Arizona Fish and Wildlife Conservation Office
Parker, AZ

Summary of Giant Salvinia Spraying Activities on the Palo Verde Irrigation Drain, 2012

Acknowledgements

- Yuma Area Office of the Bureau of Reclamation
- Cibola National Wildlife Refuge
- Palo Verde Irrigation District (PVID)

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.
- The Arizona Fish & Wildlife Conservation Office, Parker (AFWCOP) was contracted in 2004 to spray salvinia in the PVID drainage.
- Impacts, irrigation, hydroelectric facilities, recreational activities, waterfowl by denying them places to forage and roost, and fish by decreasing levels of DO

Objectives

Primary

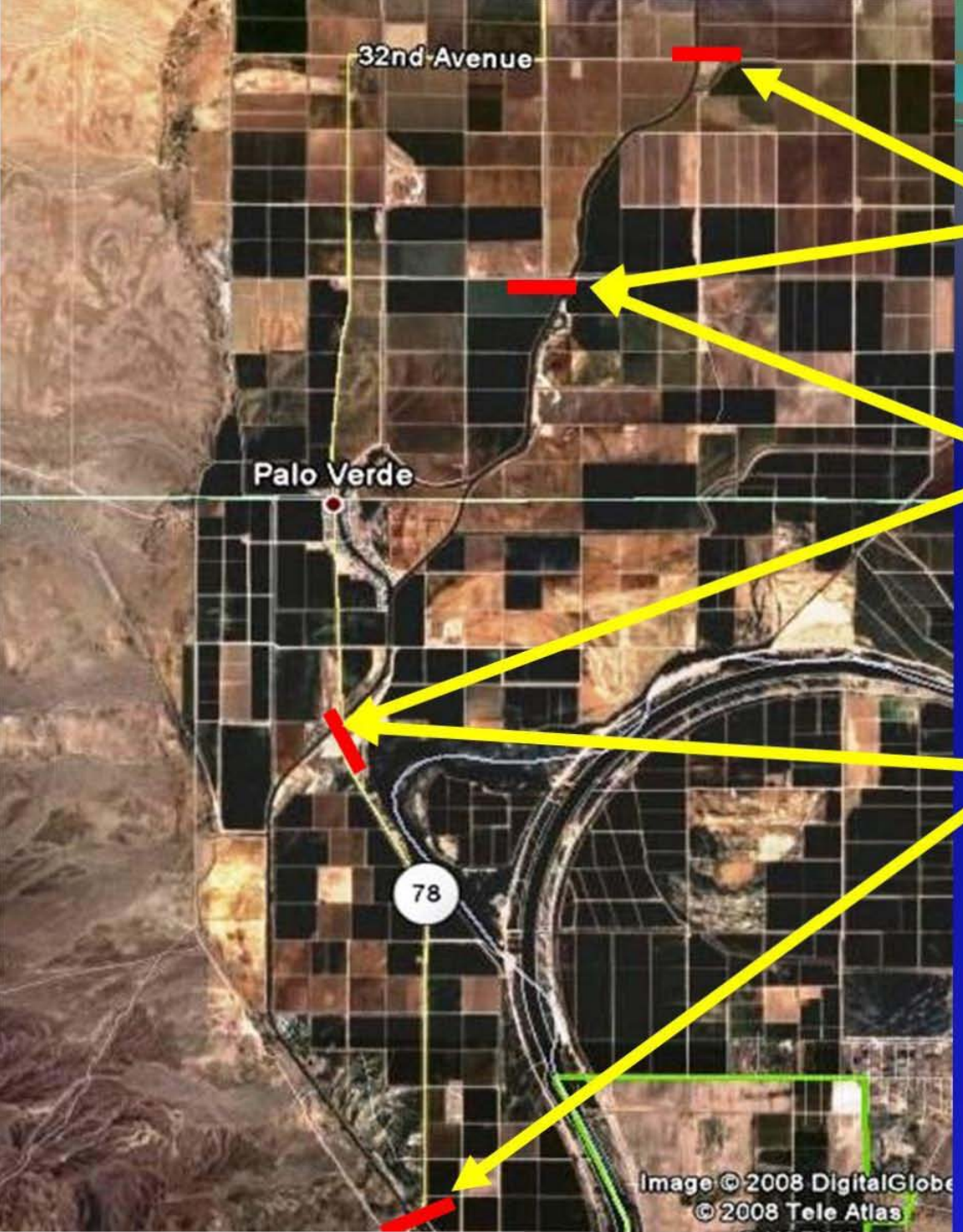
- Control and possibly eradicate giant salvinia from the PVID between 32nd Avenue and the northern boundary of Cibola National Wildlife Refuge

Secondary

- Treat Parrot Feather (*Myriophyllum aquaticum*) when encountered

Herbicides used:

- Reward (diquat)@ 0.7% conc.
- Aquaneat (glyphosate) @ 0.7% conc.
- Clearigate (elemental Cu) @10% conc. (only used in vicinity of docks/boat ramps)



Reach 2

- 32nd Ave to 35th Ave

Reach 3

- 35th Ave to Hwy 78th Bridge

Reach 4

- Hwy 78th Bridge to Refuge boundary

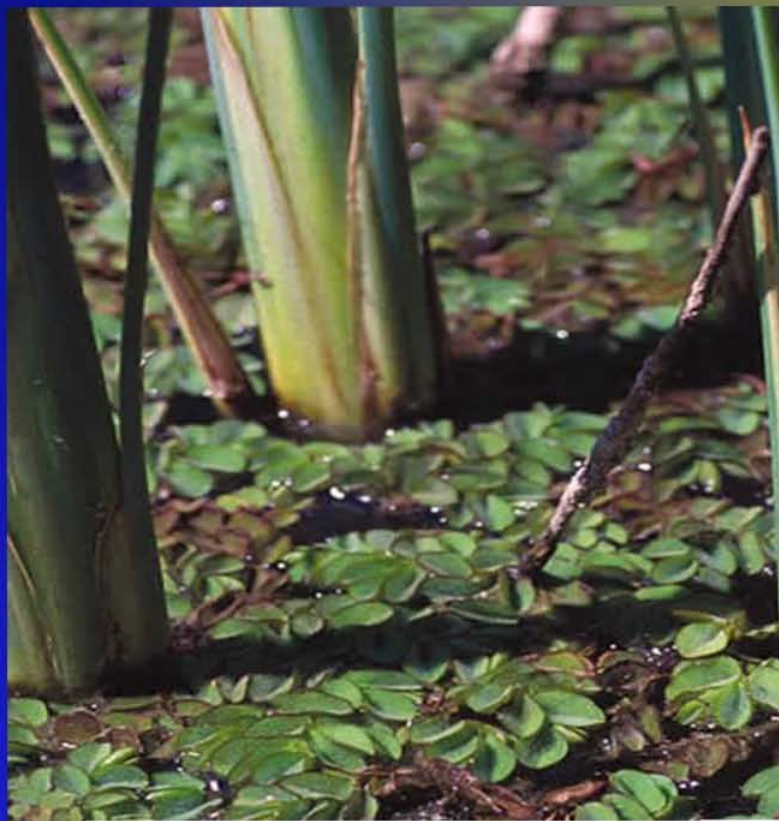
Giant salvinia/parrot feather control techniques

Herbicide treatment

- boat application
- shoreline application

Biological control

- Salvinia Weevils



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Biological Control

Photograph by R. Chan

UGA1929044

In 2012, three reaches were treated:

- Reach 3 - 35th avenue to the Hwy 78 crossing
- Reach 4 - Hwy 78 crossing to the northern border of Cibola NWR
- Reach 5 – northen border of Cibola NWR to Walters Camp

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0, 2004 - 2005
33°27'59.42" N 114°41'21.43" W
Eye alt 124

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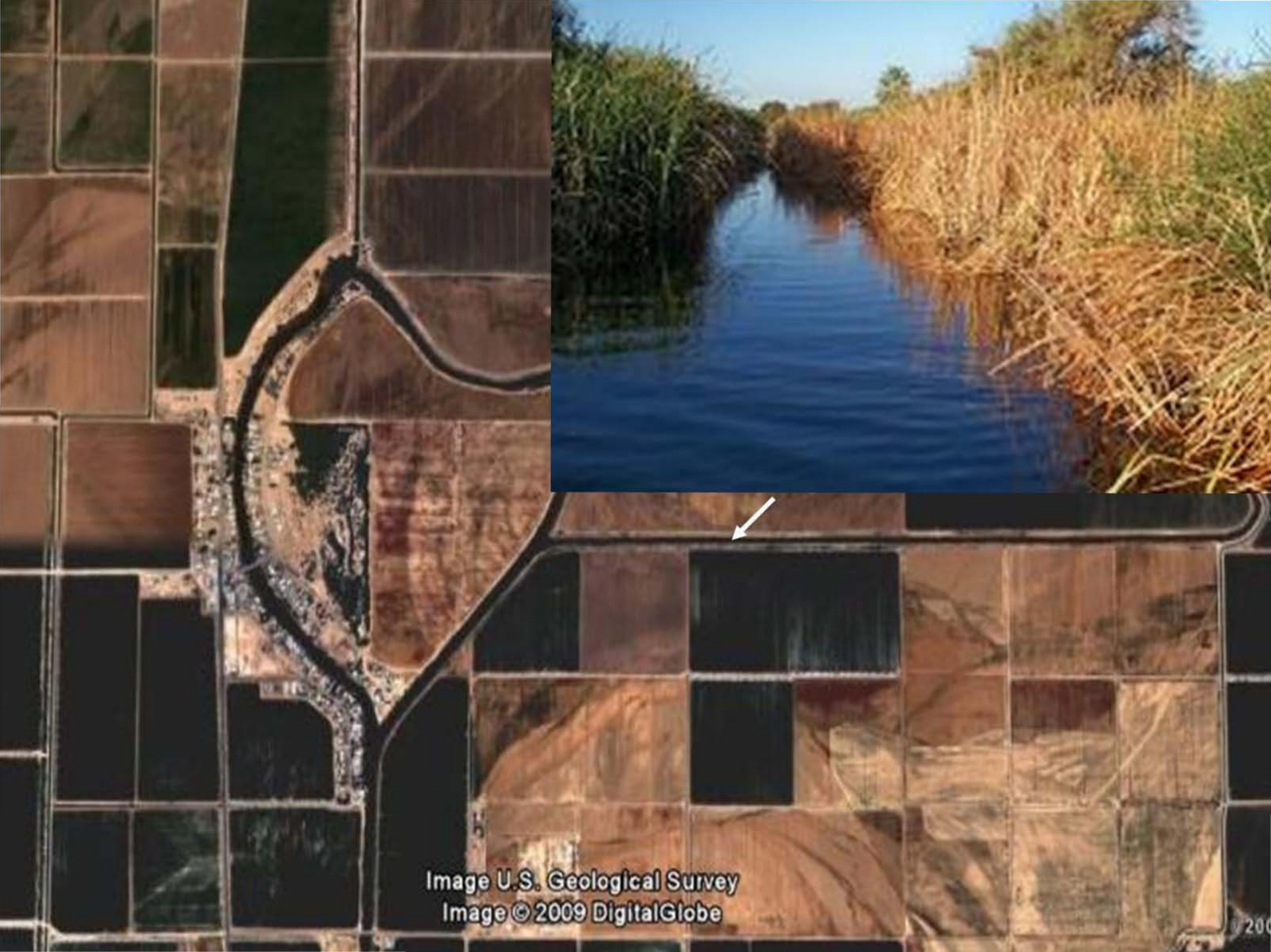
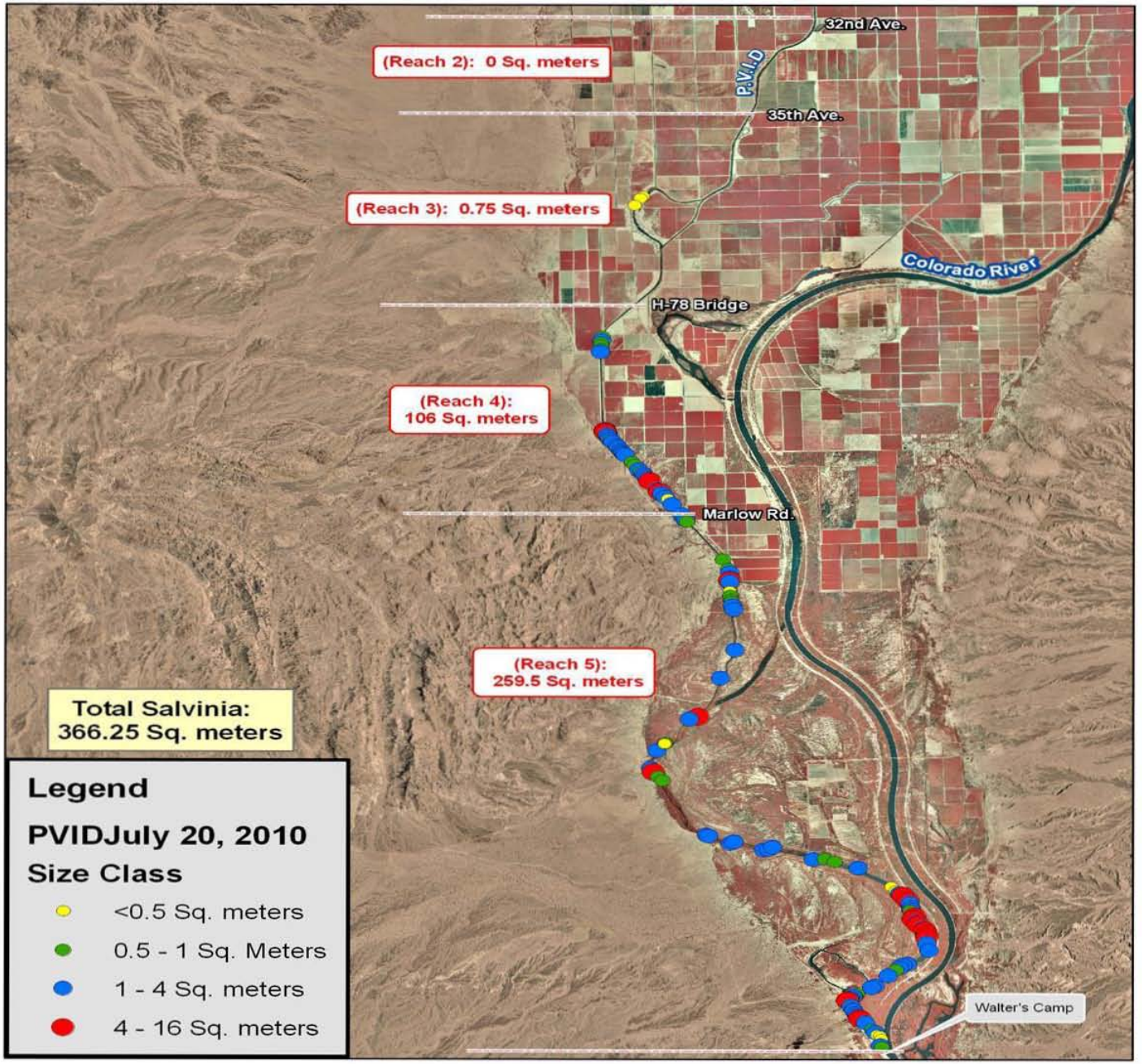


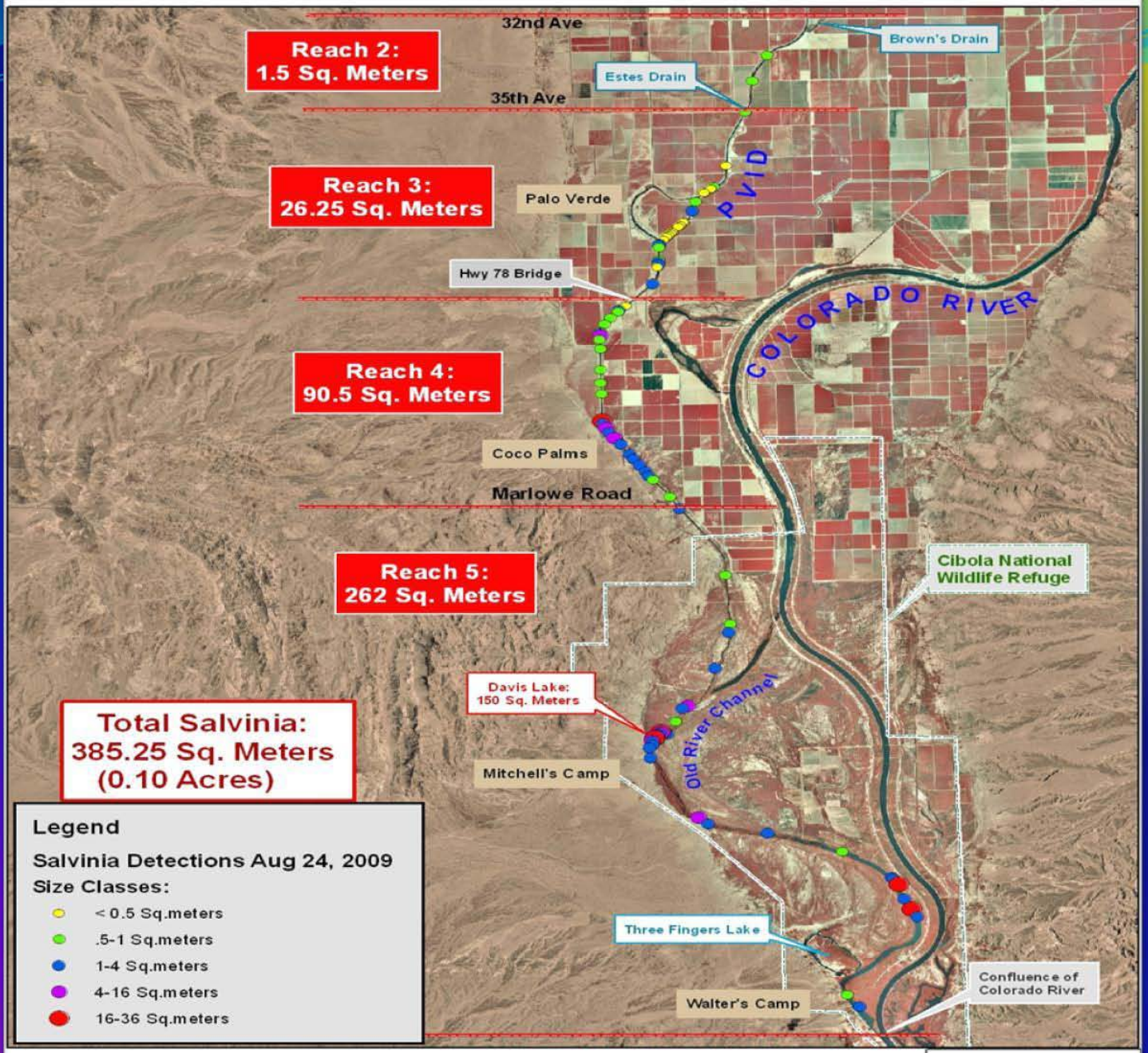
Image U.S. Geological Survey
Image © 2009 DigitalGlobe

Bridges on Palo Verde Outfall

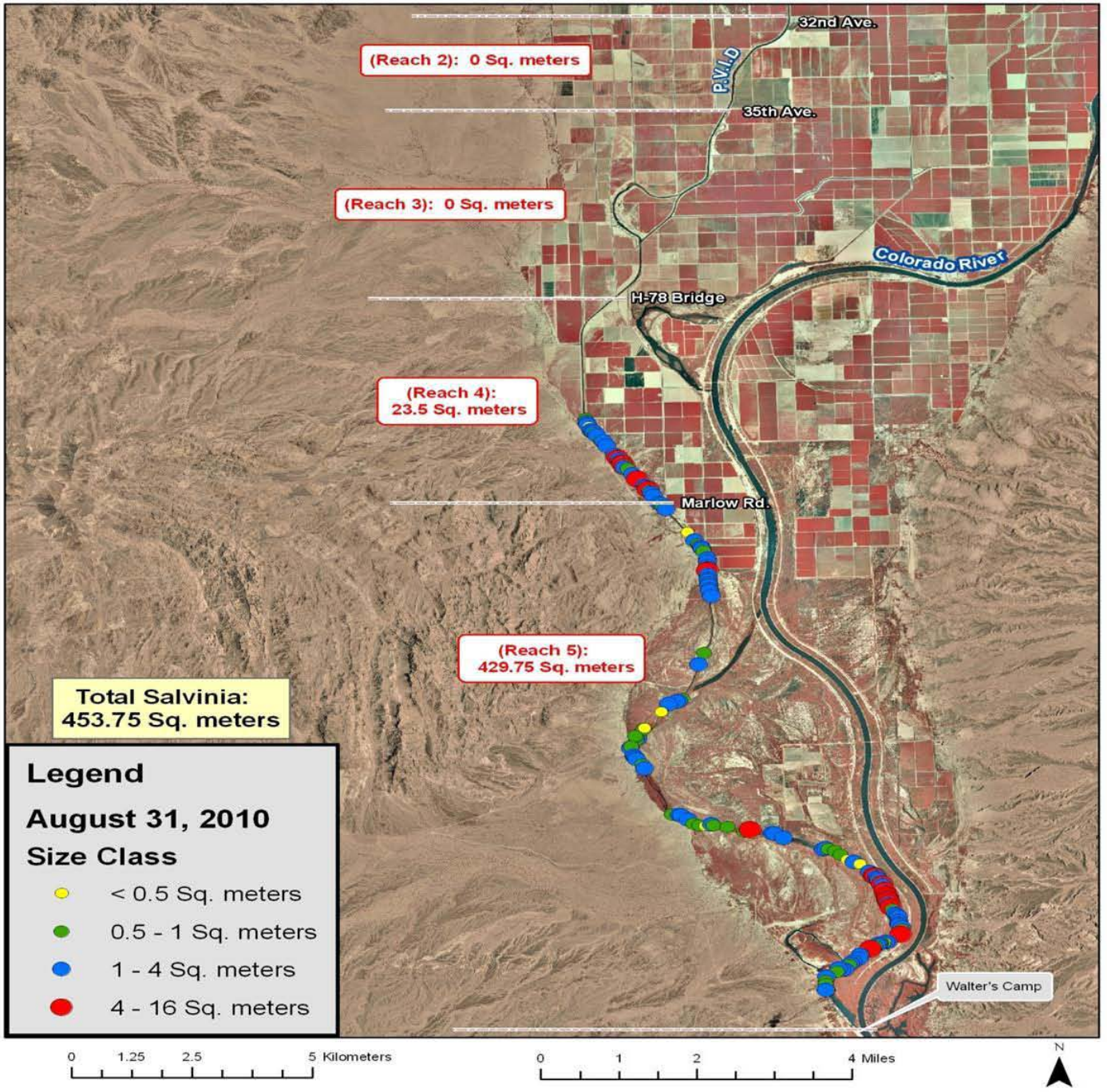
PVID Salvinia Survey July 20, 2010



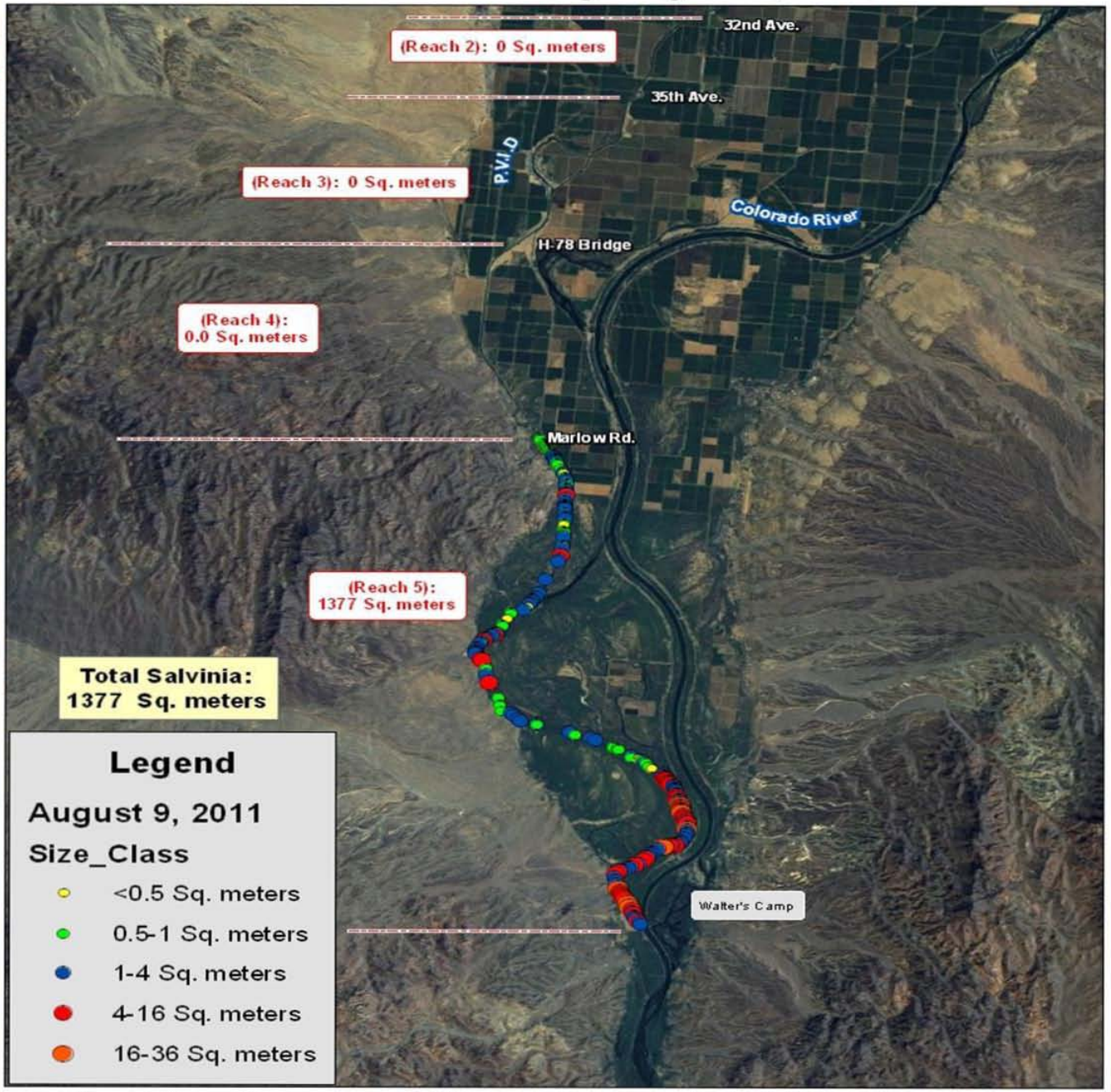
PVID Giant Salvinia Survey August 24, 2009



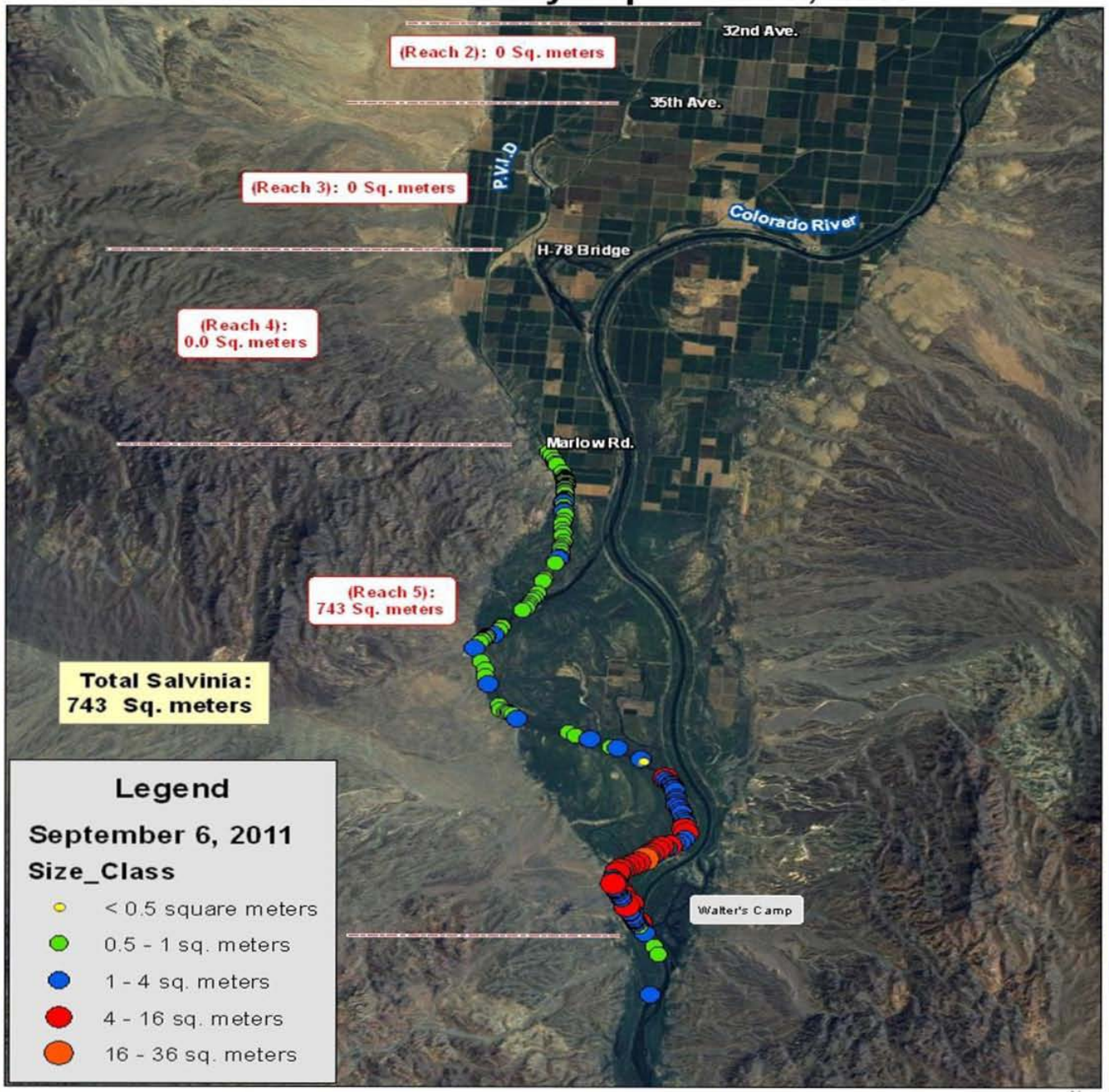
PVID Salvinia Survey August 31, 2010



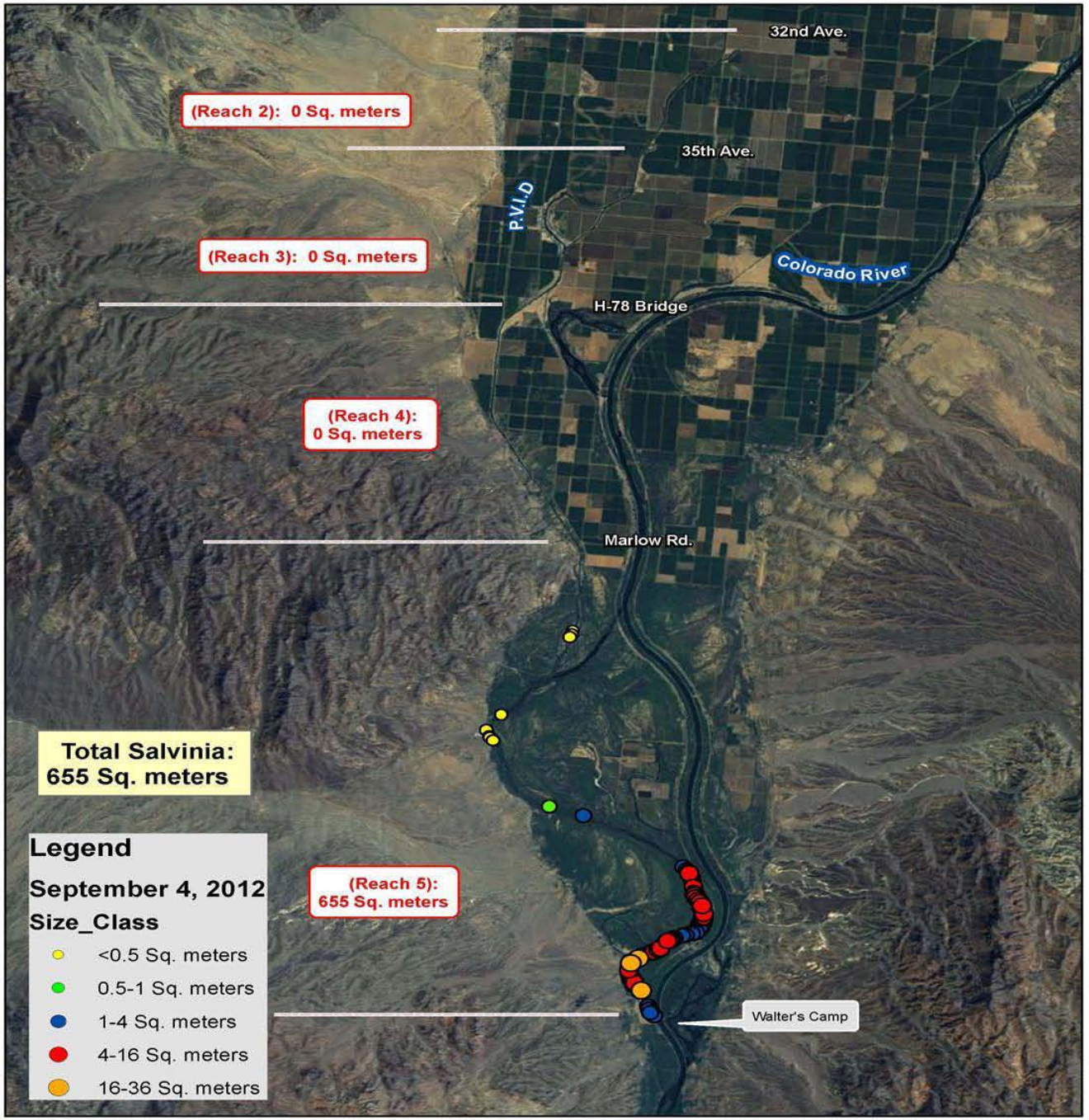
PVID Salvinia Survey August 9, 2011



PVID Salvinia Survey September 6, 2011



PVID Salvinia Survey September 4, 2012



Summary

- 3 reaches of PVID drain were sprayed in 2012.
- Herbicides rodeo, reward, and clearigate were used. A total of 26 gallons of the rodeo and reward where used, producing 4800 gallons of mixed product.
- Levels of the various herbicides did not exceed CA standards for the drain.
- Removed from Estes and Brown Drains.

Summary cont.

- Water quality parameters were within the ranges expected.
- Giant Salvinia was not observed within the banks of reach 2, 3 and 4 in September survey.
- The observations and treatment of Giant Salvinia has greatly reduced in reaches 3 and 4 in October compared to observations and treatment in September 2011.

Recommendations for 2013

- Use a two crew team beginning in early May – late May.
- Increase spot spraying.
- Coordinate with the consultant in reoccurring areas of concern.
- Coordinate with PVID earlier in opening troubled areas.