

## **Executive Summary**

The Hydrilla Program's goals are to eradicate every hydrilla plant from California and to find any new invasion when it is small and easy to eradicate. The Hydrilla Program appears to be turning around challenges in two major infestations, as progress continues in most.

Hydrilla is an invasive, non-native water plant and has been called the world's worst submersed weed. It reduces water storage and water movement, chokes water control structures and hydroelectric generators, ruins boating and fishing, damages fish and wildlife habitat, and produces good mosquito habitat. Hydrilla once heavily infested canals in the Imperial Irrigation District in Southern California, where it reduced water flows as much as 85 percent. In highly infested states, such as Florida, control efforts cost tens of millions of dollars each year.

Some of what makes hydrilla such a successful weed are its excellent survival and dispersal capabilities. It breaks apart easily, and fragments no more than one inch long will grow new plants. It also develops "tubers" on its roots. Each tuber produces a new plant, and a single tuber can lead to several hundred new tubers in one season. Tubers survive for four to seven years and present the major challenge in eradicating the plant.

### **Key developments of 2008:**

- The Clear Lake project may be turning the corner on the recent recovery of hydrilla in the lake. In 2008, the situation seemed threatening. Project crews found 196 "spots" with hydrilla in 2008 as compared to 72 in 2007, and many of the plants were large and reached the surface. Many of the finds were also near the outlet of the lake, which was particularly troubling. However, in 2009 the crews could find only 76 spots with hydrilla, and the plants were much smaller and sicklier than last year. In addition, there were no finds near the outlet. Hydrilla had returned to Clear Lake in 2007 after being absent since June 23, 2003. Treatments in Clear Lake depend solely on herbicides, and the treatments had ended with the 2006 season, following the standard protocol.
- The Program reached a true milestone this year. The Chowchilla River – Eastman Lake project passed the seven-year mark with no hydrilla found anywhere in the system. With this achievement, the Program will declare the infestation eradicated. Congratulations to all the pioneers who undertook this daunting challenge, and who, with hard work and persistence, overcame all the uncertainties to bring the project to a successful conclusion.
- Many other projects continued their trend of no plants. Five seasons have now passed without any plants in Tulare County's Costa Lake infestation and in Calaveras County's Bear Creek and Mokelumne Hill infestations. Three seasons have now passed with no plants in Shasta County's Riverview Golf Course and Anderson City River Park infestations. The three separate infested ponds in Nevada County also have had no plants for three years.
- Inspired by the concrete lining of the infested section of the Oregon House canal in 2008, the Yuba County Weed Management Area, the Agricultural Commissioner's Office, and the Resource Conservation District undertook the lining of another 1,500 feet in 2009, with contributions from CDFG. Undaunted by the experience, they are working towards lining another 2,000 feet or so in 2010.

- The Department of Water Resources decided to increase its support for the Hydrilla Program, after considering the threat the plant represents to California and the situation in Clear Lake.
- In late October, 2009, four outside experts met for two days to review the Clear Lake project and suggest ways to improve it. The panel made about forty recommendations, most of which were technical refinements. They did not recommend any major strategy shifts, except in determining the time to end treatments. Here they could not recommend a fixed period of follow-up treatment, except to note that three years was too short. Instead they recommended developing biological assessments to determine the hydrilla's health in the lake, and they suggested some methods to explore. The panel also recommended that the goal of the project remain the eradication of hydrilla from the lake.
- No new infestations of hydrilla were found in California this year. The number and extent of detection surveys are down from previous years due to the pressures of Clear Lake and limited resources. However, two crews were able to spend two weeks in September surveying the Sacramento-San Joaquin Delta.
- The effort to contain and eradicate South American spongeplant continued its seesaw progress in 2009. No major new infestations appeared, but the cat-and-mouse pattern of shifting finds continued in flowing water infestations such as the San Joaquin River and the irrigation systems in western Fresno County. As has been the case, in any one location the population is relatively easy to reduce to very low levels, but then the plant pops up in a connected location. The infestation in the Kings River area is looking very promising, however. Furthermore, in the Redding pond infestation, hardly any plants appeared after a single light treatment at the beginning of the season. Photos and observations suggest that the plants probably have not set seed there since about 2007, so perhaps the seed bank is reaching its limit.

Hydrilla was first found in California in 1976, and it has been introduced on 30 separate occasions. The Hydrilla Program has eradicated 22 of those infestations and several other infestations are approaching eradication. The prime requirement for eradication is persistence. A single eradication of a large infestation requires six to 20 years of continuous attention, due to plant's excellent growth, dispersal, and survival strategies. In addition, infestations are easier to eradicate when they are small. Finding small infestations requires routine, vigilant, widespread survey.