive plants, restore social trails with complimentary native plants, and to reduce off-trail use with signage, fencing, and education via social media platforms. These objectives will be completed using a workforce of staff, a dedicated volunteer force, and a trained student intern.

Due to limitations with a quarterly payment schedule, the park decided to alter the budget allocations away from labor towards supplies and equipment. We matched park staff time and time from partners including the California Conservation Crew, our sister park, Santa Monica Mountains National Recreation Area, our volunteer program Weed Warriors, and others throughout the project. The entire Coastal Trail (0.5 mi one way) received new signage, new post and rope, and new native plants as part of the restoration program.

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# Project Background

## Project Purpose

The proposed project addresses *Aphanisma blitoides*, a high-priority Management Strategic Plan (MSP) species (SL) and associated habitat.

### **1. The project addresses an urgent need and includes actions that will manage an identified threat.**

Direct competition from two non-native species of *Mesembryanthemum* (*M. nodiflorum* and *M. crystallinum*) is a primary concern for this rare plant. Seedlings of both *Aphanisma* and *Mesembryanthemum* emerge at roughly the same time each season. The seed bank for *Mesembryanthemum* is likely many times greater than that of *Aphanisma* and it grows at a rapid rate thus competing for resources (soil moisture and nutrients). The rapid growth of *Mesembryanthemum* can quickly shade out newly emerging *Aphanisma* as well. Early hand weeding has been used in previous years with much success at reducing weed cover. Herbicide is not recommended at this stage due to the similar emergence timing and difficulty seeing young *Aphanisma* at this stage.

Social trails are another immediate concern. The coastal bluffs at CNM are a favorite spot for visitors to take photos and take in the views of the ocean. This sometimes leads visitors off trail despite rope fences. Direct trampling of newly emerging seedlings can be greatly impacted by off-trail use. Signs informing visitors of sensitive habitat as well as heavy restoration will likely reduce this threat. The signs currently installed are faded and bleached.

Erosion control is also necessary as many of these areas are composed of loosely compacted sandstone and are lacking natural vegetation cover due to off-trail usage. Again, restoration efforts can reduce off-trail use while also minimizing direct impact from rains.

### **2. Success criteria have been identified and will be monitored and reported.**

Our mechanical weeding efforts will lead to the successful reduction of invasive species to <20% cover of *Aphanisma* habitat. We will take initial data of percent cover of target habitats and re-access after our efforts. Before and after photos will also be an effective tool for monitoring success rate.

Additionally, providing ground cover with the use of coastal native plants will reduce erosion during the following rainy season. We will use plants specifically associated with *A. blitoides* habitat (i.e., *Lycium californicum*, *Sueda taxifolia*, *Chorizanthe procumbens*, *Isocoma menziesii*, *Cistanthe maritima*).

### **3. Success of the proposed project is likely with clear, measurable, proven results.**

Populations of *Aphanisma* were monitored in 2017 by NPS staff and Jessie Vinje, a biologist for The Conservation Biology Institute. Population locations and sizes, habitat conditions, and threats were all identified using the Management and Monitoring Strategic Plan's Inspect and Manage (IMG) protocols.

#### 4. Funding after grant.

The continuation of our greenhouse/restoration and invasive species management programs is in our interest for this project as well as many other throughout the park. Current staff is aware of the issues and management needs for *Aphanisma* and are eager to keep up with this project for years to come. Funding for a botanist, greenhouse interns, and weed management is continually sourced and secured via NPS base funds as well as through non-profit partners.

#### 5. Where is the project located ? (*Attach a map*)

Cabrillo National Monument is located at the southern portion of the Point Loma peninsula. It is managed by the National Park Service and is included in the MSP area.

Aphanisma management areas. (~14,3489 sq m)



## Project Goals

1. 4 acres weeded to < 20% invasive coverage
2. All social trails revegetated with native plants grown in local greenhouse.
3. Where applicable: fencing, rope, and signage will be placed to discourage off-trail use.
4. Social media: 3 blog posts discussing management of rare plants and their threats will be posted on the existing Field Notes blog. This has been an ongoing and useful tool for educating the public on natural resources in the park. We will use our popular Instagram account to promote blog posts.

## Work Performed by Task

### Task 1- Signs and fencing

*Budget: \$4,000.00 (from grant agreement)*

*Spent: \$1,176.00*

*Match for Task: \$1,500*

32 "Area Closed for Plant Rehabilitation" signs were ordered to replace the faded, bleached signs in place. The signs were ineffective, and unable to be used by park law enforcement to write citations for visitors who refused to come off trail. The Facilities division (labor contributes to match) has installed the signs in high priority areas (about 15 signs at the time of the final report) and will continue to install them once compliance is completed for the installation of signs in new spots. Materials for post and rope were part of this task. Post and rope along the entire Coastal Trail was replaced by Facilities staff (this match captured under Task 6).

### Task 2-Restoration preparation

*Budget: \$1,750.00 (from grant agreement)*

*Spent: \$1,375.46*

*Match for Task: \$10,880*

The NPS greenhouse worked on outplanting (i.e., preparing native plants for restoration and re-vegetation in the park). This involves collecting seeds from the park to maintain the local genetic diversity and growing them in the correct conditions in the greenhouse and associated garden area. SANDAG intern Rachel Le helped with restoration preparation and the match for this task comes from volunteer time at the volunteer match hourly rate.

### Task 3-Invasive plant removal

*Budget: \$1,750 (from grant)*

*Spent: \$1,559.95*

*Match for Task: \$30,880*

Invasive plant removal is required before restoration and re-vegetation of areas so native and rare plants do not have to compete for resources and space when they are planted in the park. SANDAG Intern Rachel Le helped with invasive plant removal and the match for invasive plant removal comes from volunteers and the California Conservation Corp that helped with the project in fall 2020. Several acres were weeded (exact numbers not generated due to limiting staffing time with GIS).

#### **Task 4-Restoration**

*Budget: \$1,500(from grant)*

*Spent: \$1,245.18*

*Match for Task: \$10,880*

Provide in detail, the work completed for each task during the course of the entire project, any issues encountered during task completion and steps taken to address the issue(s), whether the task was completed according to the original scope, whether the task came in at budget, and any results for the individual task. Include additional work that may be needed in the future to maintain the results/condition achieved if applicable.

Restoration includes planting native plants from the greenhouse, and weekly watering for several months afterwards. San Diego had the driest February in 170 years, so weekly watering had to continue for much longer than normal, followed by watering every other week to taper the plants off. The match for this task includes volunteer time at the volunteer match hourly rate.

#### **Task 5-Volunteer and intern training**

*Budget: \$850 (from grant)*

*Spent: \$357.26*

*Match for Task: \$560*

Partner staff at the park from Great Basin Institute trained SANDAG intern Rachel Le on how to do restoration preparation, invasive plant removal, and restoration, as well as *Aphanisma blitoides* identification (partner staff time included in match). Unfortunately with the dry winter, *A. blitoides* did not grow that much in the normal locations but we provided a weed free space so that next winter they are able to return with less competition from invasive plants.

#### **Task 6-Supplies and equipment**

*Budget: \$15,000 (from grant)*

*Spent: \$15,086.95*

*Match for Task: \$4,000.00*

A budget modification as made to this project due to labor billing constraints on the NPS side. More of the budget was allocated towards supplies and equipment and the match from park staff and volunteers was increased to accomplish the tasks. Some of the equipment purchased also helped reduce the amount of staff time needed to accomplish tasks, making

it more feasible for the Resources Management & Science division and the Facilities division to complete their projects. For example, a motorized wheelbarrow was purchased that helped with trail rehabilitation and restoration efforts. The match for task is NPS staff time spent replacing post and rope along the entire length of the Coastal Trail, and re-vegetation efforts along the Coastal Trail.

### **Task 7-Administrative**

*Budget: \$150 (from grant)*

*Spent: \$140.77*

*Match for Task: \$900*

The administrative match was NPS staff time to write reports, document progress, and track invoicing for the project.

### **Conclusions**

The project was successful given constraints with turnover in NPS staffing, the COVID-19 pandemic, and an unusually dry winter that dramatically reduced growth of *Aphanisma blitoides*. The park was able to improve the Coastal Trail on several levels: reduce invasive plant cover, rehabilitate the trail so that broken and post and rope was replaced to keep visitors on trail, begin recovery of social trails, improve signage to assist with preventing trampling and damage to native vegetation, and train one intern on all aspects of the restoration process. All of these actions together improve the conditions for native and rare plants in the coastal area of the park, which is one of the last larger patches of coastal sage scrub in Southern California. The work of restoring these habitats always requires upkeep with removal of invasive plants and maintaining post and rope and signs so that visitor impact is reduced.

### **Appendices:**

See photos on following pages

Broken and worn post and rope before replacement (Photo Credit: P. Geisler)



Broken and worn post and rope before replacement (Photo Credit: P. Geisler)



Brand new post and rope after repair, keeping more visitors from leaving the trail. (Photo Credit: P. Geisler)



Fresh rope has been replaced along the entire Coastal Trail. (Photo Credit: P. Geisler)



Faded and unreadable Area Closed signs are overlooked by visitors and cannot be used by law enforcement to enforce rules or write tickets. Many signs were even more bleached than the ones pictured. (Photo Credit: L. Pandori)



New Area Closed signs were installed to protect sensitive vegetation in various areas along the Coastal Trail. The signs are also updated to match the Comprehensive Sign Plan (Photo Credit: M. Barker)



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