

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. 2011 found the CDFG Hydrilla Eradication Program on the way to meeting those goals, with the momentum turning towards eradication in the two largest and most challenging projects, Clear Lake and Oregon House.

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 2011:

- After declaring eradication in the Chowchilla River / Eastman Lake infestation in 2010, three more hydrilla projects are reaching the threshold. At the end of the 2011 season, seven years have passed with no plants in the Mokelumne Hill and Bear Creek infestations in Calaveras County, and in the Costa Lakes infestation in Tulare County. These infestations will be monitored for one more year and then eradication will be declared.
- The Clear Lake project continues a satisfying decline in plant numbers this year. By contrast, in 2008 the situation was threatening. Project crews found 196 "spots" with hydrilla that year, and many of the plants were large and reached the surface. Over 20 of the 2008 finds were 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 sicker than in 2008. In 2010, there were only 12 plants, and only six in 2011. No plants have been found near the outlet since 2008.

Five seasons with no plants have now passed for Shasta County's Riverview Golf Course and Anderson City River Park infestations. The ponds have been under treatment with herbicide all that time. In 2012 the ponds will enter the three-year non-treatment survey phase of the projects. The three separate infested ponds in Nevada County also have had no plants for five years. For the 2012 season the project managers may move to survey with possible dredging for any plants that appear.

- Inspired by the concrete lining of the infested section of the Oregon House canal in 2008, the Sutter/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 initiated new efforts in 2010 and lined another 3665 feet in October 2011, bringing the total to about 9100 feet.

- Based on recommendations from the Technical Review Panel at Clear Lake in 2009, the Clear Lake Project started several new initiatives to better follow the infestation in the lake and to improve treatments.
 - In 2010, Project staff developed an artificial target to represent young hydrilla plants and used it to estimate the probability of hooking a plant. Preliminary results indicated that there was about a 13 percent chance of hooking a plant in any one survey, or about a 65% chance in a typical year of surveys.
 - In 2011, the Project crew searched for tuber beds for potential long-term monitoring. They took 875 four-inch core samples from locations with the highest density and vigor of plants, within an area of 1.2 acres. They found no tubers at all after three weeks work, indicating that tubers are becoming very scarce.
 - The Project is working with the manufacturer of Sonar herbicide to modify the SRP pellets to provide a more even distribution on the bottom of the lake.
 - Finally, the Program contracted with a Lake County biologist to put in place all the regulatory and permitting requirements so that the Project will be able to do small-scale dredging of plants to remove tubers. Those permits are in hand and a contract has been submitted to request bids for a company to provide the necessary small-scale dredging.

- After the results of 2011 and in anticipation of starting to dredge in Clear Lake, the Program will take some treatment areas out of herbicide treatment in the 2012 season. All the candidate areas have been in treatment for at least four consecutive years and have gone at least four years without plants. About 90 acres have been identified for dredge treatment.

- 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 three weeks surveying the Sacramento-San Joaquin Delta.

- CDFA disbanded its longtime weed programs in 2011 due to declines in the State's General Fund, and with them went the six District Weed Biologists. The Weed Biologist in the Northwest District, Ed Finley, had been taking care of the infestations around Redding, but that has ended. His role has been picked up by staff out of Sacramento. The change will lead to a change in strategy. Rather than surveying the ponds lightly many times during the season, crews will visit the ponds only twice, probably in the first weeks of July and September. However, they will spend several days surveying the ponds each time.

- Despite the loss of the other weed programs, the Hydrilla Program continues, as it has funding outside the General Fund. CDFA management did remove all General Fund support from the Program. However, the Program approached the Departments of Boating and Waters and Water Resources, and they agreed to make up the shortfall.

- The Hydrilla Program received some extra funding to do extended survey for spongeplant, particularly in the Delta. As a result, two to three crews spent approximately 20 days each in the Delta. The crews radiated out along waterways from the known epicenter of the infestation in the northwest part of the Delta, and also searched along the San Joaquin River as it enters the Delta from the south. The survey indicated that spongeplant is still relatively confined to the northwest area and has not yet spread widely in the Delta. It was not found in the San Joaquin where it enters the Delta.

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.