Why Walk When You Can Fly: Systematic Aerial Weed Survey of Santa Cruz Island, California

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Survey Objectives

- Objective 1- Survey the entire island
- Objective 2- Map incipient populations / individual plants
- Objective 3- Map 55 species
- Objective 4- Survey duration <6 months
Aerial and Ground Mapping Tracks

“its [helicopter] just another tool, like a truck…” Kelly Walker

5% Ground / 95% Aerial

96 mi²
62,000 acres
Data Collection

Trimble Geo XT GPS

Point data collected
- Mapper and date
- Species
- Area
- Cover
- Age class
- Primary habitat invaded
- Secondary habitat invaded
- Number of plants
- Relation to populations
- General comments
Aerial Survey

- Census (not a sample)
- Detect multiple species
- Detect species of all sizes
- Accurate
- Fast
- Weed dispersal free
- No impact to habitat

Fraser Point

Santa Cruz Island live-forever (*Dudleya nesiotica*)
Perspective

30 feet

5 feet
Salt cedar- 10 feet tall
Pampas grass- 4 feet tall
Mullein - 3 inches tall
Population Locations
Herbaceous Species
Grass Species

Grasses
Spp_Common
- Arundo
- Fescue
- Harding grass
- Kikuyu grass
- Pampes grass
- Rice grass
- Yield grass

Lines_Grasses
Spp_Common
- Harding grass
- Rice grass
Shrub Species
Mapping Stats

- 96 square miles surveyed
- 5 mappers
- 55 species mapped
- 5,944 populations recorded
- 41 days
- 2,081 miles flown
- 579 miles walked
- ~20 seconds to map each population
- 1 new invasive plant species recorded for the Island
Take Home Message

- Helicopter aerial survey is ideal for mapping multiple species over large landscapes
- Quick
- Accurate
- See more
- No weed dispersal
- No impact to vegetation
- Collect multiple attributes
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