Perennial Pepperweed Control Experiment at the Cosumnes River Preserve

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Problem:
How do we control perennial pepperweed in seasonal freshwater floodplain habitats?

Hypotheses:
1) Environmental characteristics will influence efficacy of control techniques.
2) Type of herbicide and method of application will affect degree of weed control.
3) Tarping (with or without diskig) will reduce weeds in areas where herbicides may not be used.

Herbicides
- Telar (Chlorsulfuron)
- Aquamaster (Glyphosate)
- Garlon (Triclopyr)

Methods
- Broadcast
- Cut Stem

Concentrations
- Low (label)
- High (label x 2)

Tarp Treatments
- Mow + Tarp
- Mow + Disk + Tarp

Measurements:
- Stem count and % cover
- Soil physical & chemical parameters
- Herbicide soil residue levels
- Vegetation monitoring pre- and post-treatment
- Seedbank analysis

The results of these 3-year experiments will be used to develop site-specific adaptive management guidelines for control of perennial pepperweed at the Cosumnes River Preserve. These guidelines and the research results on which they are based will be shared with the entire conservation community so as to better inform weed control efforts on similar lands throughout the CALFED Bay-Delta area and beyond.

Scientifically rigorous experimental design is used at this step in the Adaptive Weed Management cycle.

Using GPS to locate plots. Plot locations were determined using stratified random sampling to capture high and low density populations.

Fabulous Field Assistants
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