

Management of *Volutaria tubuliflora* at Anza-Borrego Desert State Park – A community effort



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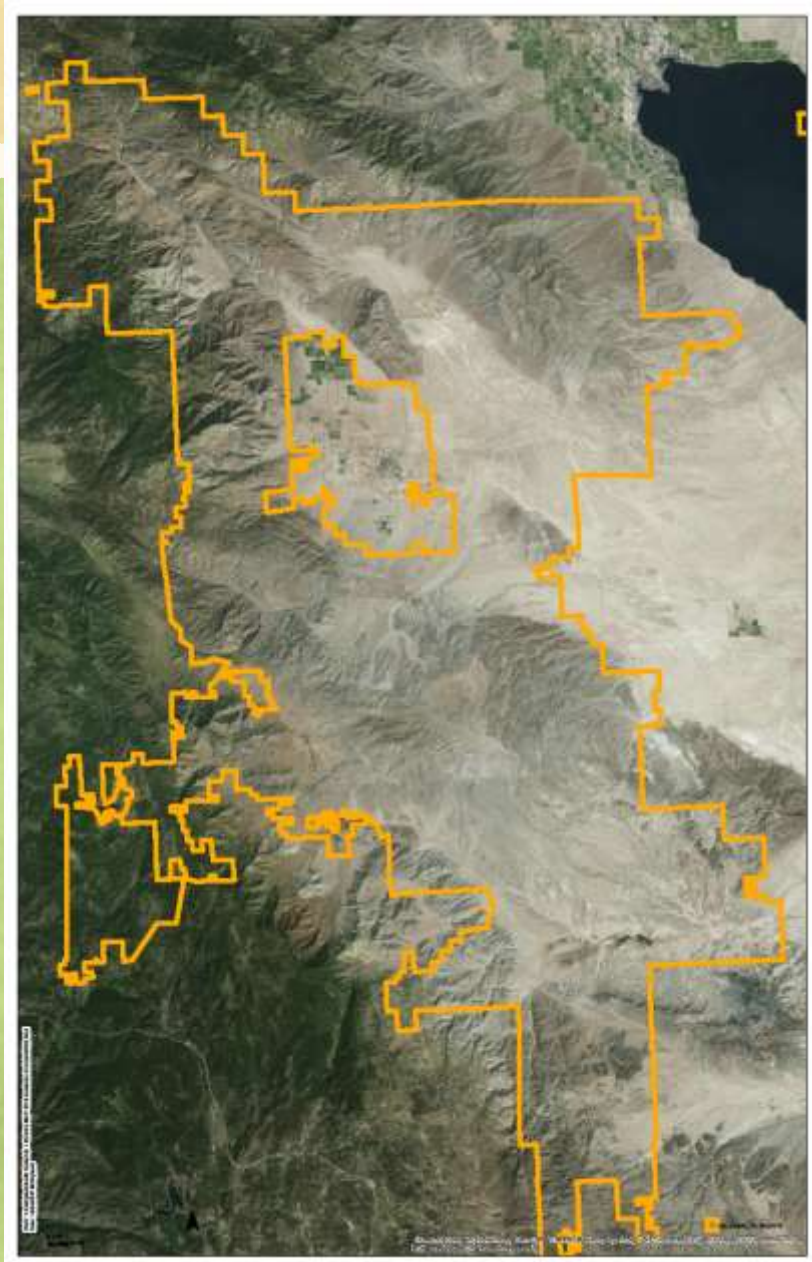
¹California State Parks – Colorado Desert District, Borrego Springs CA

Management of *Volutaria tubuliflora* at Anza-Borrego Desert State Park – A community effort

- Invasive Plant management as a community
- State Parks role as invasive plant managers within the community
- Mapping and Control Efforts in Anza-Borrego Desert State Park
- Where to go from here? Future efforts



Invasive Plant Management as a Community



Invasive Plant Management as a Community

- The Community as a stakeholder



1998



2005

Invasive Plant Management as a Community

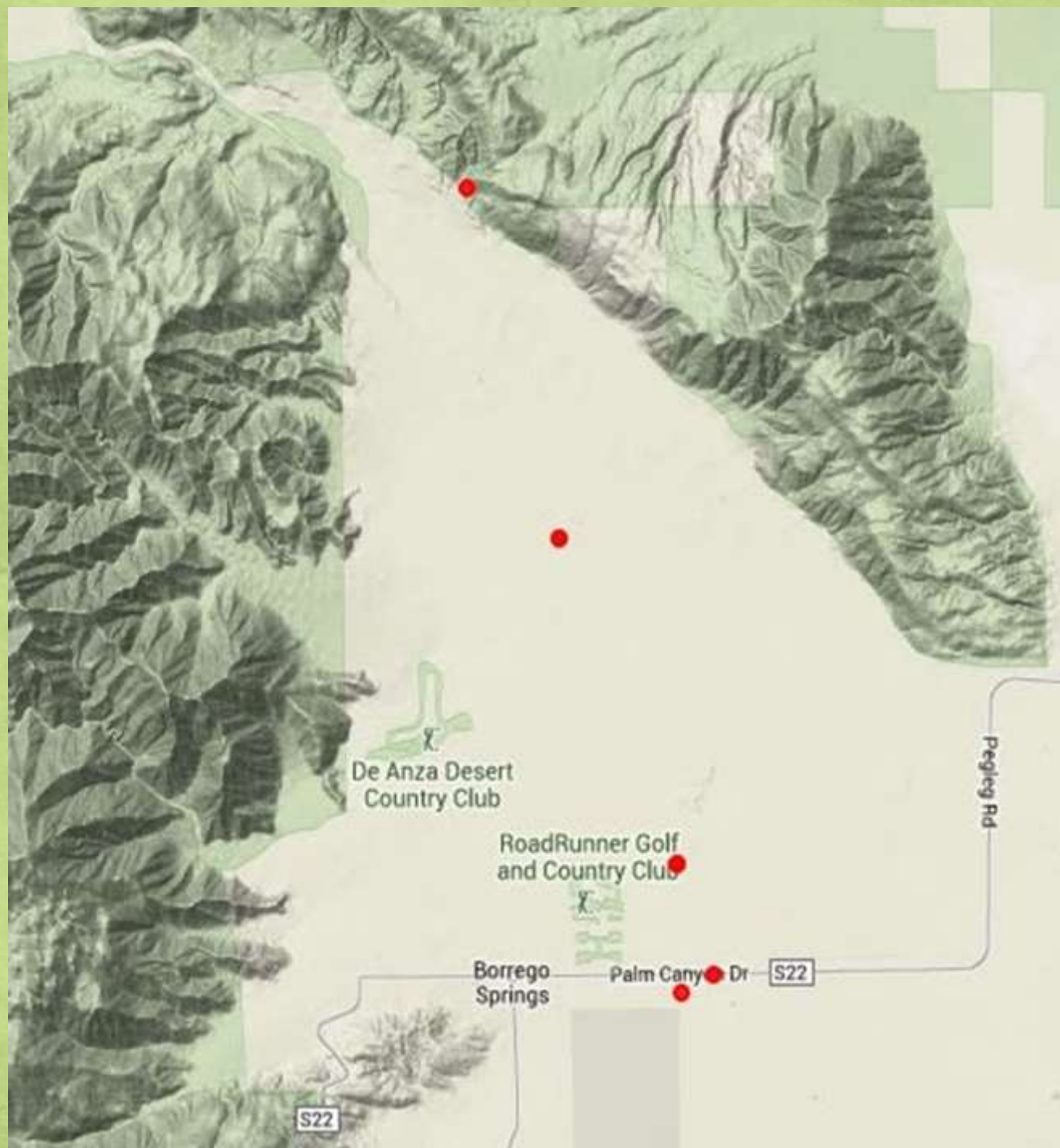


- The Sahara Mustard and Volutaria Eradication Task Force
 - Mission: *To increase public awareness and involvement in controlling Saharan Mustard & Volutaria in the Anza-Borrego area in recognition of its detrimental effects on natural ecosystems and on the economy of Borrego Springs.*
- Comprised of representatives from the local community, Anza-Borrego Desert Natural History Association, Anza-Borrego Foundation, University of California Irvine, University of California Cooperative Extension, California Invasive Plant Council, The Tub Canyon Desert Conservancy, and California State Parks



The Borrego Weed Warriors - March 4, 2017

These team members spent 4-hours surveying for and eradicating Sahara mustard and Volutaria in Borrego Valley





State Parks role as invasive plant managers within the community

- Alignment of the State Parks mission to protect and preserve resources with the interests of the community
- Volunteer Engagement
 - Weekly weeding efforts for volunteers
 - Sierra Club, Alternate Spring Break
 - Use of CalFlora Observer App



State Parks role as invasive plant managers within the community



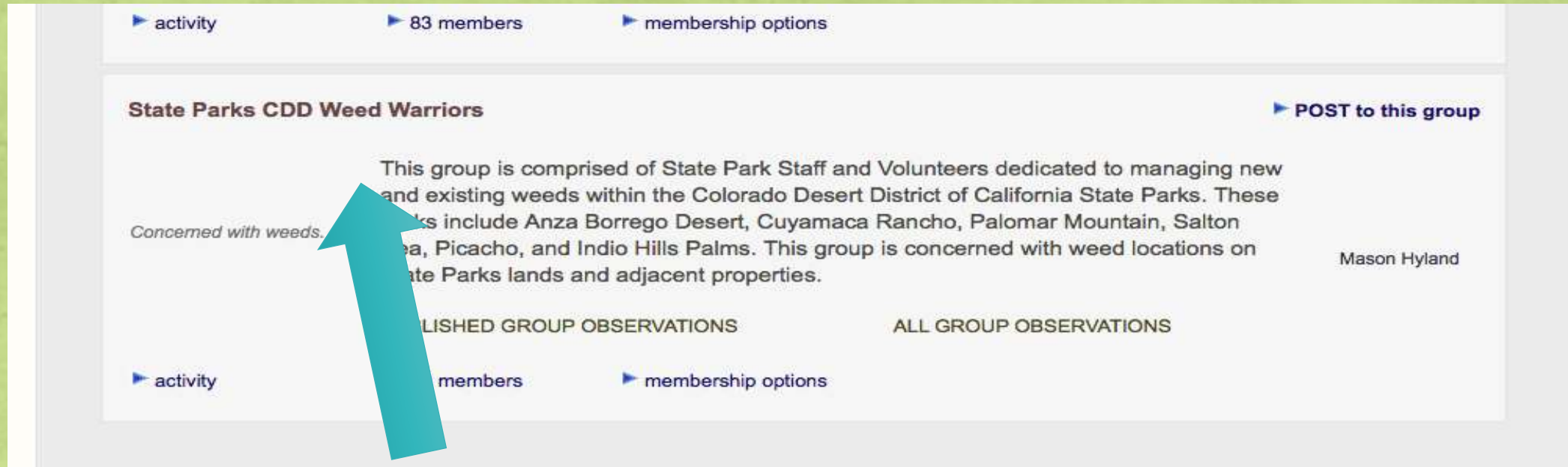
Mapping and Control Efforts in ABDSP in 2017

- Control Efforts
 - All efforts were done by hand pulling and hand tools
 - Bagging when flowers are present
 - Training volunteers
 - Identification resources
 - On-the-job training
 - Taste test

Mapping and Control Efforts in ABDSP in 2017

- Mapping efforts
 - All efforts, including that with volunteers, had a trained staff person present with a GPS device
 - Points for individual or small numbers of plants
 - Polygons for larger populations
 - Lines for tracklogs
 - All information was uploaded to CalFlora for the community to view what was happening in close-to-real time

"State Parks CDD Weed Warriors"



activity 83 members membership options

State Parks CDD Weed Warriors [POST to this group](#)

Concerned with weeds. This group is comprised of State Park Staff and Volunteers dedicated to managing new and existing weeds within the Colorado Desert District of California State Parks. These parks include Anza Borrego Desert, Cuyamaca Rancho, Palomar Mountain, Salton Delta, Picacho, and Indio Hills Palms. This group is concerned with weed locations on State Parks lands and adjacent properties.

Mason Hyland

PUBLISHED GROUP OBSERVATIONS ALL GROUP OBSERVATIONS

activity members membership options

Shape *	Id	GPS_Date	TargetVeg	Acres Covered	Workers						
Polyline ZM	0	1/12/2017	Volutaria & Mustard	56.2	v&m						
Polyline ZM	0	1/13/2017	Volutaria & Mustard	50	v&m						
Polyline ZM	0	1/25/2017	Volutaria & Mustard	43.2	v&m						
Polyline ZM	1	1/26/2017	Volutaria	22.6							
Polyline ZM	0	2/2/2017	Volutaria	7.6	coyote mtn side						
Polyline ZM	0	2/2/2017	Volutaria	23	looks like a targeted pulling						
Polyline ZM	0	2/3/2017	Volutaria	8.7							
Polyline ZM	0	2/3/2017	Volutaria	11.8	alcoholic pass	Resources					
Polyline ZM	0	2/3/2017	Volutaria	11.1							
Polyline ZM	0	2/2/2017	Volutaria	12.1							
Polyline ZM	0	2/6/2017	Volutaria	15.6	coyote mtn side						
Polyline ZM	0	2/6/2017	Volutaria	10.8	little Baja	Resources					
Polyline ZM	0	2/9/2017	Volutaria	22							
Polyline ZM	0	2/9/2017	Volutaria	15	coyote mtn side						
Polyline ZM	0	2/16/2017	Volutaria & Mustard	8.5	larry Pam & Jennifer						
Polyline ZM	0	2/23/2017	Clark	39	crew	Resources					
Polyline ZM	0	2/23/2017	Volutaria		weeding area by track	Sierra Club 16 total (volunteers and CDD staff)					
Polyline ZM	0	2/24/2017	Volutaria	0.8	little Baja	Sierra Club 16 total					
Polyline ZM	0	2/24/2017	Volutaria	24.5	Henderson Canyon Sout	Sierra Club 16 total					
Polyline ZM	0	3/2/2017	Volutaria	13							
Polyline ZM	0	3/6/2017	Volutaria	32.5	coyote mtn side	U of V 12 total (students and CDD staff)					
Polyline ZM	0	3/7/2017	Volutaria	114	coyote mtn side	U of V 12 total					
Polyline ZM	0	3/9/2017	Volutaria	60	coyote mtn side	U of V 12 total					
Polyline ZM	0	3/10/2017	Volutaria	78	coyote mtn side	U of V 12 total					
		3/14/2017	Volutaria	35	coyote mtn side	Resources crew	found3 plants-single & pair, marked in gis volutaria pts layer.				
		3/16/2017	Volutaria & Mustard	7.5							
		3/23/2017	Volutaria	18	Vern-Whitaker horse ca	Resources crew, Pam B., Mike S. and public volunteer					
				715							

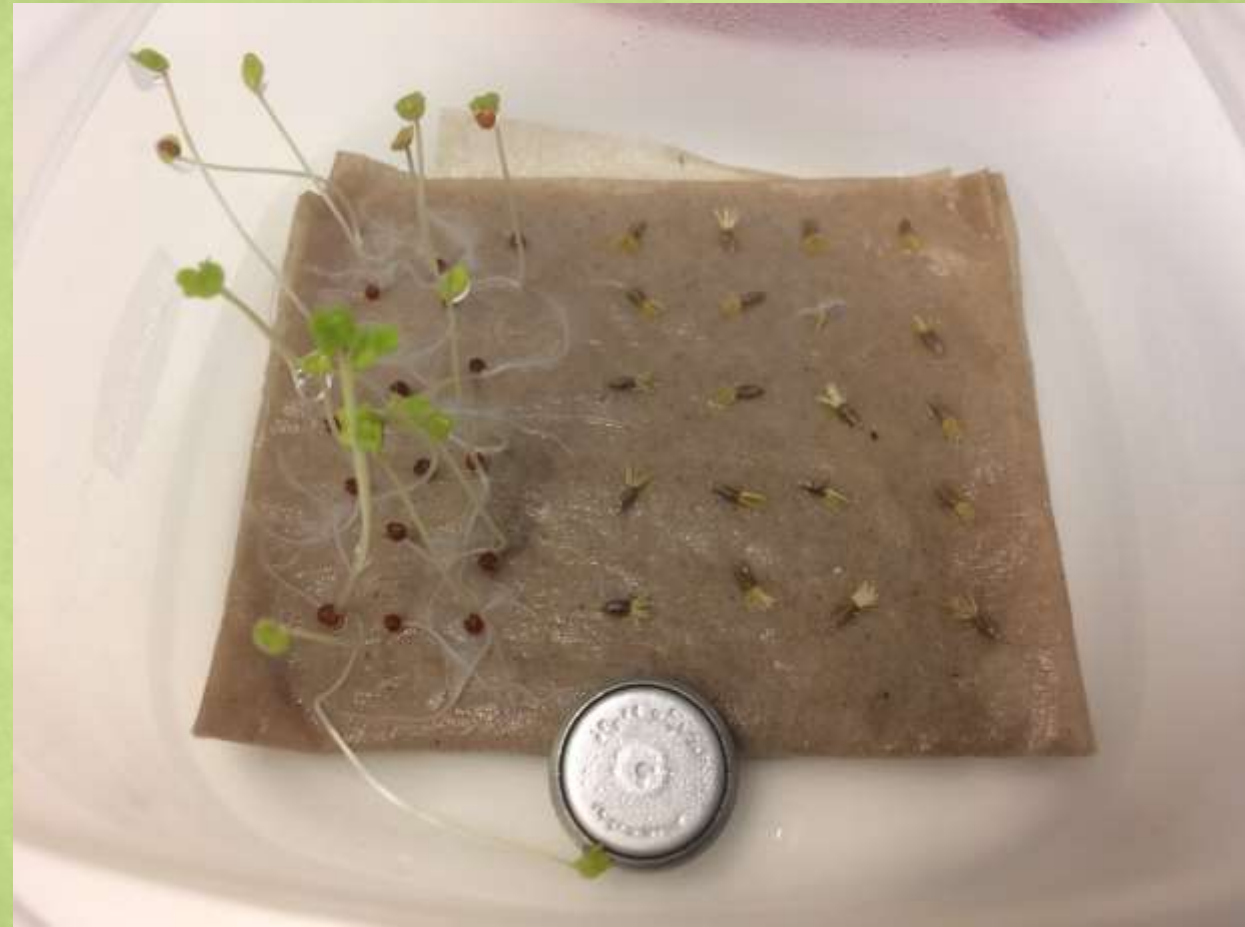


Where do we go from here?

Some lessons learned

To compost, or not to compost?

- The issue with bagging
- Seed mortality investigation



Do you see them all?

- Detection issues
 - Multiple cohorts each season – plants of all sizes and stages
 - Flowering at 3 feet, or three inches
 - Volutaria, or Sisymbrium?
- High resolution aerial imagery
 - Possibility for UA use for obtaining imagery capable of use in detection modeling



Two Weeds

Voluntaria

London rocket



Photo by Pat Matthews

Early Detection Rapid Response

- Fighting on the front lines of the populations
- Volunteer and community involvement
 - Training volunteers on observational skills, and attention to detail
 - Photos to accompany point data and tracklog data will help staff with identification

Weed Alert! Spotted knapweed



www.cal-ipc.org

Spotted knapweed

(*Centaurea stoebe* ssp. *micranthos*)

Mature Size Knee



Description

- 2-3 ft. bushy perennial plant with highly branched flowering stems and pink to purple flowers
- Flowers are about ¾ in. in diameter and grow singly at the end of branches
- Flowers resemble tiny pineapples topped with a showy ring of flower petals
- Flower petals are 1½-3 in. with each petal branching several times
- Tips of small leaves at flower base are black, giving flowers a spotted appearance
- Grows as a low rosette of deeply lobed 8 in. leaves in the first year
- Stem leaves alternate with grayish hairs
- Reproduces by seed and vegetatively by resprouting when damaged
- Spread by roadsides, equipment, wind, hay, forage, seed, wildlife, waterfowl, livestock
- Native to Europe



Bloom Period Jun - Oct

Habitat Disturbed sites,
grassland, agricultural sites



2-Minute Removal Dig

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These cards were adapted from a design by National Park Service.

Eradication, or control?

- This is a question that can't be answered quite yet. For now, the goal is eradication
- Efforts for this coming year
 - Roughly \$20k budgeted for Volutaria management efforts
 - staff time searching and pulling
 - seed mortality study
 - Aerial imagery and modeling
 - Roughly \$12k budgeted for EDRR in ABDSP

Questions?

