Trial and Tractor: Large-scale Habitat Transition Zone Revegetation in the Ravenswood Complex

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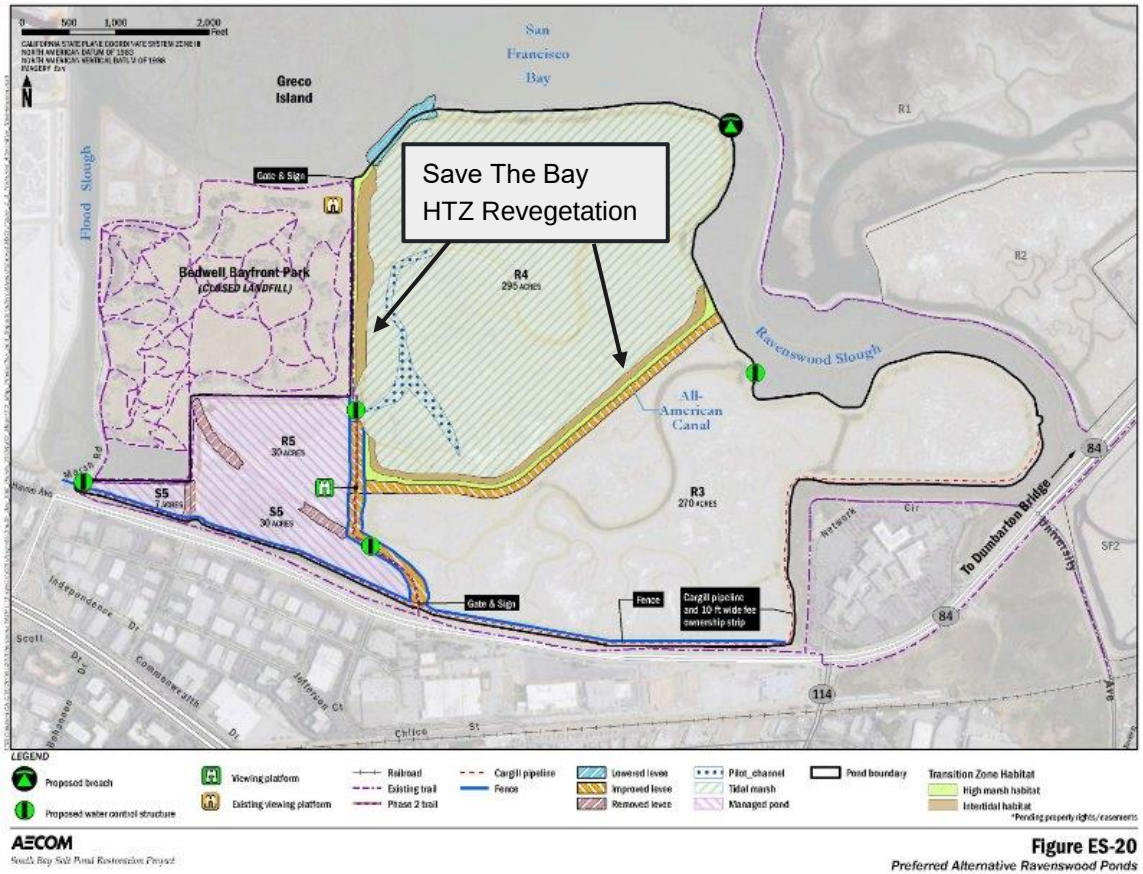
Evolution of our restoration projects

- Community-based restoration
- Oro Loma Horizontal Levee Demonstration Project in 2016
  - Onsite division bed nursery
  - 70,000 plants in an abbreviated timeline
  - Locally collected wetland and transition-zone species
  - Rhizomatous perennial species
  - Seed mix cover crop

Ravenswood



- Two habitat transition zone (HTZ) sites
  - Bedwell Bayfront Levee - 9 acres
  - All American Canal Levee - 16 acres
- Constructed on-site nursery
- Project partners include: USFWS, Ducks Unlimited, State Coastal Conservancy, West Bay Sanitary District, South Bay Salt Pond Project

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Ravenswood onsite nursery

- Constructed in 2018
- 84 division beds
- Rhizomatous perennial species
- Adjacent to the project site
- Locally collected seed and vegetative material
- Minimal maintenance

Species

Clonal meadow species

Diversity patch species

Refuge patch species

Annual cover crop species

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Planting process

- **October - November**
  - Site preparation
  - Prepare sod planting material
- **November**
  - Translocate to slope
  - Disc in using farming equipment
  - Broadcast annual seed mix
- **November- January**
  - Diversity patch planting
- **January**
  - Refuge species planting/infill planting
- **February-April**
  - Supplemental irrigation and targeted weeding

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Site and sod material preparation

Mechanized, clonal meadow species planting

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Annual seed mix

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Diversity patch planting

- Species grown in division beds
  - Less abundant and stress tolerant to mechanized planting
  - Provide vital pollinator habitat and biodiversity
- Bedwell Bayfront HTZ
  - 3,860 sod pieces
  - Equivalent to 15,440 container-grown nursery plants

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Refuge patch planting

- Provide dense, shrubby high tide refugia adjacent to the tidal marsh
- Mostly container plants from our traditional nurseries
- Volunteer friendly planting
- Bedwell Bayfront HTZ
    - 8,700 individual plants in the first two planting seasons

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Maintenance and volunteer engagement

- Targeted weeding efforts
- San Jose Conservation Corps
- Opportunity to get people on the shoreline and educate them about the larger SBSPRP
- Over the life of the project:
  - 1,200 youth and adult volunteers
  - 41,800 pounds of invasive species

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Monitoring - clonal meadow species

- Bedwell Bayfront HTZ
- Clonal meadow species outplanting using the discing method (average % across slope)
    - Ragweed (*Ambrosia psilostachya*) - 114%
    - Saltgrass (*Distichlis spicata)* - 37%
    - Creeping wildrye (*Elymus triticoides*) - 123%
    - Alkali heath (*Frankenia salina*) - 75%

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Monitoring - annual sampling method

- Bedwell Bayfront HTZ
- August and September
- Between 2022 and 2024 and across intertidal, low, mid, and high marsh strata:
    - Native species cover average increased from 6.7% to 7.8%
    - Non-native species cover average decreased from 28% to 21.5%
    - Abiotic cover increased from 65.8% to 72.3%

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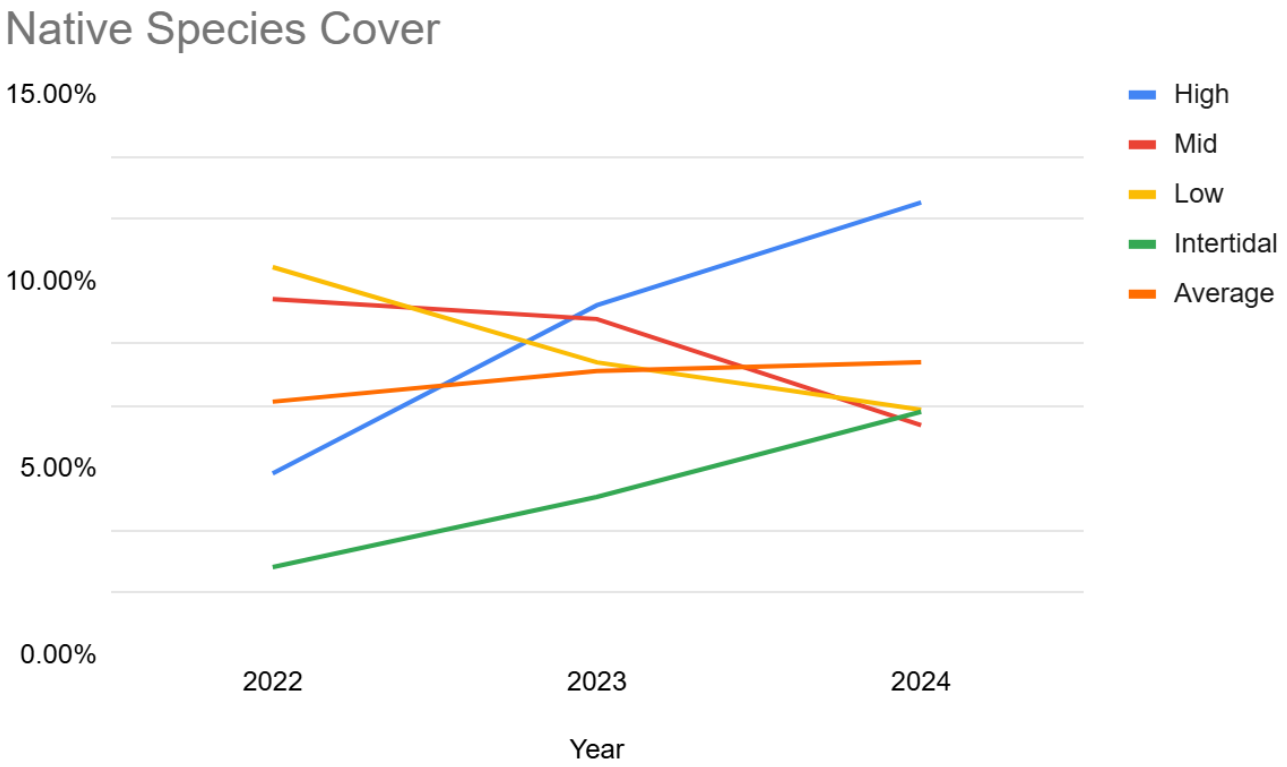
Monitoring - annual sampling method



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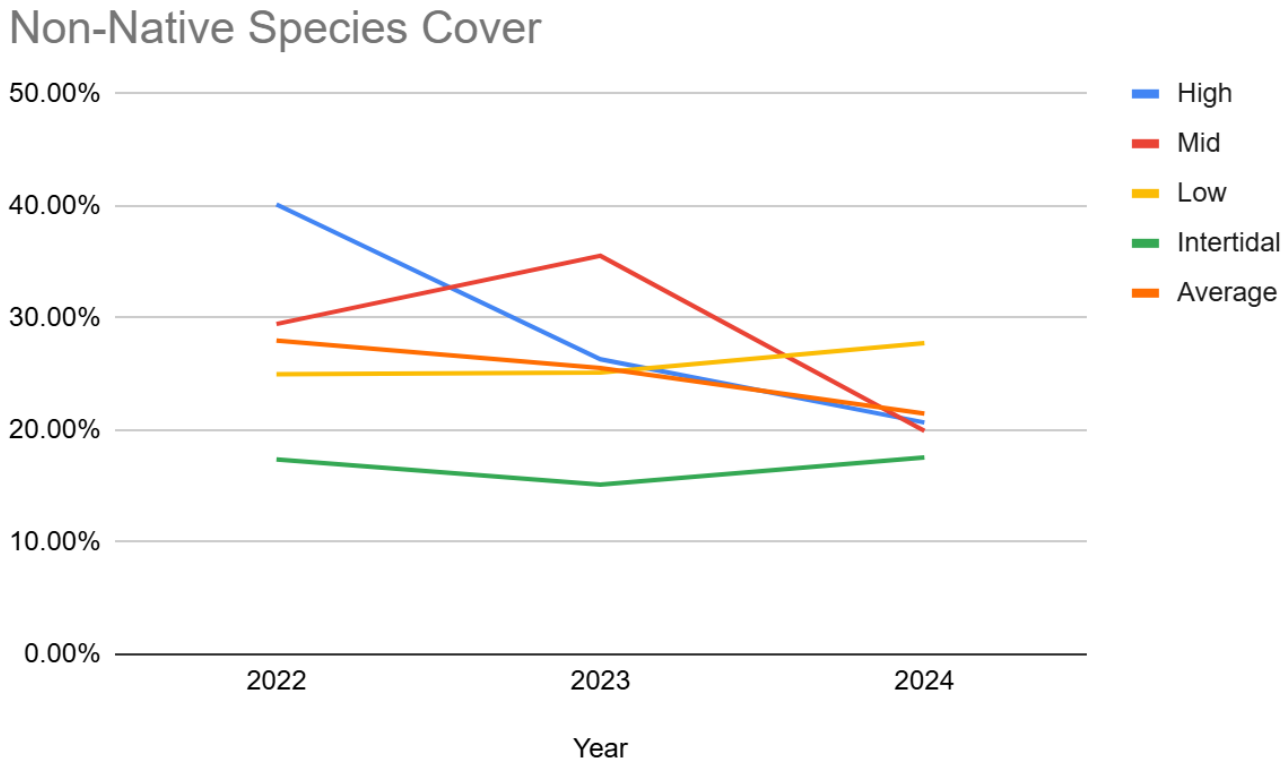

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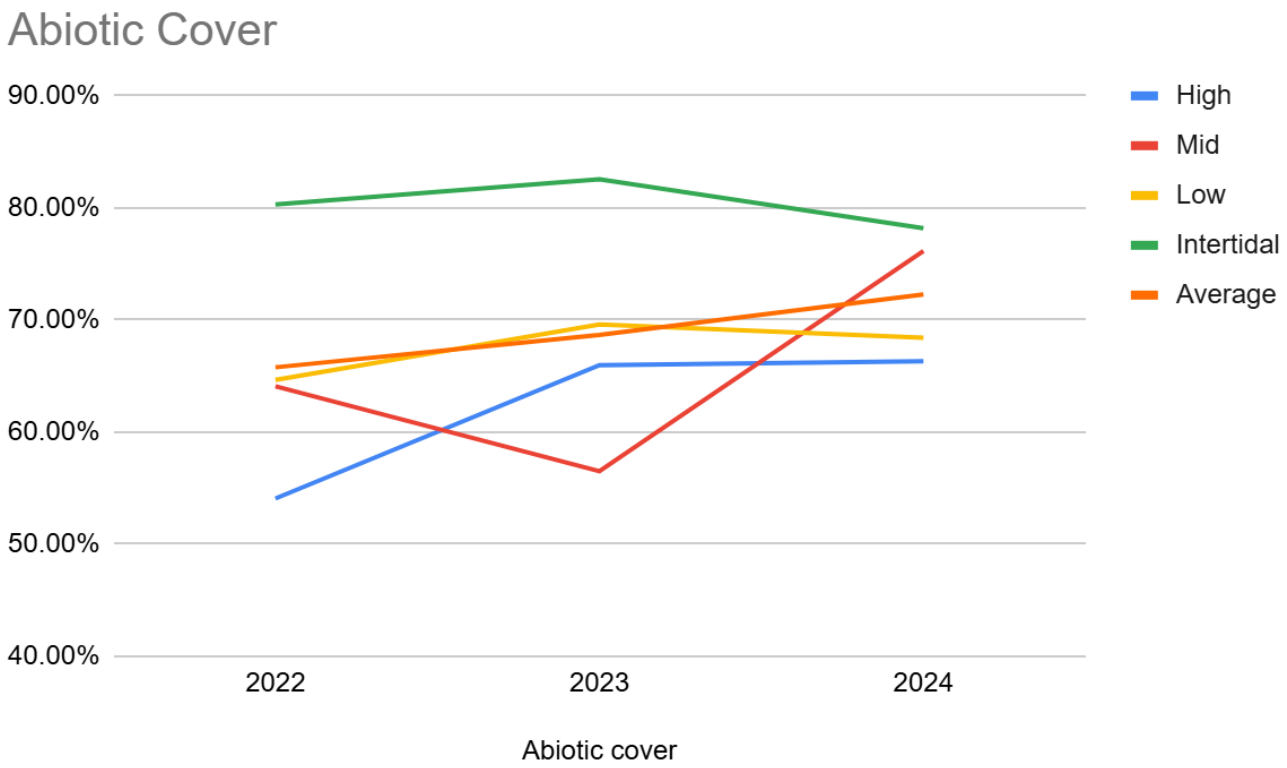
Monitoring - annual sampling method



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Lessons learned

- Onsite nursery construction
- Native plant species selection and propagation
- Mechanized methods
- Breach
- Volunteer engagement setbacks and challenges
    - Covid, access, air quality, Western snowy plover

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Partners

East Bay
Regional Park District

Coastal
Conservancy

CITY OF
PALO
ALTO

DUCKS
UNLIMITED

SAN FRANCISCO BAY
BIRD OBSERVATORY

SAN JOSE
CONSERVATION
CORPS+CHARTER
SCHOOL

South Bay Salt Pond
Restoration Project

CITY OF
MENLO PARK

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Thank you!
savesfbay.org/volunteer
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