

**South American spongeplant,
Limnobium laevigatum:
A Threat Worse than Water Hyacinth?**

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Spongeplant Threat

- **Like water hyacinth but:**
 - Seems to spread even more easily
 - Comes right back after clearing an area
- **Why? Heavy seed production, long seed survival, many seedlings, very small. Seedlings are very uncommon for hyacinth.**
- **Spongeplant is not from California. It comes from South America, east of the Andes, like water hyacinth.**

Impacts □ like water hyacinth

- Stops boating, fishing, swimming; ruins views of water; destroys tourism
- Blocks birds □ access to water
- Suffocates fish and other animals (seals water surface from air; dying plants steal oxygen in water)
- Threatens water supplies (blocks canals, pumps, dams)
- Hurts water quality with decaying plants
- Threatens electricity supplies (blocks dams, generators)
- Increases flooding (blocks canals, streams)
- Crowds out native plants
- More money, energy, pesticides to clean canals
- More mosquitoes, disease

Acts like water hyacinth, but mat is packed even tighter



Redding pond, before treatment, June 2005. Spongeplant choked out water primrose and parrotsfeather. Grass is beginning to grow on the mat. Treatments continue as of 2010.

Quadrat 0.5m on a side. Roughly 2000 to 2500 plants per square meter, many times higher than water hyacinth.

□Main□ Canal, Stanislaus Co.



Photos from late September, 2010. Canal personnel report that they noticed no spongeplant in this area as late as July.

Cleaning Main Canal, Stanislaus Co.

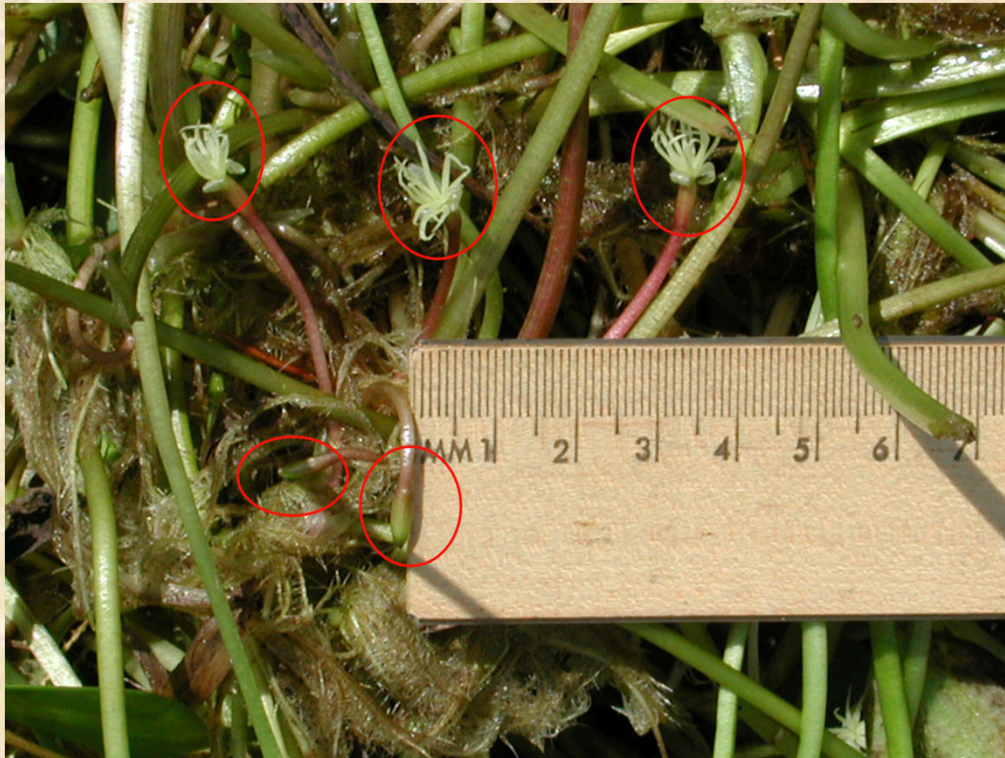


That's all spongeplant.
Water hyacinth is rare to
uncommon in these
canals.

Why would it be harder to manage than water hyacinth?

- Lots of seeds and seedlings
- Seeds survive at least 3 years
- Spongeplant returns rapidly due to sprouting of seeds
- Contrast: Seedlings often very uncommon for water hyacinth
- Small seeds, seedlings, and small plants can bypass water control structures and probably stick to birds. Water hyacinth plants are larger and easier to exclude from areas.
- Result: continuing spread in San Joaquin Valley despite work by 7-person state crew and canal companies

Heavy seed production



Redding pond, late spring 2006. Above, female flowers and seed pods in red circles.



Above: opened seed pod.

Produces many seedlings



Seedlings in red ellipses. The other small plants are duckweed.



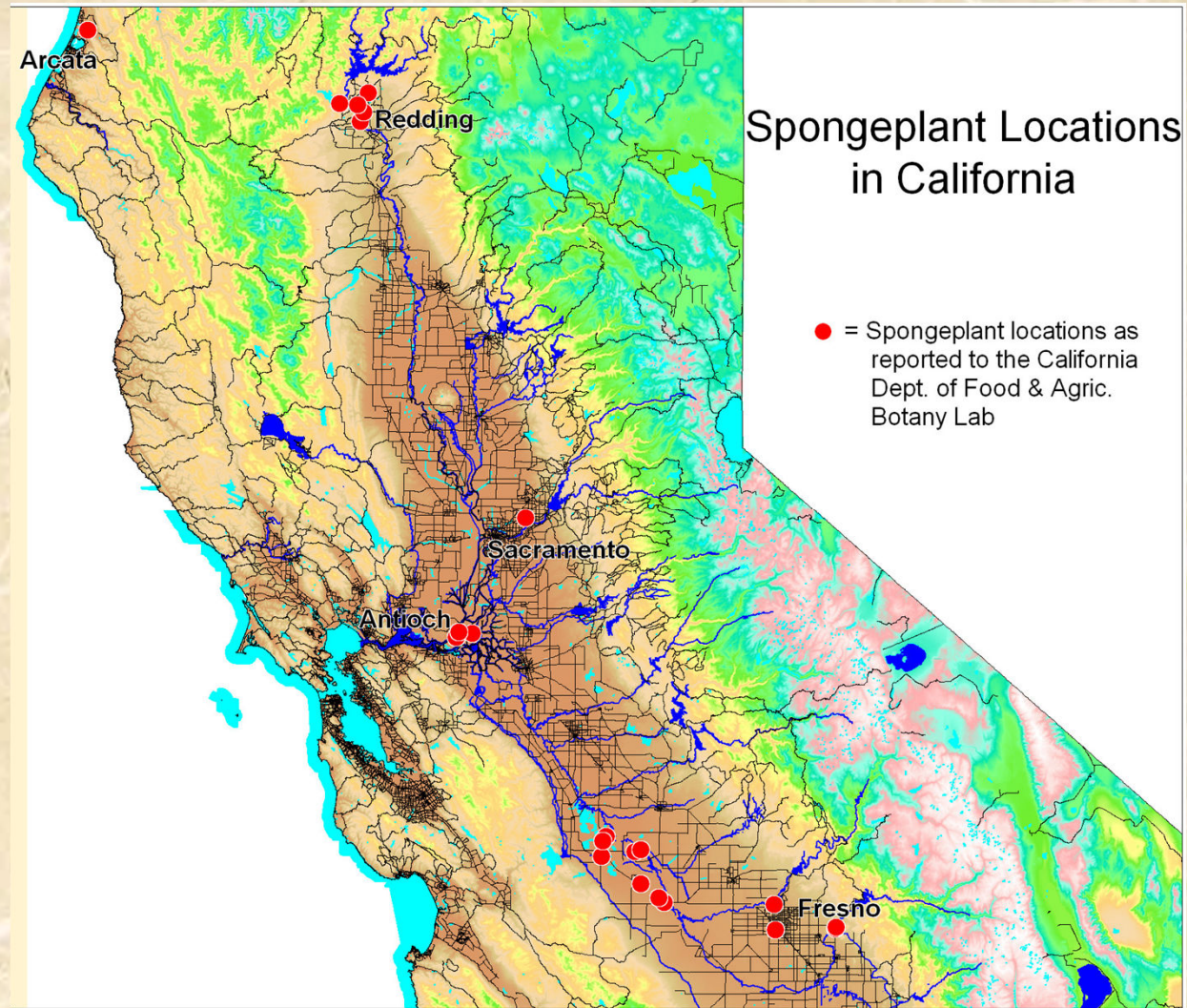
Seedlings are small!
Result: plant spreads easily.

**Seed survival time unknown, but at least 3 years.
Result: immediate re-infestation of cleaned areas.**



Seedlings emerging in the source pond in the Kings River canals infestation. Photos taken Oct. 2010. This pond has been kept clean of mature plants since early spring 2008. Pond was heavily infested when found.

Result: Steady spread in California 2007-2010



Official state records of spongeplant locations in California. The first records of spongeplant were in 2003, in Arcata and Redding. No more spongeplant appeared until the summer of 2007, when plants were reported in the San Joaquin River in Fresno. In late December, 2007, it was reported a few miles from Antioch in a patch at the western edge of the Sacramento Delta. That patch seemed to disappear after a major winter storm occurred a few days later. In February, 2008, plants were found in a canal system off the Kings River east of Fresno. In summer, 2008, it appeared in canals in western Fresno County between Mendota and Dos Palos. In 2009 and 2010, it was again found in the Delta. The Sacramento city location was in a small drain and has been eradicated.

It's moving into the Delta



Above: Sacramento-San Joaquin Delta. Left, spreading patch; right, more mature mat. Note how it is crowding tules and cattails.

In the Sacramento-San Joaquin Delta.



Item of hope: Treatments work well if infestation is caught early, before seed bank established



A canal in western Fresno county, before, during, and after treatment, 2008. Plants did not come back at this location, end of 2010.



In locations where the plants have had time to set a lot of seed, they quickly reappear.

Healthy plants– Delta, Oct 2010



Winter Effects – same vicinity, Feb 2011



Winter Effects – Delta, Feb 2011



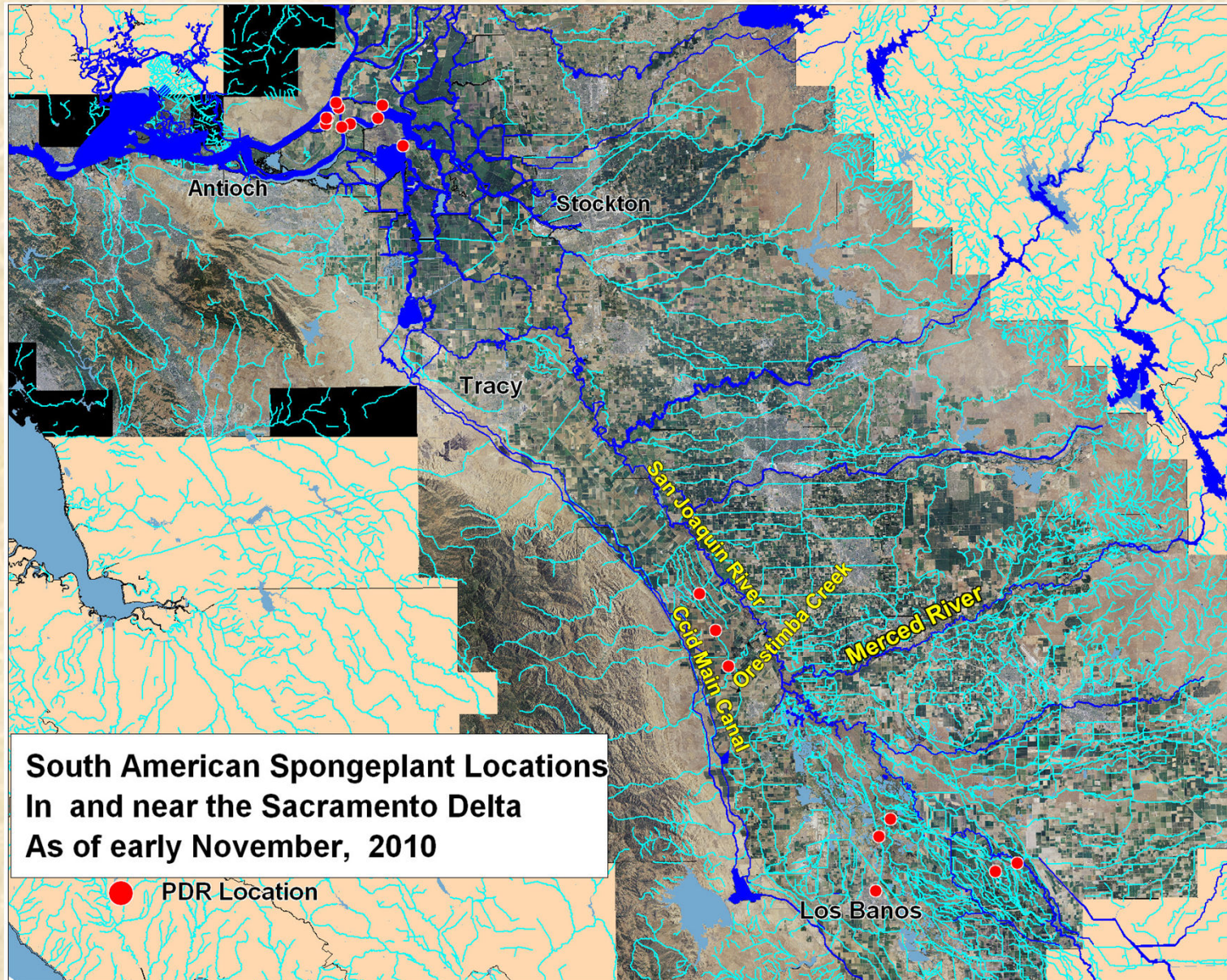
Winter Effects – Delta, Feb 2011



Winter Effects – Delta, water hyacinth Feb 2011



Result: Steady approach toward Delta



CDFFA Response (Hydrilla Program)

- **2003:** Infestations found in Arcata (on coast) and in Redding (north end Central Valley)
- **2004:** Regulations to eradicate it where it threatens major waterways
- **2005:** Begin treating ~4 sites in Redding; 3 eradicated, one continues treatment.
- **Summer 2007:** One small spot reported in SJ Valley (Salt Slough), eradicated. Also reported along SJ River in Fresno. Fresno Hydrilla crew begins survey, suppression (6 seasonals, 1 perm).
- **Dec 2007:** patch in west Delta; disappears after storm
- **Feb 2008:** small canal system off Kings River, east of Fresno. Heavily suppressed.

CDFA Response

- Summer 2008: Found in CCID canals in western Fresno Co. Survey, suppression locally effective but plants widely, unpredictably scattered.
- 2007-2009: 3 to 4 applications to obtain extra funds for expanded survey but none successful.
- 2009: Suppression of Fresno populations continue, slight spread northward in western canals.
- Summer 2009: found again in Delta. Hydrilla Program has no local resources for a response.
- 2010: Suppression of Fresno populations continue, but now populations have spread in canal systems to north of Los Banos. Mostly very light, very scattered.
- Fall 2010: Application to CDFA Emergency Fund obtains \$92K

CDFA Response

- **2011: Expanded survey to define size of problem**
- **2011: Test treatments in Delta to determine if eradication is possible**
- **2011: Expand CDFA eradication authority to include Delta by normal regulations process, not emergency**
- **Late 2011: Results to stakeholders; determine whether to start large-scale eradication effort**
- **After 2011: ??**

What you can do

- Express support for work on this invader to the California Department of Food and Agriculture, other state agencies, and the Legislature
- Learn to recognize spongeplant. Refer to the companion slide show □Photos for Outreach: South American Spongeplant□ on the CDFA website.
- Report sightings (good location info is important): Patrick Akers, pakers@cdfa.ca.gov
- Don't grow it! Don't buy it for your aquarium, water feature, or pond.
- Tell your friends

Summary

- **Spongeplant may be a more widespread, persistent problem than hyacinth**
- **Strongly urge you to:**
 - **Survey for it**
 - **Don't let it get established**
 - **Hit it hard, fast when it's found**



We can beat
this plant!



Questions?

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http://www.cdfa.ca.gov/phpps/ipc/hydrilla/hydrilla_hp.htm