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

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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

Photo Credits: Mark Dimmitt
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
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”

State Parks CDD Weed Warriors

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 Sea, Picacho, and Indio Hills Palms. This group is concerned with weed locations on State Parks lands and adjacent properties.

Mason Hyland

Concerned with weeds

Published Group Observations

All Group Observations
Mapping and Control Efforts in ABDSP in 2017
<table>
<thead>
<tr>
<th>Shape *</th>
<th>Id</th>
<th>GPS_Date</th>
<th>TargetVeg</th>
<th>Acres Covered</th>
<th>Workers</th>
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<tbody>
<tr>
<td>Polyline ZM 0</td>
<td>1/12/2017</td>
<td>Volutaria &amp; Mustard</td>
<td>56.2 v&amp;m</td>
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<td>Polyline ZM 0</td>
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<td>Polyline ZM 0</td>
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<td>23 looks like a targeted pulling</td>
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<td>11.8 alcoholic pass</td>
<td>Resources</td>
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<td>11.1</td>
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<td>Polyline ZM 0</td>
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<td>Polyline ZM 0</td>
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<td>Volutaria &amp; Mustard</td>
<td>8.5 Larry Pam &amp; Jennifer</td>
<td>Resources</td>
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<td>Polyline ZM 0</td>
<td>2/23/2017</td>
<td>Volutaria</td>
<td>weeding area by track</td>
<td>Sierra Club 16 total</td>
<td>(volunteers and CDD staff)</td>
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<td>Polyline ZM 0</td>
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<td>0.8 little Baja</td>
<td>Sierra Club 16 total</td>
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<tr>
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<td>24.5 Henderson Canyon Sout</td>
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<td>Polyline ZM 0</td>
<td>3/6/2017</td>
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<td>32.5 coyote mtn side</td>
<td>U of V 12 total (students and CDD staff)</td>
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<td>Volutaria</td>
<td>35 coyote mtn side</td>
<td>Resources crew</td>
<td>found 3 plants - single &amp; pair, marked in gis v. volutaria pts layer.</td>
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<td>Volutaria &amp; Mustard</td>
<td>7.5</td>
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<td>Vern-Whitaker horse ca Resources crew, Pam B., Mike S. and public volunteer</td>
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<tr>
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<td>3/23/2017</td>
<td>Volutaria</td>
<td>18</td>
<td></td>
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</tbody>
</table>
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

Volutaria, 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
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?