

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. 2010 seemed like a breakthrough year for the CDFA Hydrilla Eradication Program, with the momentum turning back towards achieving 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 2010:

- The Clear Lake project appears to be turning the corner on the recent resurgence of hydrilla in the lake. In 2008, the situation was 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. Over 20 of the 2008 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 in 2008. In 2010, there were only 12 plants and only five plants were outside existing treatment areas. No plants were found near the outlet in either 2009 or 2010. The number of new acres brought under treatment each year was 350, 249 and 120 acres in 2007, 2008 and 2009, respectively. By comparison, we added only 20 acres in 2010.
- Many other projects continued their trend of no plants. Six 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. Four 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 four 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 CDFA. Undaunted by the experience, they initiated new efforts in 2010 to line at least another 3,500 feet by the end of 2011. With this effort, nearly all of the heavily infested sections of the canal will have been lined. This should provide a major boost to eradicating the plants in the canal, and, by extension, in all the ponds, which derive their water from the canal.

- 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.
- The Biologist for the Oregon House project in Yuba County undertook the lining of Citron Pond. The 0.2-acre pond, which has the heaviest and most persistent infestation in the project, was lined with heavy synthetic rubber sheeting. The Biologist did much of the work himself with help from a variety of colleagues in the Integrated Pest Control Branch (IPC). The liner should be the end of the infestation in that pond.
- 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. Project staff developed an artificial target to represent young hydrilla plants and used it to begin estimating the probability of hooking a plant. They also began development of a tuber sampling method to follow the depletion of tuber populations through time and took steps to move from management units based on landmarks to units based on equal areas. The Project is working with the manufacturer of Sonar herbicide to modify the SRP pellets to provide a more even distribution of the herbicide on the bottom of the lake. Finally, the Program initiated a contract with a Lake County biologist to focus on putting 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.
- 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 2010. 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. Also, the plant continued to spread northwestward from the western Fresno County area canals so that it is now found beyond Los Banos. A new infestation was also found in the Patterson Irrigation District, and the infestation in the Sacramento – San Joaquin Delta appeared to become more heavily entrenched and to spread slightly.

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.