

Arizona Fish and Wildlife Conservation Office
Parker, AZ
Jan 2014

Mitch Thorson – Fisheries Biologist
John Naugle - Biological Science Technician
Sean Okray- Biological Science Technician

Presented by
Tammy Knecht

Summary of Giant Salvinia Spraying
Activities on the Palo Verde Irrigation
Drain, 2013



Background

- Giant Salvinia (*Salvinia molesta*) is a invasive aquatic fern native to Brazil.
- It was discovered in Arizona and California on the lower Colorado River in April 1999 near Blythe, CA.
- Impacts, irrigation, hydroelectric facilities, recreational activities, waterfowl by denying them places to forage and roost, and fish by decreasing levels of DO
- The Arizona Fish & Wildlife Conservation Office, Parker (AFWCO) was contracted in 2004 to spray salvinia in the PVID drainage.

Giant Salvinia control techniques

Herbicide treatment

- boat application
- shoreline application



Biological control

- Salvinia Weevils–USDA



Herbicide treatment used this year



Herbicides used:

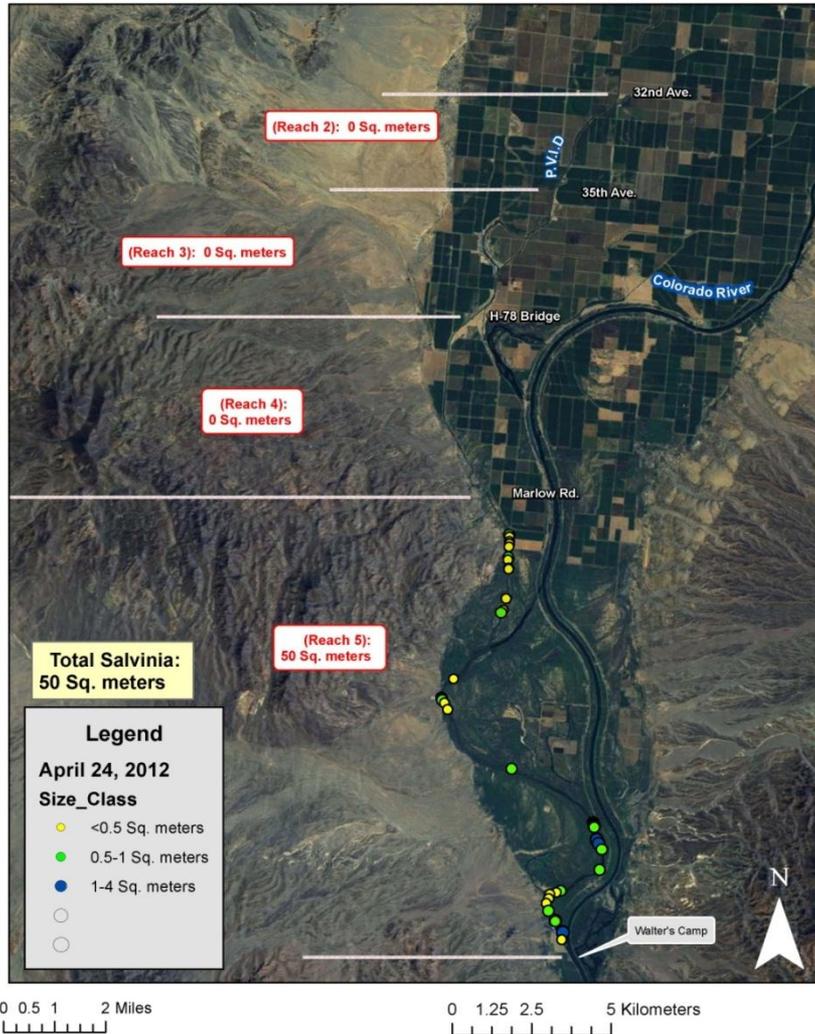
- Glyphosate @ 0.7% conc.
- Diquat @ 0.7% conc.
- Silicone surfactant
- This year, a total of 19.5 gallons of diquat, and 19.5 gallons of glyphosate was applied on the Palo Verde drain.

In 2013, one reach was treated:

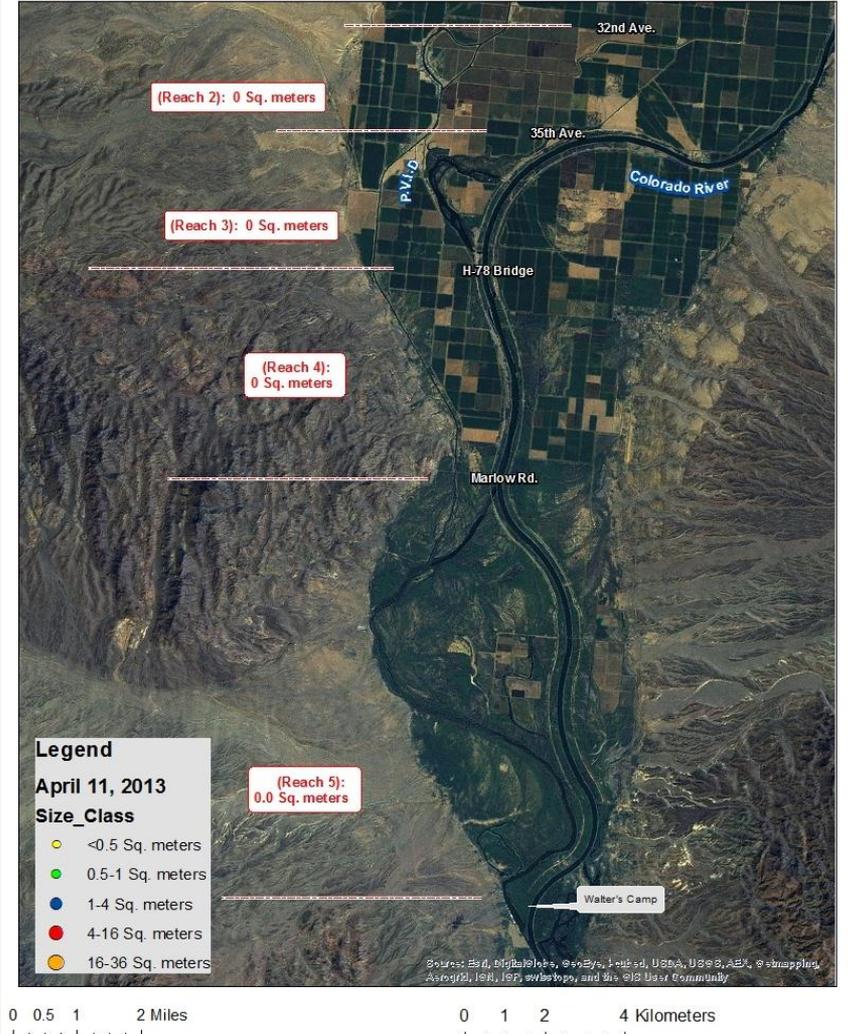
- Reach 5 – Northern boundary of Cibola NWR to Walters Camp

Spring Survey

PVID Salvinia Survey April 24, 2012

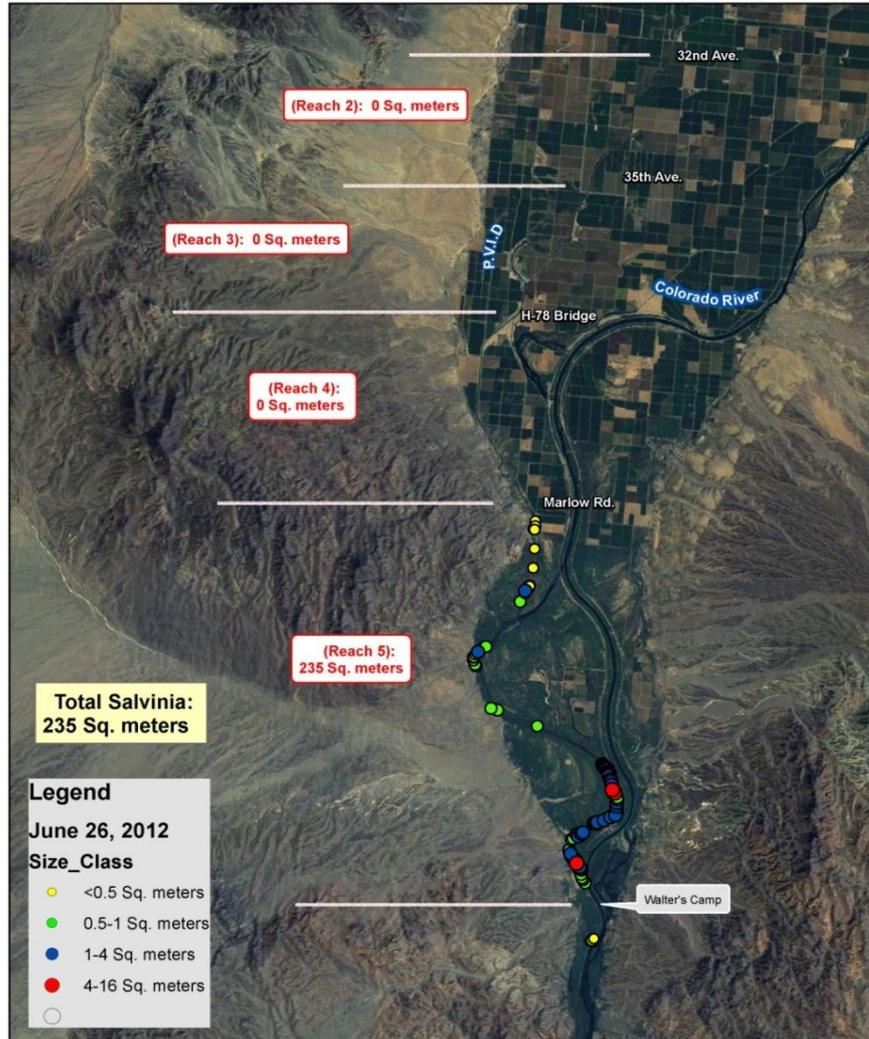


PVID Salvinia Survey April 11, 2013

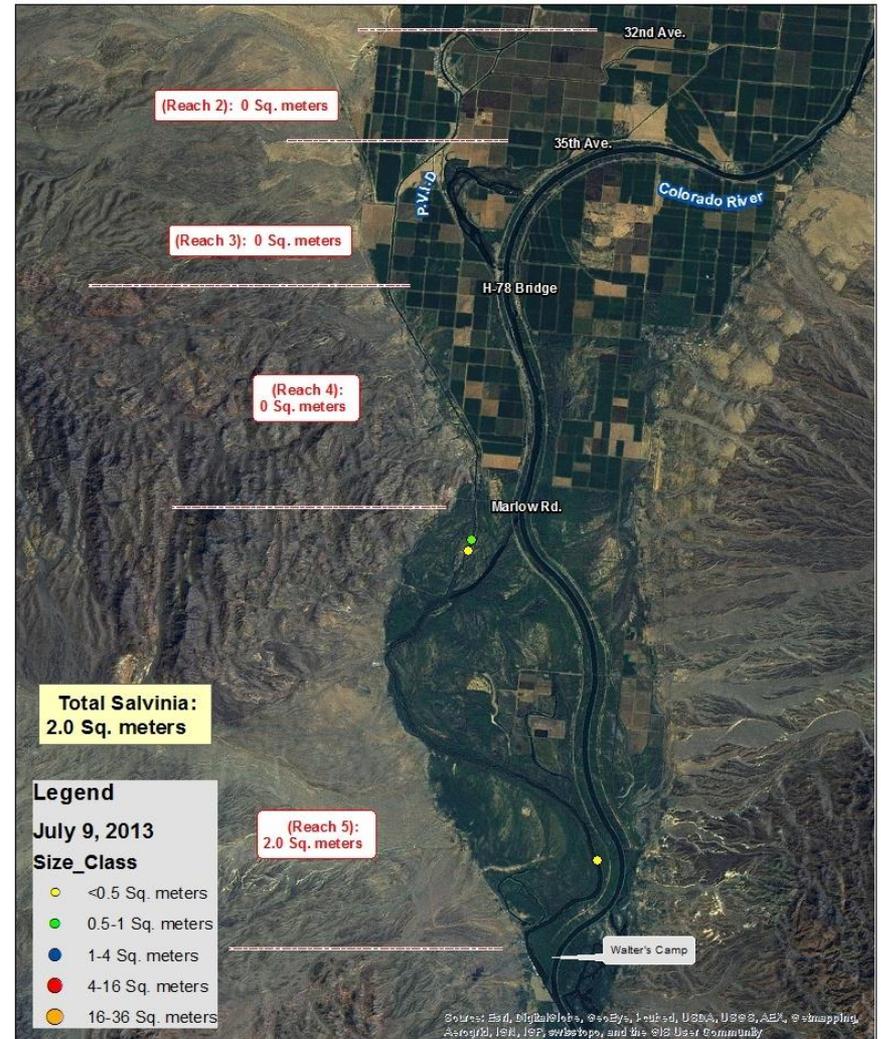


June Survey

PVID Salvinia Survey June 26, 2012



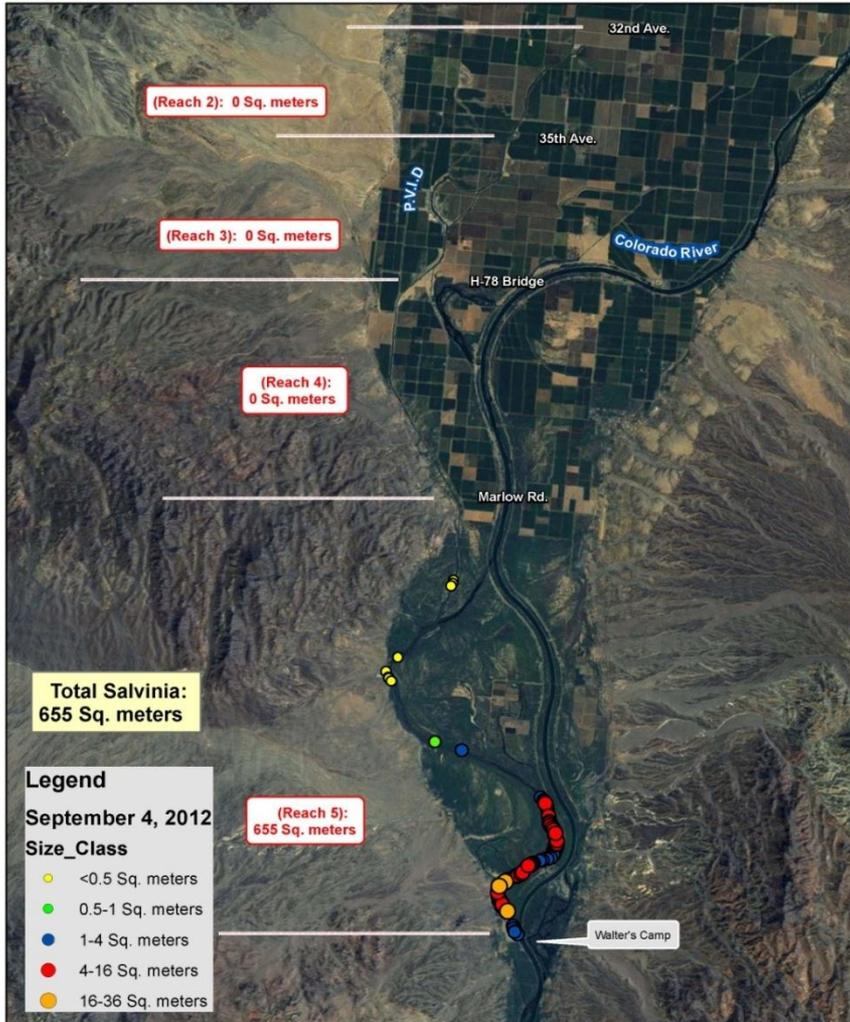
PVID Salvinia Survey July 9, 2013



Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, URS, Aerial, eSatellite, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

September Survey

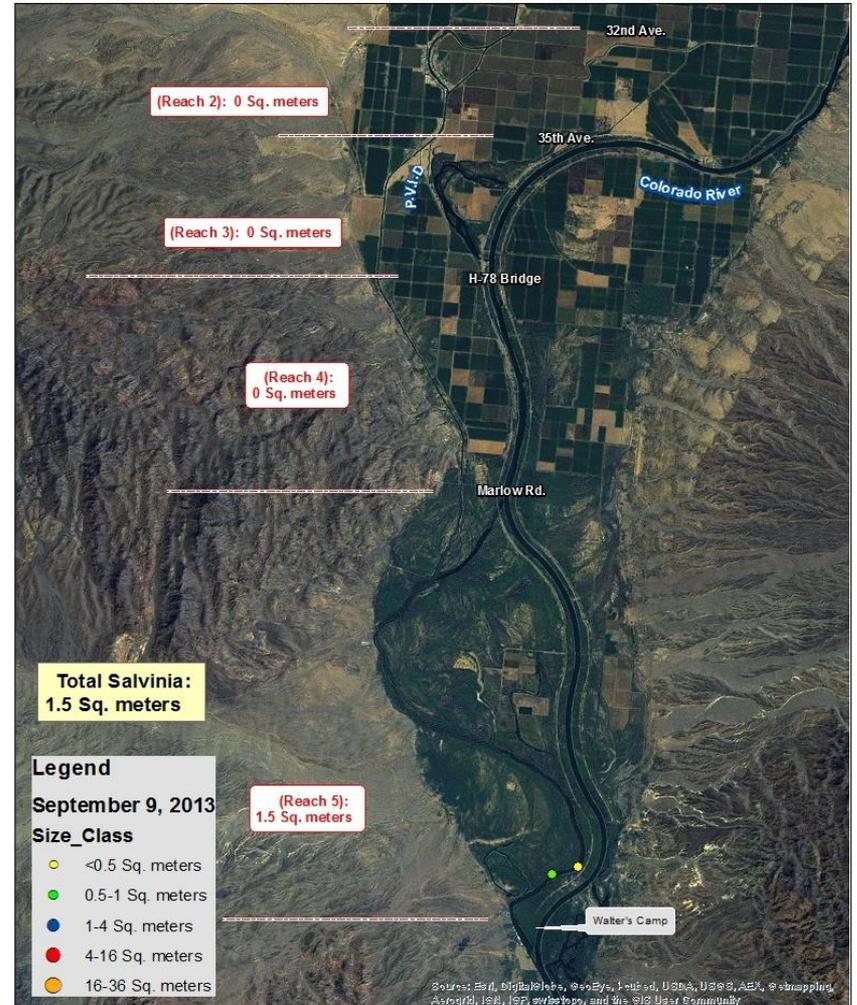
PVID Salvinia Survey September 4, 2012



0 0.5 1 2 Miles

0 1.25 2.5 5 Kilometers

PVID Salvinia Survey September 9, 2013



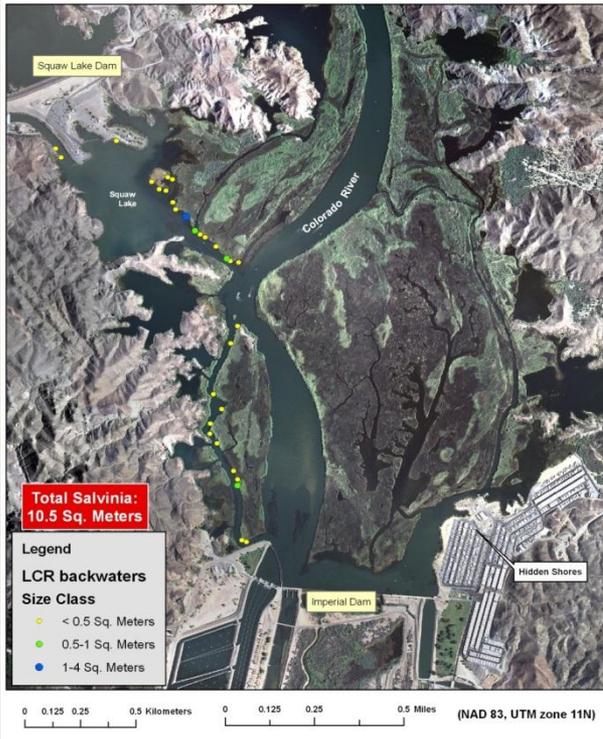
0 0.5 1 2 Miles

0 1 2 4 Kilometers

Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, AeroGRID, IGN, ISY, swisstopo, and the GIS User Community

Backwaters above Imperial Dam

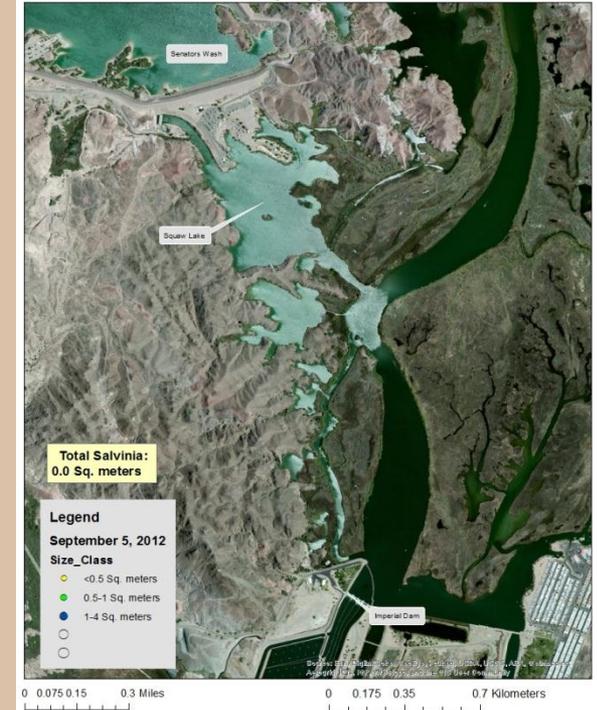
Giant Salvinia Survey LCR Backwaters July 21, 2010



Salvinia Survey August 9, 2011

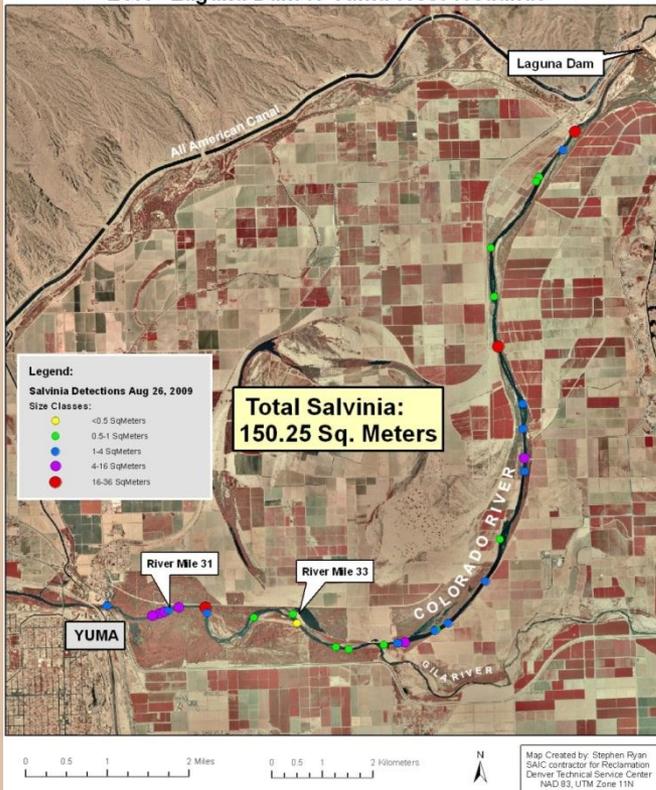


Salvinia Survey September 5, 2012



Below Laguna Dam

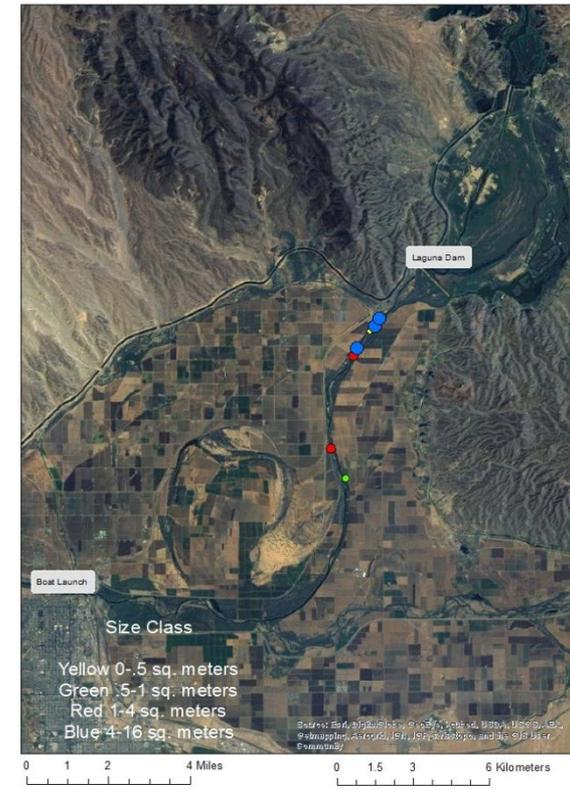
Giant Salvinia Infestations August 26, 2009
LCR - Laguna Dam to Yuma West Wetlands



Below Laguna Dam Salvinia Survey June 28, 2012



Below Laguna Dam Salvinia Survey April 11, 2013



Summary

- Chemical decreased only used 40% of chemicals used last year
- Have eradicated Salvinia from Reaches 1, 2, and 3
- Removed from Reach 4
- We hope to have eradication for Reaches 1,2,3, and 4 next year.

Recommendations FY14

- Introduction of the salvinia weevil to inaccessible areas
- Coordination with National Wildlife Refuges to collaborate on challenges regarding the control of giant salvinia.



Questions