



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Dane L. McFadden	Project Number J0816
Project Title Removing Water Pollution with Plants	
Abstract Objectives/Goals The purpose of my project was to find out which of three water plants absorbs the most nitrates and phosphates in water. The three plants I used were: Ceratophyllum demersum (Hornwort), Elodea canadensis (Elodea), and Cabomba aquatica (Purple Cabomba). I thought that Elodea will absorb the most pollutants, Hornwort the second most, and Purple Cabomba the least. Methods/Materials I purchased 36 bundles of Hornwort, Elodea, Purple Cabomba, and 12 38-liter aquariums. I filled each of the aquariums with 30 liters of water, 4 bunches of each plant, and a different mixture of nitrates or phosphates (10 ppm 20 ppm or 40 ppm) and placed them in a greenhouse where I controlled the temperature and lights. Before I put the plants in with the pollutants I had a tissue analysis taken at Fruit Growers Laboratories of each species of plant from each aquarium. I kept the water plants in the greenhouse for three weeks. Then I had a second tissue analysis made for each species in each aquarium and compared the results of both tests. Results I found out that Hornwort absorbed the most nitrates, Elodea absorbed the most phosphates, and Purple Cabomba consistently absorbed the least of the 3 plants. Conclusions/Discussion My conclusion is that water plants could help remove of some types of water pollution problems. Hornwort and Elodea could help reduce phosphates and nitrates.	
Summary Statement My project is about removing water pollution using water plants.	
Help Received Darrell Nelson, President of Fruit Growers Laboratory, advised me on my project; Fruit Growers Laboratory did plant tissue analysis; my mother purchased materials; my father purchased materials and gave me building advice and help build the greenhouse.	