

California Department of Boating and Waterways



Aquatic Weed Unit

A little about Water hyacinth....

- First recorded discovery in California was in Yolo County in 1904.
- Water hyacinth is native to Brazil and an invasive species causing problems worldwide.
- Conditions in the Delta favor one of the fastest reproducing plants in the world.

A little about Brazilian waterweed (*Egeria densa*).....

- Native to Brazil.
- It is a popular aquarium plant, which may be how it entered the Delta.
- Can spread at rate of up to 100 acres in a year.

Impacts of Aquatic Weeds

- Crowds out native plants
- Impedes water flows
- Increases sediment deposition
- Obstructs boat passage
- Clogs water intakes for agriculture
- Habitat alteration for native animal species
- Negative impacts to water quality

The Delta

- DBW's Control Program consists of eleven counties
 - Alameda, Contra Costa, Fresno, Madera, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Tuolumne and Yolo
 - 248 sites in an area as far north as Redding and down south into central California.
 - 6 crews @ 2 applicators per vessel, and 2 crews contracted in Merced and Fresno

Legislative Authority

- Weed Control
 - SB 1344 (1982) and AB 2193 (1997) amended the California Harbors and Navigation Code to designate DBW as lead agency for the control of Water Hyacinth and *Egeria densa* in the waters of the Sacramento/San Joaquin Delta, its tributaries, and Suisun Marsh.

Regulatory Permits

- Both programs operate under the auspices of several federal and state agencies
 - Biological Opinions
 - United States Fish and Wildlife Service (USFWS)
 - National Marine Fisheries Service (NMFS)
 - California Statewide General NPDES Permit
 - Issued by the State Water Resources Control Board
 - Administered by the Central Valley Regional Water Quality Control Board (CVRWQCB)

Treating Water Hyacinth and Egeria densa



Some misconceptions.....

- DBW operates a control program, not an eradication program.
- Current limitations and the Delta itself makes this an impossible feat.
- DBW is mandated only to keep waterways navigable, not cleared.

Each crew

- has a lead who has obtained a QAC.
(almost all employees have obtained this)
- undergo annual training covering proper application methods, safety, and endangered species I.D. and avoidance.
- have maps and documents detailing conditions unique to particular treatment sites.

DBW's Treatment Strategies

- All sites are prioritized by:
 - Water Hyacinth density
 - Navigability of the waterway
- All herbicide applications are started either upwind or upstream.
- The *Egeria densa* program is currently treating Frank's tract because it is seen as a major nursery to the rest of the Delta.

WHCP Treatment Regime

- Herbicide determined by crops grown near site
- Cannot treat adjacent sites on same day
- Cannot treat more than 3 acres per site per day

Endangered Species

- The main method used to limit impacts on sensitive species is:

Knowledge & AVOIDANCE!!!!



Herbicides Used

- WHCP
 - Weedar 64® - 2,4-Dichlorophenoxyacetic acid, dimethylamine salt
 - Aquamaster® - Glyphosate (N-phosphonmethyl)glycine
 - Agridex® (Adjuvant) - paraffin base petroleum oil and polyoxyethylate polyol fatty acid esters
 - Egeria densa

Water Quality Monitoring Parameters

- Temperature
- Conductivity
- Salinity
- pH
- Dissolved Oxygen
- Turbidity

DBW has studied and continues to study alternatives to herbicides

- Plots where mechanical harvesters have been utilized and studied.
- Funded study through UC Davis where weevils were used in hopes of biological control.
- Currently funding CDFA study in which pathogens may be used to control Water hyacinth.

Special Studies

- Mapping Invasive Species in the Delta – U.C. Davis – ongoing
- Fluridone and Diquat Sediment Accumulation – DFG – ongoing
- Monitoring Aquatic Herbicide Treatment Efficacy in the Delta – Remetrix LLC – ongoing
- Fluridone Dissipation During Typical Applications of Sonar – Dr. Lars Anderson, USDA-ARS – completed
- Acute Toxicities of Herbicides Used to Control Water Hyacinth and Brazilian Egeria of Larval Delta Smelt and Sacramento Splittail – DFG - completed

How can you help???????

- You are doing that now by educating yourself.
- Pass this on to others.
- Don't purchase and utilize plants for decoration until you know the problems that could be associated with the plant.
- Purchasing invasive plants is not illegal in California.

Know thy enemy

Water hyacinth



Pennywort



Questions?

- Contacts:

Paul Ryan, Water hyacinth Environmental Scientist – pryan@dbw.ca.gov

Geoff Newman, Egeria densa Environmental Scientist – gnewman@dbw.ca.gov

Marcia Carlock, Program Manager – mcarlock@dbw.ca.gov