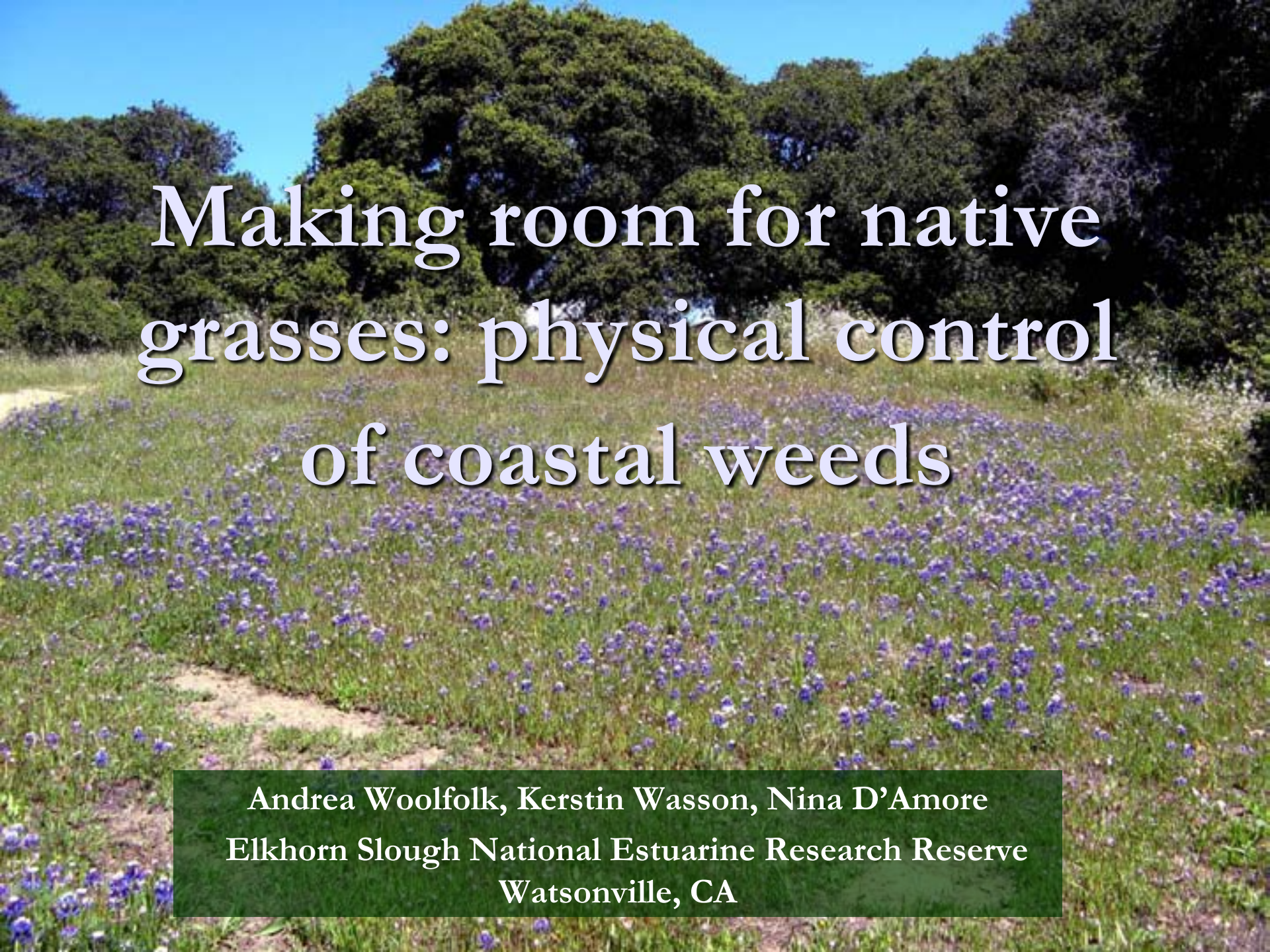


Making room for native grasses: physical control of coastal weeds

Andrea Woolfolk, Kerstin Wasson, Nina D'Amore

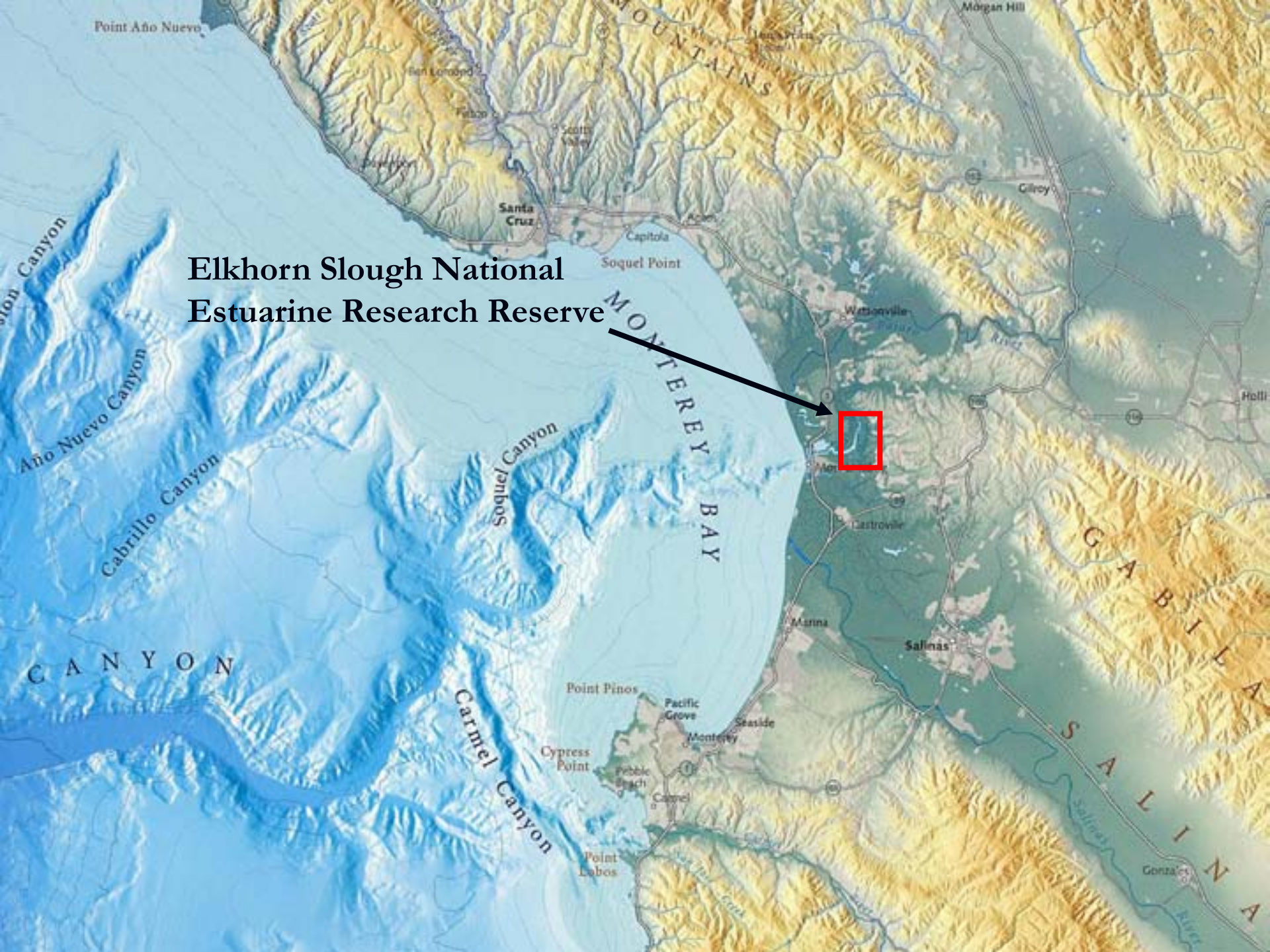
Elkhorn Slough National Estuarine Research Reserve

Watsonville, CA

Two Studies: Physical Control of. . .

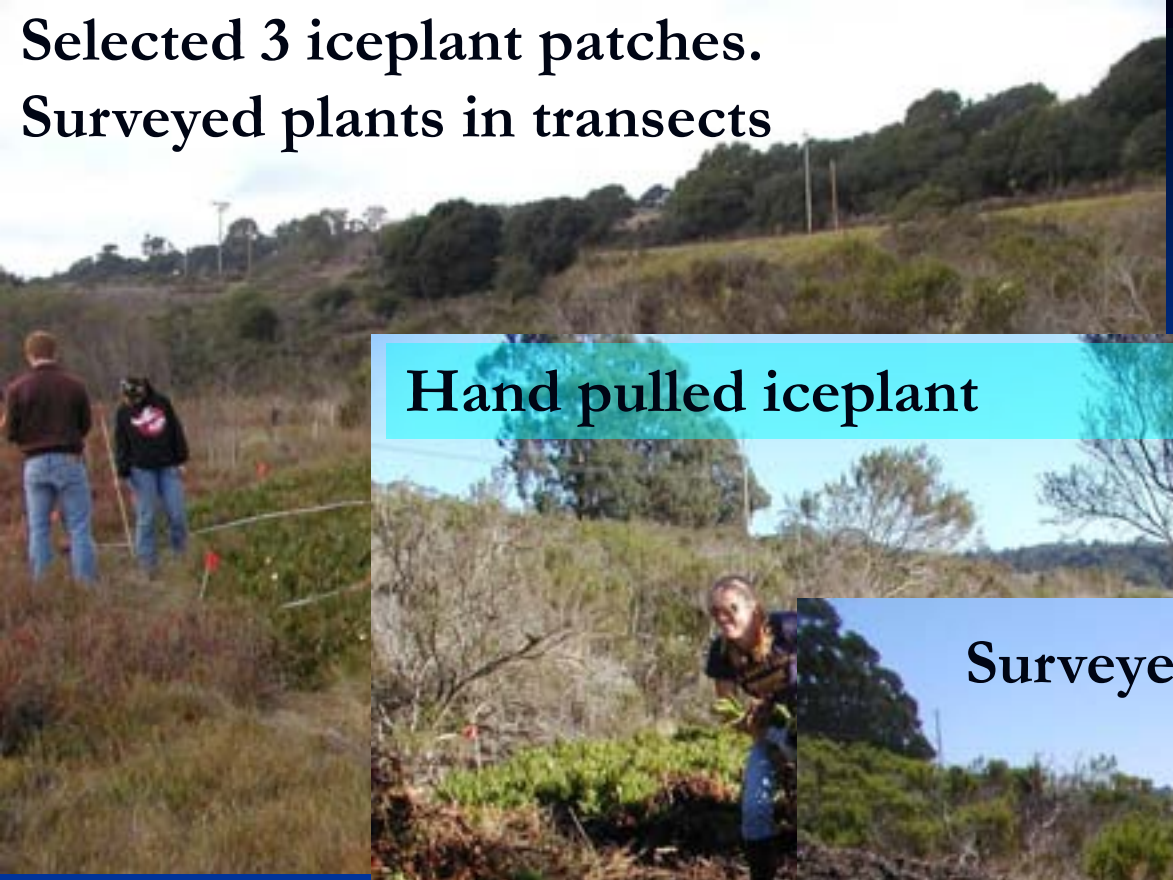
- Iceplant (pulling)

- Mixed grassland weeds (mowing)

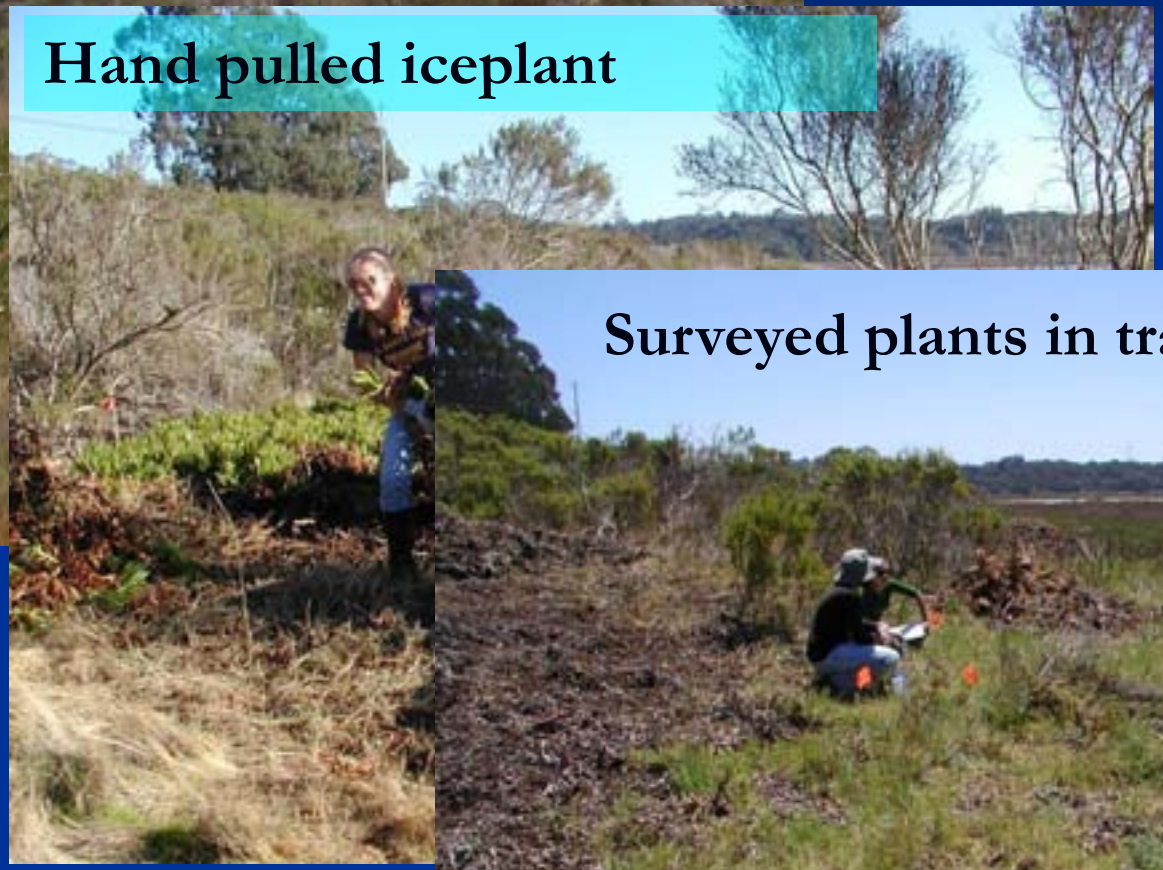

Elkhorn Slough National
Estuarine Research Reserve
Point Año Nuevo
Santa Cruz
Capitola
Soquel Point
Watsonville
Gilroy
Morgan Hill
Castroville
Marina
Salinas
Point Pinos
Pacific Grove
Seaside
Monterey
Cypress Point
Pebble Beach
Carmel
Point Lobos
Año Nuevo Canyon
Cabrillo Canyon
Soquel Canyon
Carmel Canyon
MONTEREY BAY
CANYON
GABILAN
SALINA

Iceplant Removal: Methods

Selected 3 iceplant patches.
Surveyed plants in transects

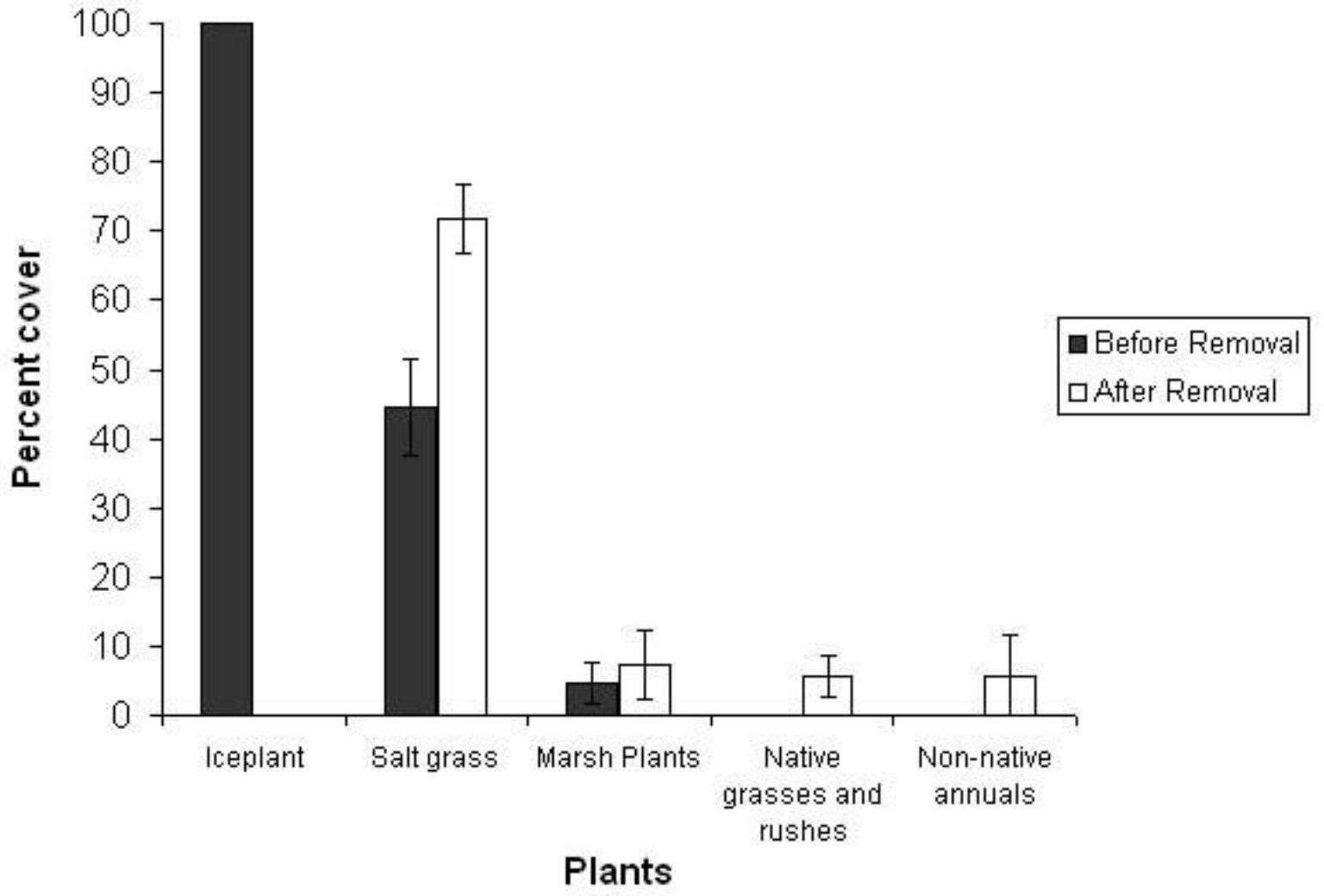


Hand pulled iceplant



Surveyed plants in transects again

Results: Iceplant



Mean (+/- SE, n=3) cover of plants in patches before iceplant removal and after.


Plot 1 Before
– Late 2006


Plot 1 - Day of pulling
– Late 2007


Plot 1 After –
Summer 2008

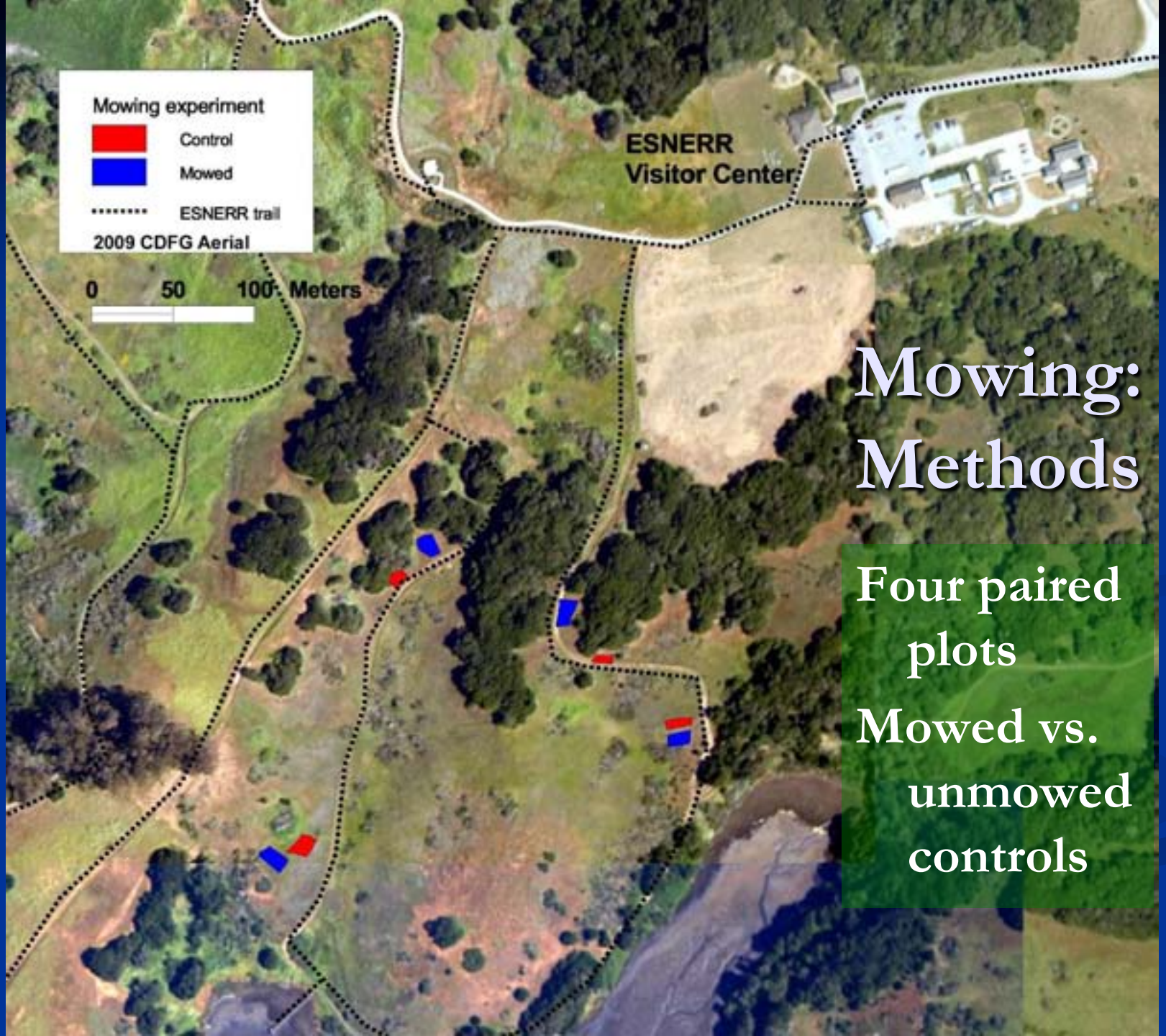
Plot 2 Before


Plot 2 After


Reference site for comparison – note wide, grassy ecotone between salt marsh and scrub.

Iceplant Removal: Discussion

- Hand pulling iceplant resulted in rapid recolonization by native saltgrass
- But presence of non-native annuals along upland edge may present maintenance issues.



Mowing: Methods

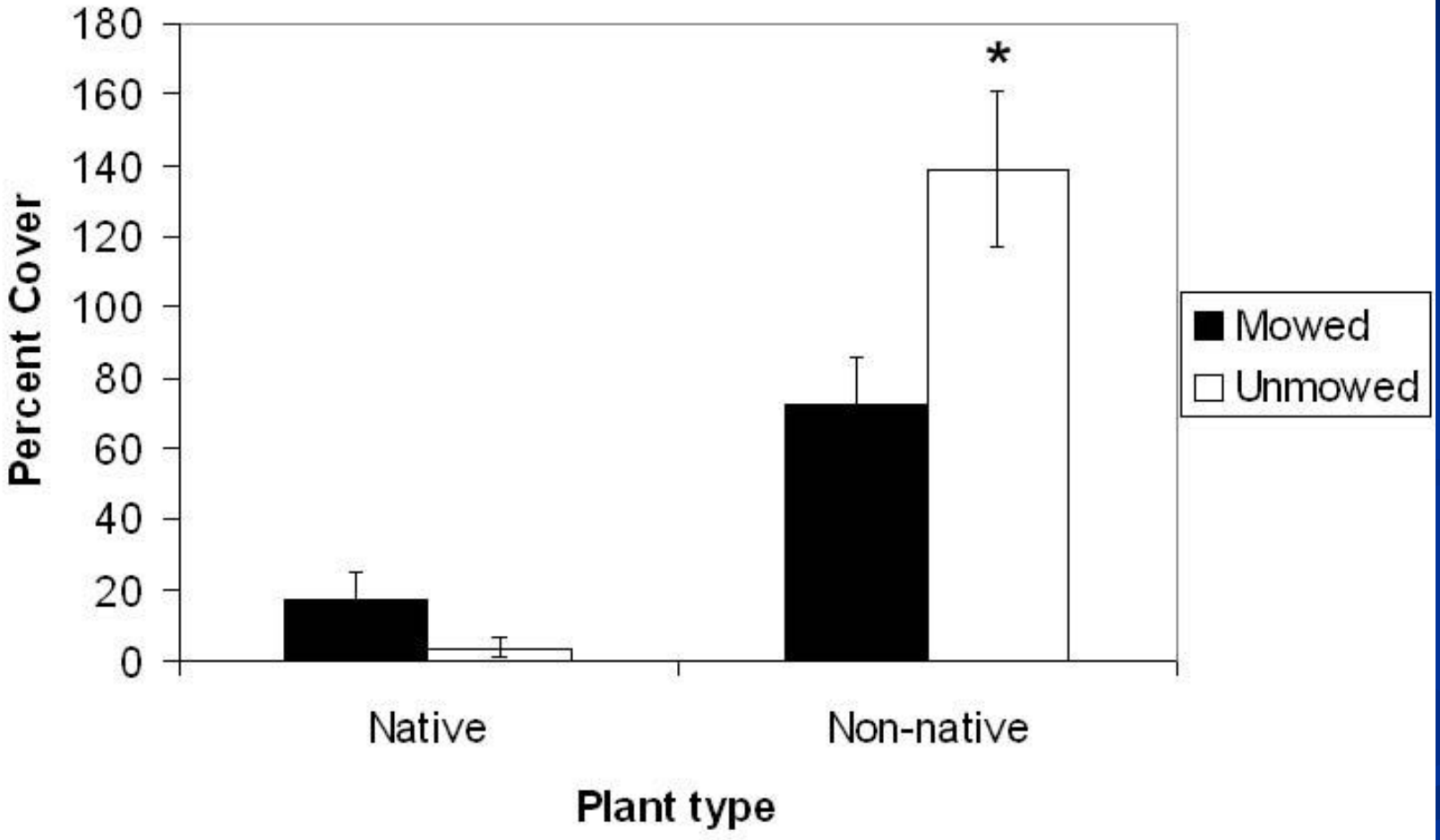
Four paired plots

Mowed vs. unmowed controls

Mowing: Methods

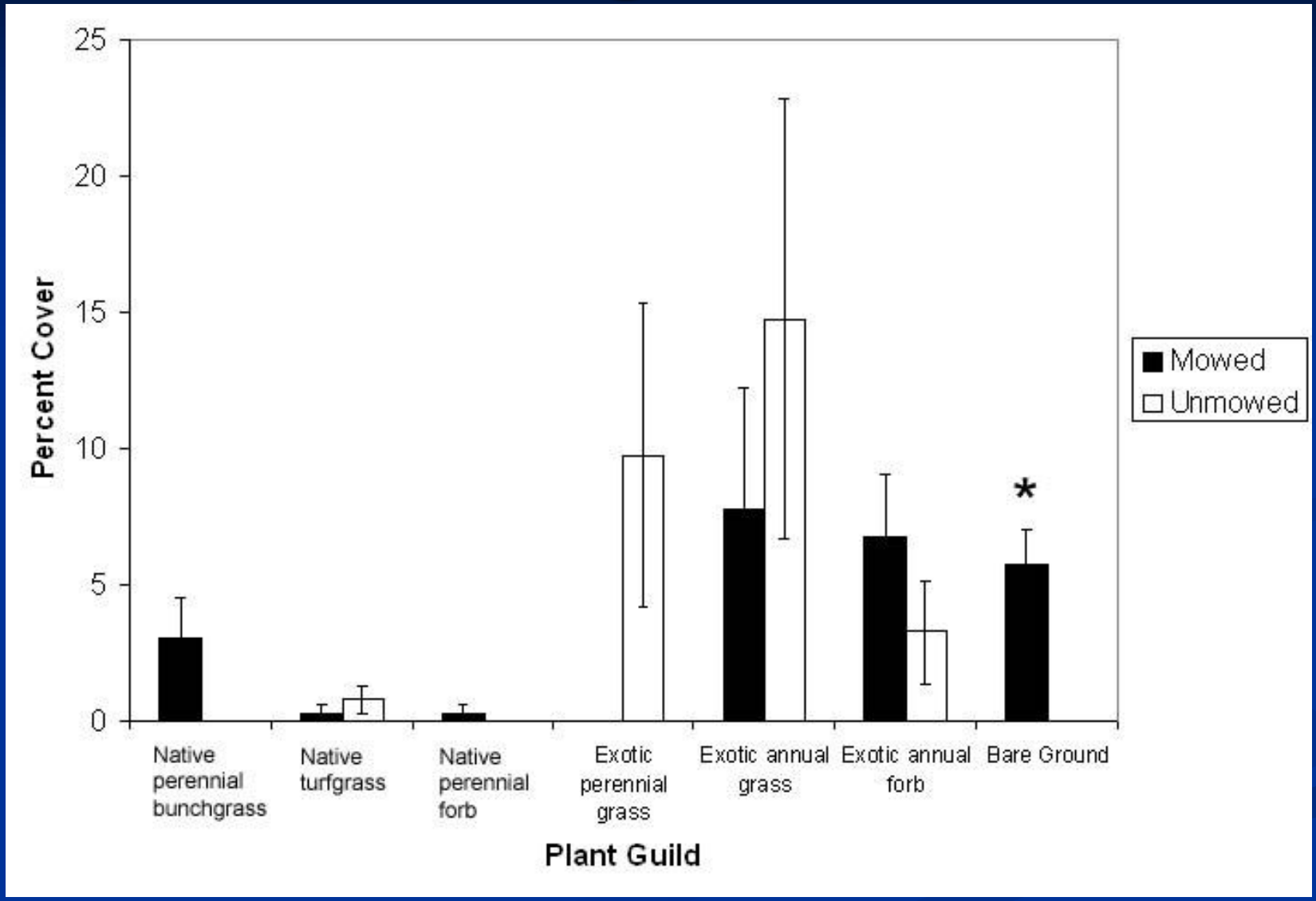
- Annual winter mowing, 2005 – 2009
- Surveyed transects in June 2009

Mowing: Results



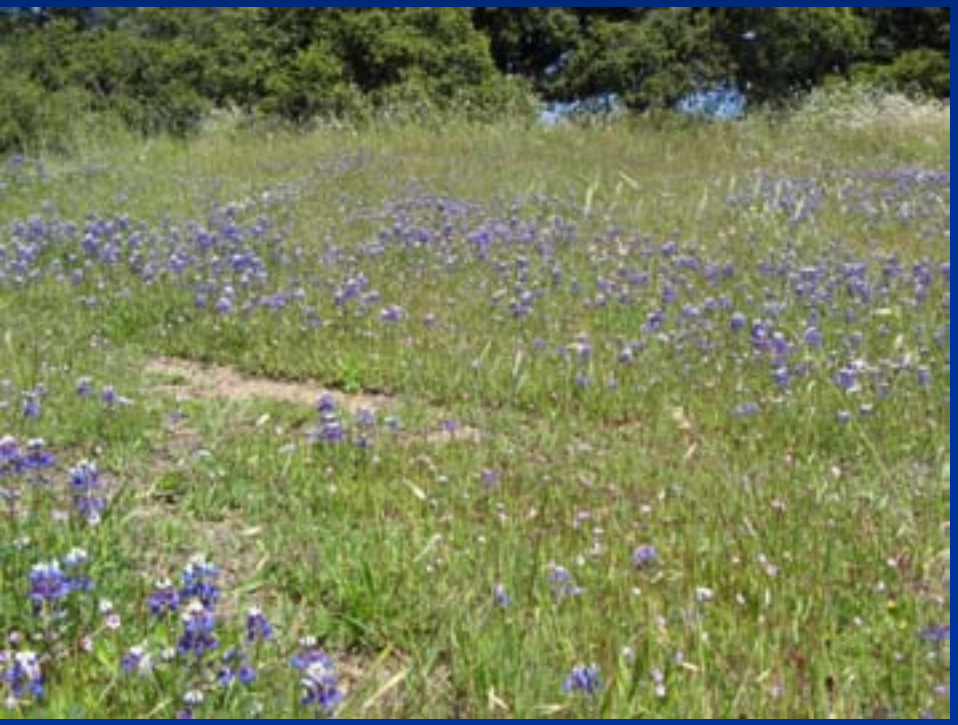
Mean (+/- SE, n=4) percent cover of native and non-native plant species in mowed and unmowed plots, June 2009. * p <0.05. Assessment after five years of mowing.

Mowing: Results



Mean (+/- SE, n=4) percent cover of plant groups in mowed and unmowed plots, June 2009. * p <0.01. Assessment after five years of mowing.

Comparisons: April 2009



Mowed

Unmowed

Comparisons: April 2009

Mowed

Unmowed

Mowing: Discussion

- Mowing decreased cover of non-native plants, opened up bare space, and appeared to make room for purple needlegrass, which was absent in unmowed transects.
- Results varied by site, and did not appear to help creeping wildrye, a native rhizomatous grass.
- Cover of native species was not significant between treatments, but cover in mowed areas (> 17%) begins to approach ESNERR's best remnant coastal prairie patches, where natives make up on average 35% of the total plant cover: better than unmowed controls (<4% native cover).

Conclusion

This study suggests that, in some situations, short-term native grass restoration can be achieved without the planting of native species.

The iceplant removal/native grass restoration may be sustainable without much more effort, especially along lower elevation edge.

Mowing may need to be done in perpetuity to provide enough sunlight for native bunchgrasses, and may not work everywhere


MASON
DIVING