

Hydrilla Eradication

Trevor Fox, PhD

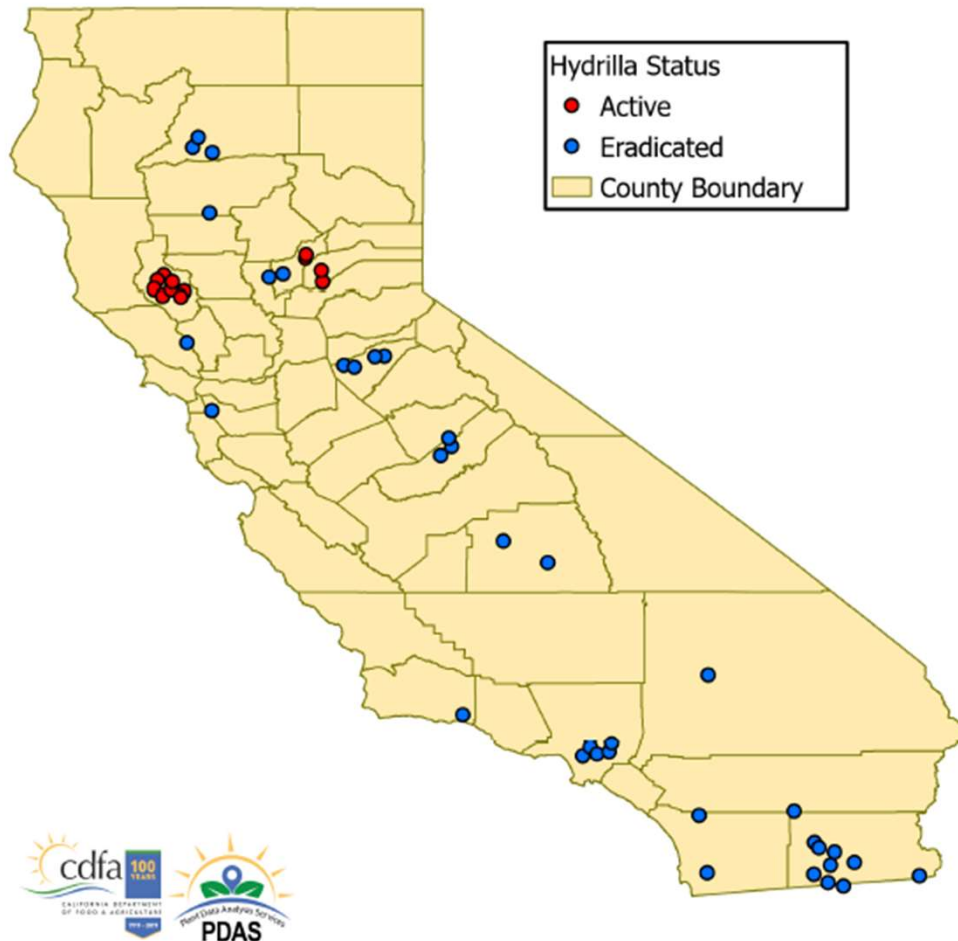
Noxious Weed Coordinator

Integrated Pest Control Branch



Successful eradications!

CDFA Hydrilla Program 1976-2024



Three active
(Lake, Nevada
and Yuba
Counties)

Authority

- Food and Agricultural Code Section 403 (General Provisions):
 - The department shall prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds.

California Department of Food and Agriculture

- Food and Ag. Code sec. 7271. (a) The Legislature designates the Department of Food and Agriculture as the lead department in noxious weed management and the department is responsible for the implementation of this article in cooperation with the Secretary of the Natural Resources Agency.

Why Hydrilla?

- In 1977, the California Legislation established a statute in the Food and Agricultural Code that mandates an on-going statewide survey program and eradication of Hydrilla where feasible, to mitigate irreparable damage to the agricultural industry and California's streams, lakes, and waterways.

It is unlawful to possess hydrilla in California

- Food and Ag Code sec 6048 (b):
 - It is unlawful to produce, propagate, harvest, possess, sell, or distribute hydrilla as such or incidental to the sale of fish, aquatic plants, or other hosts or possible carriers of hydrilla. First offense is an infraction, second offense is a misdemeanor.

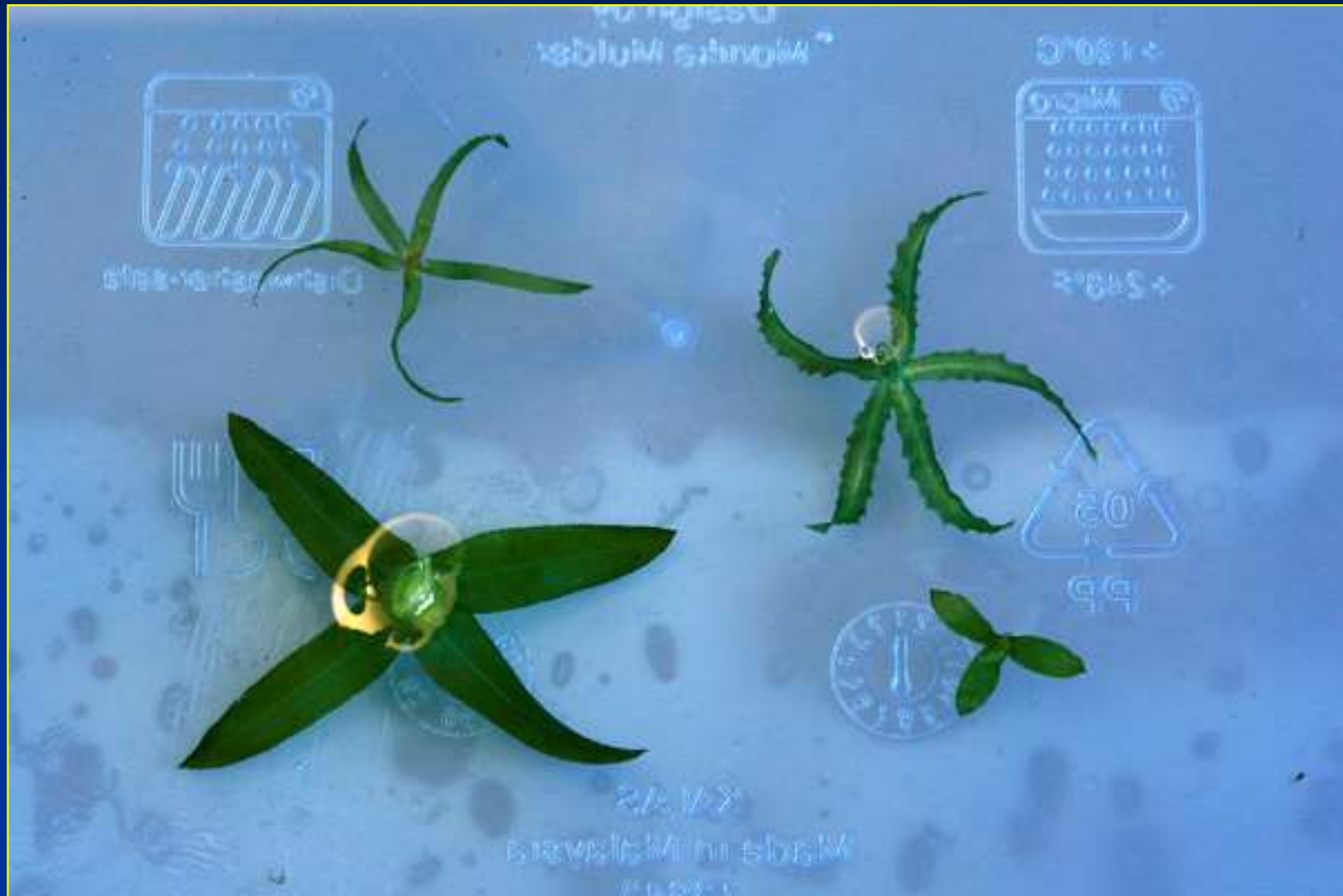
Funding – State & Federal

- Keeping California waterways clear is a collaborative effort.
- US Bureau Reclamation: \$132,000
- CA Dept. Water Resources: \$612,000
- Harbors & Watercraft fund: \$1.5 million

Aquatic Weed ID

Submersed plants with whorls of single leaves

Highly variable!



Aquatic Weed ID

Hydrilla, *Hydrilla verticillata*



Aquatic Weed ID

Hydrilla, *Hydrilla verticillata*



Aquatic Weed ID

Hydrilla, *Hydrilla verticillata*

HIGHLY VARIABLE!



Aquatic Weed ID

Hydrilla



Aquatic Weed ID

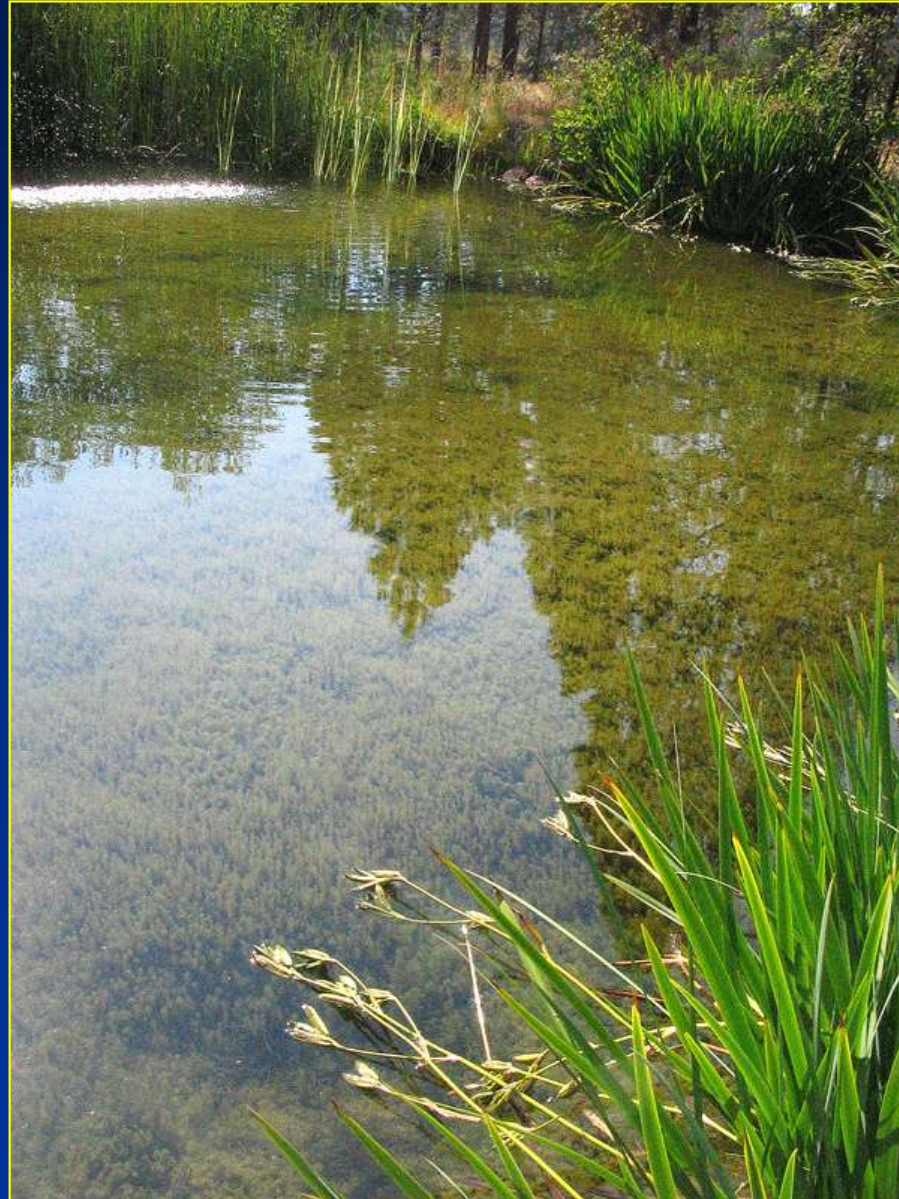
Hydrilla, *Hydrilla verticillata*



Aquatic Weed ID

Hydrilla, *Hydrilla verticillata*

Foothill pond
6'-10' deep



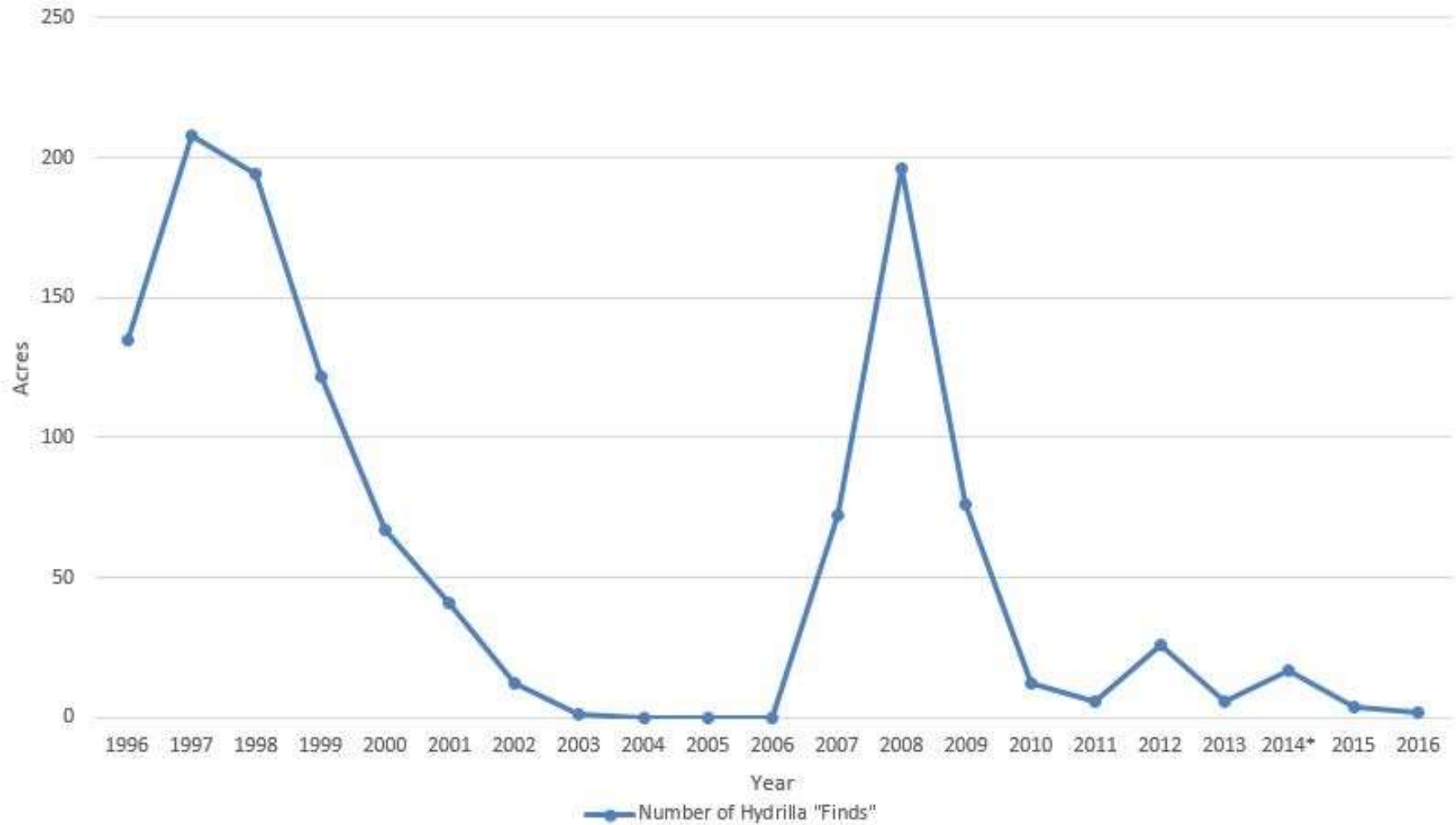
Control Efforts



Treatment protocol

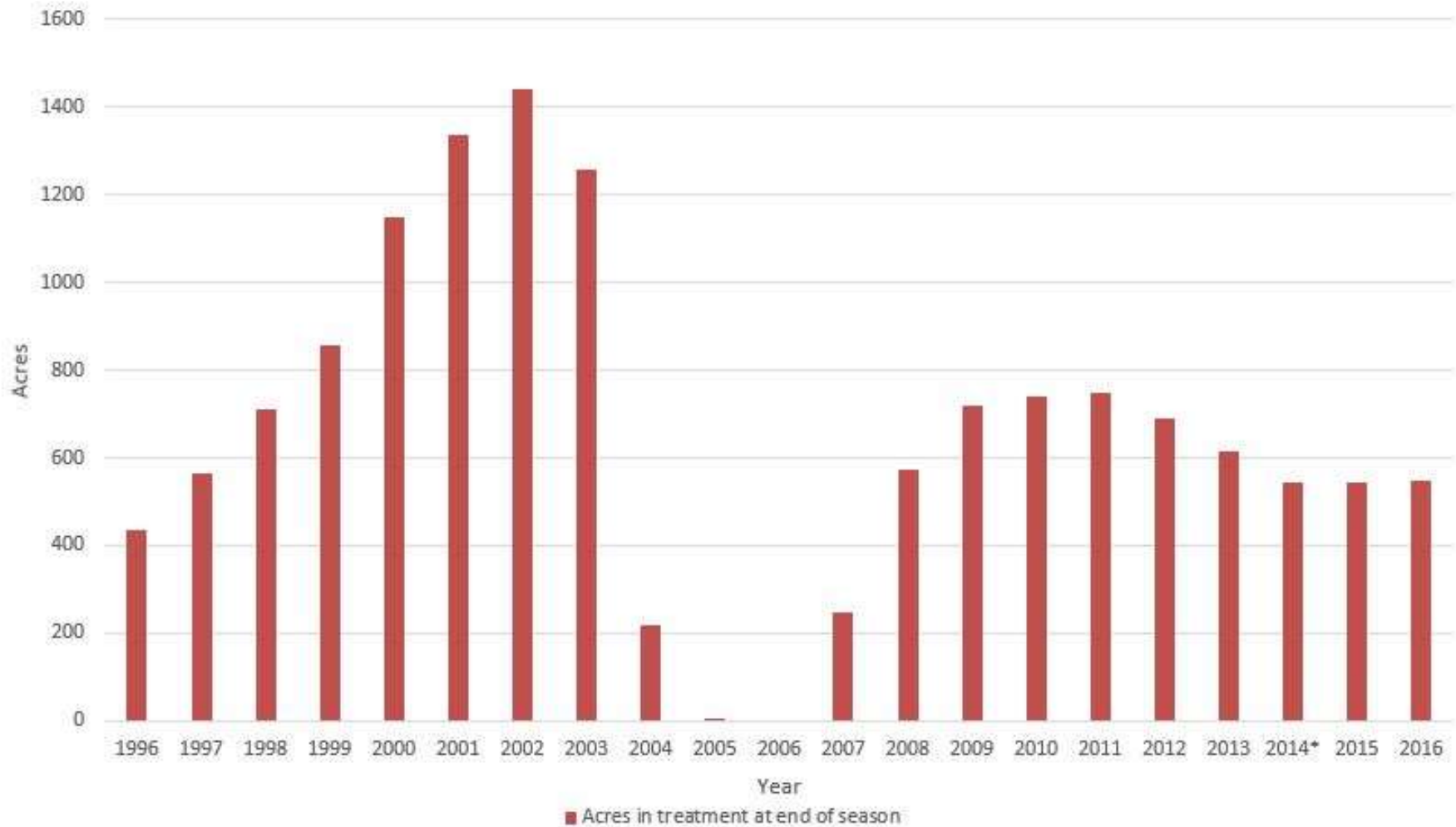
- Detection of a rooted plant establishes a new treatment area with a minimum of 5 acres being treated (per pesticide label).
- Immediate treatment with a contact herbicide to burn down plants and limit fragmentation and spread. Follow up with systemic fluridone treatments.
- Historically, treatment was removed after 3 years of no plant finds. After areas showed resurgence and failed eradication, CDFR worked with researchers to determine a more successful schedule of treatment and monitoring.

Number of Hydrilla "Finds"



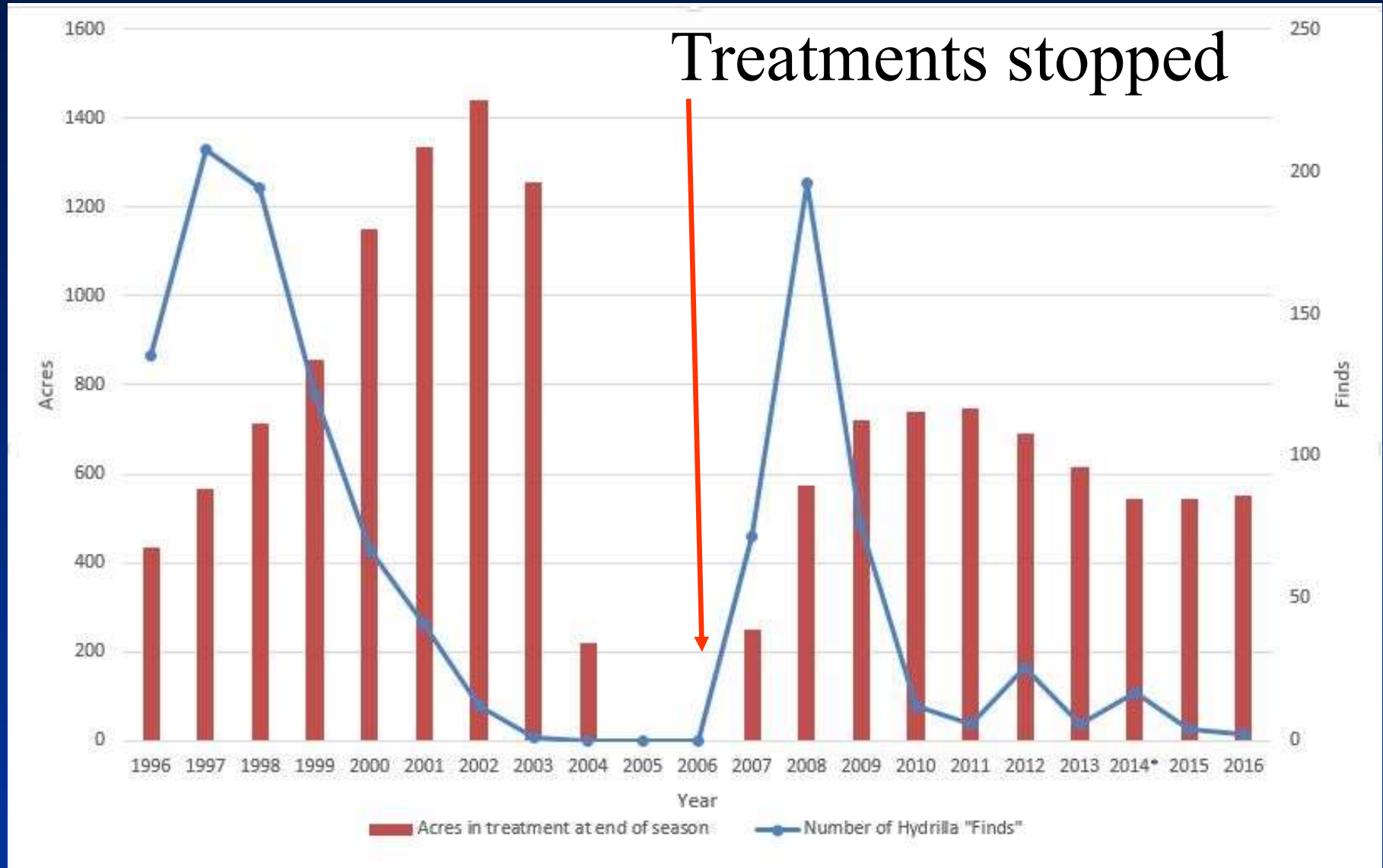
No plants found 2004-2006

Acres in treatment at end of season



Historically stopped treatment
after 3 years no finds.

“Eradication”



Protocol extended to continue treatments a minimum of 7 years of no finds.

Chemical Control



Chemical Control



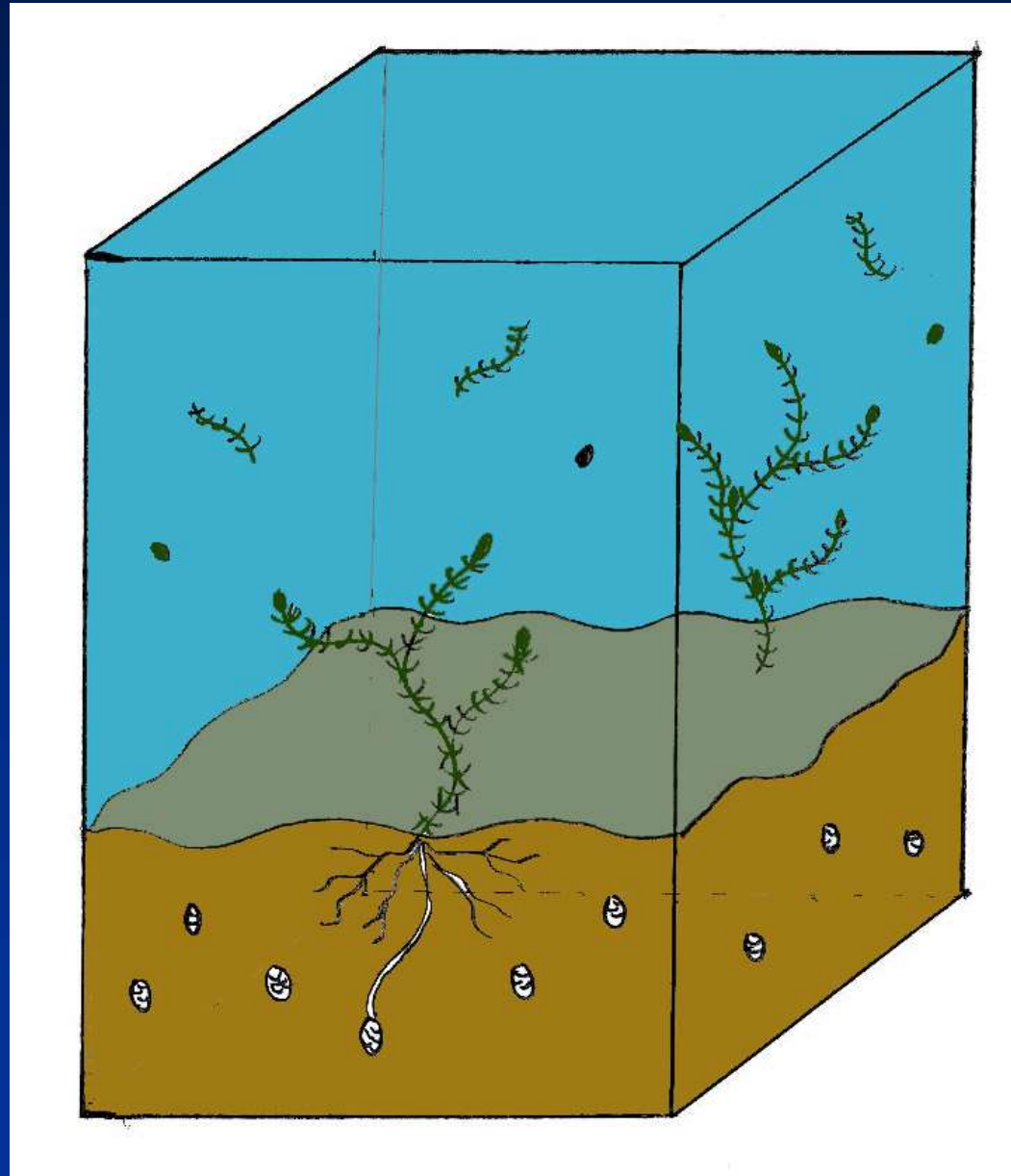
Chemical Control



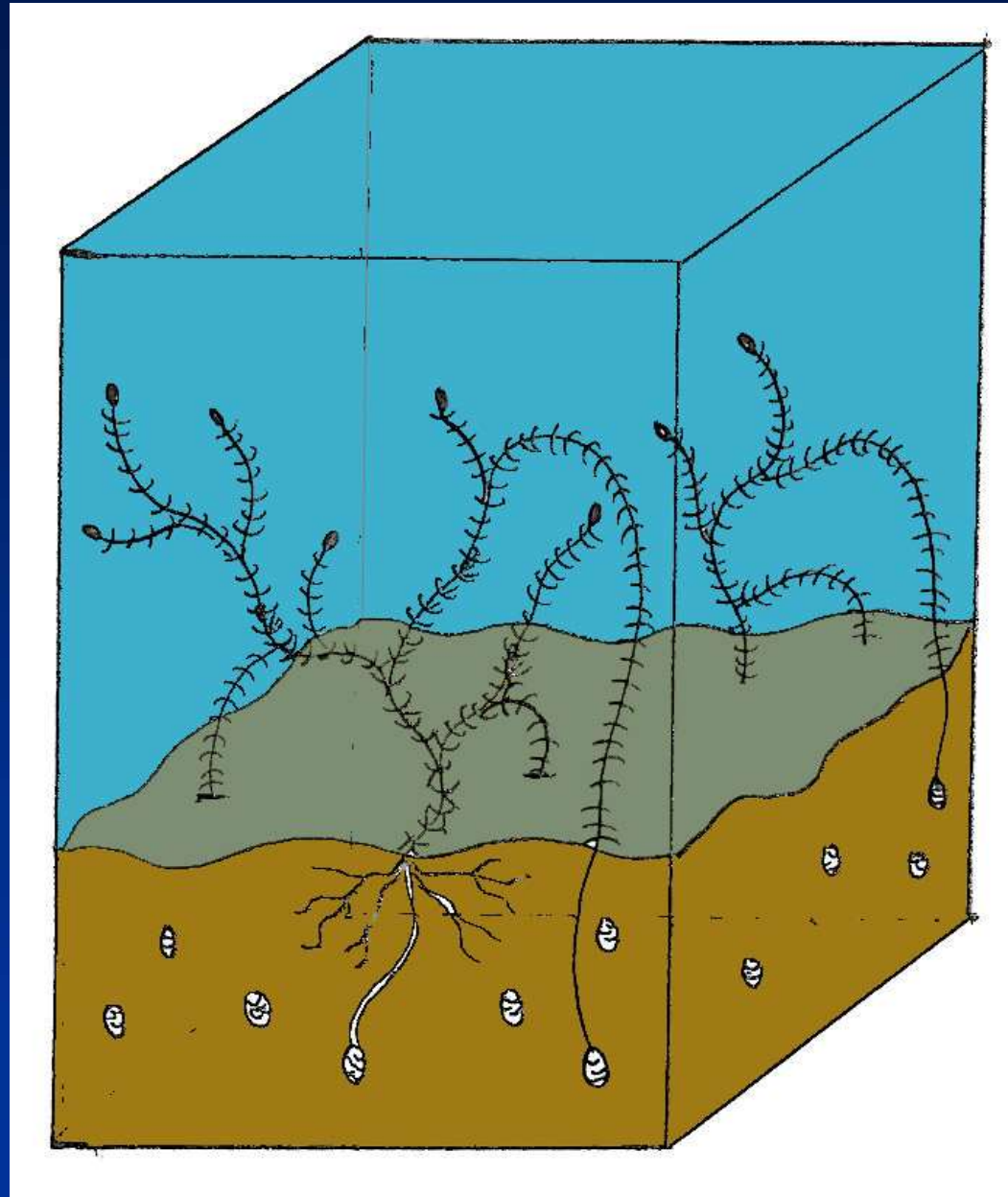


Healthy Hydrilla vs. fluridone damage

Tubers, turions and fragments

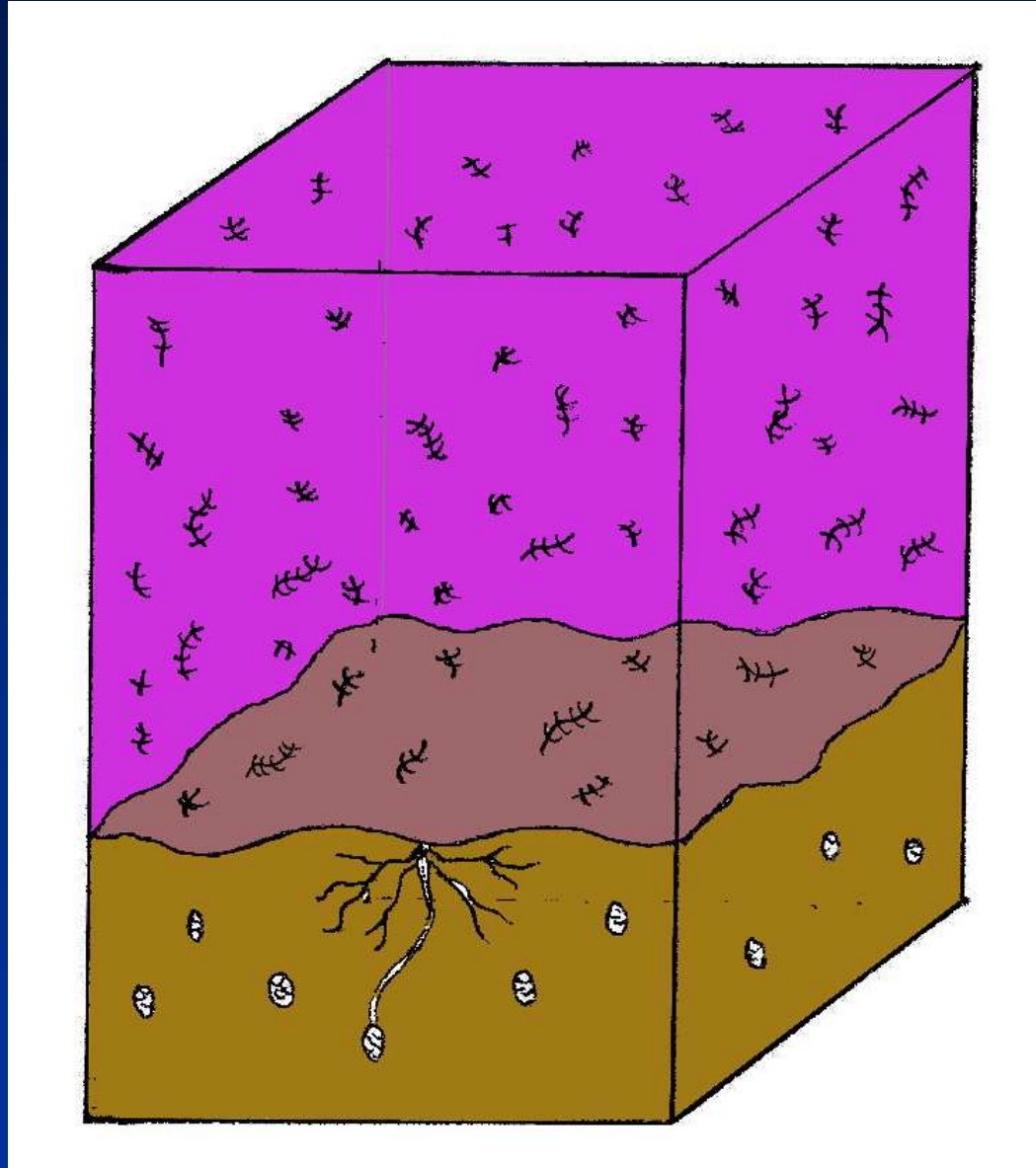


Chemical Control



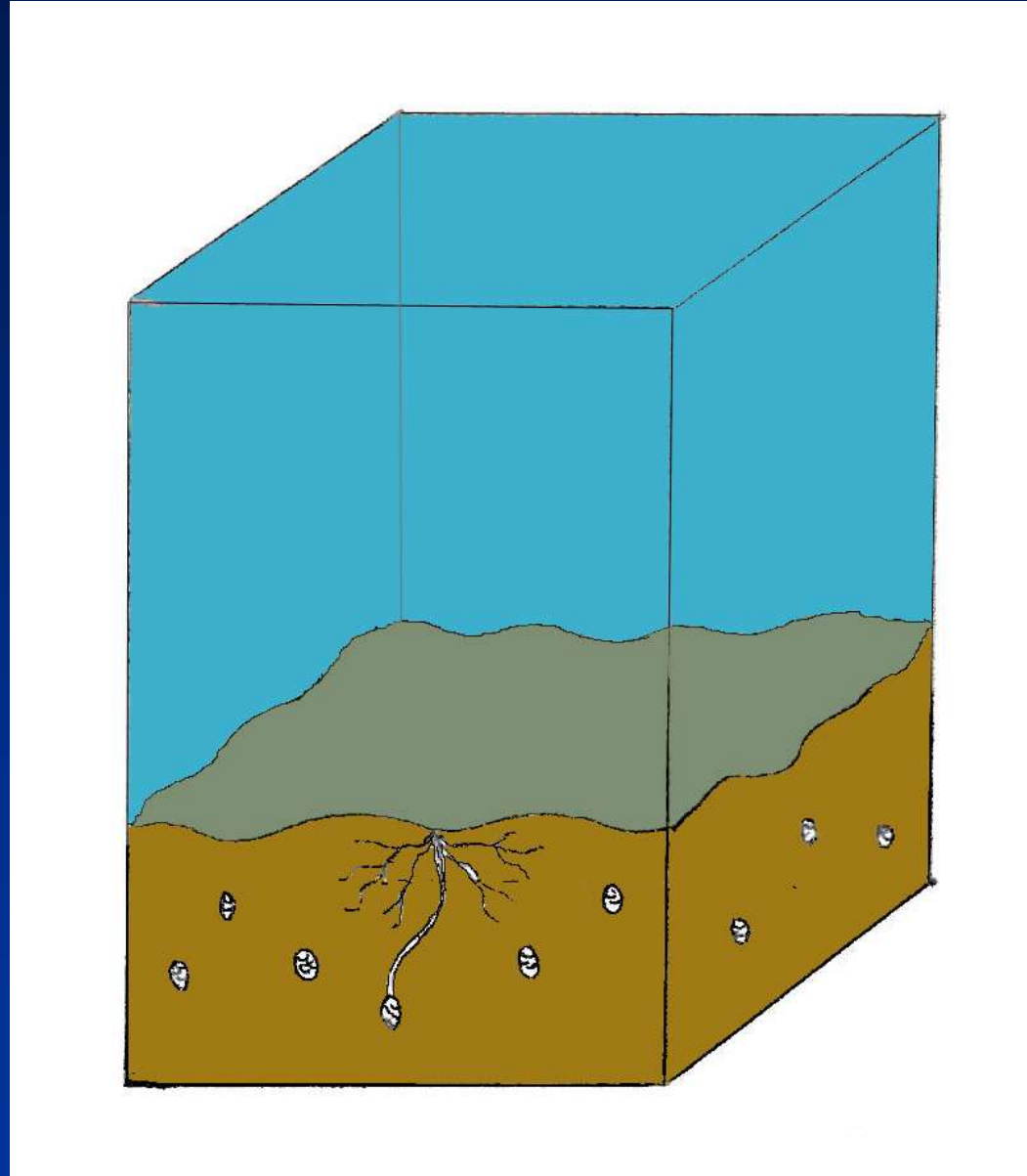
Chemical Control

Copper based contact herbicide burns down plants



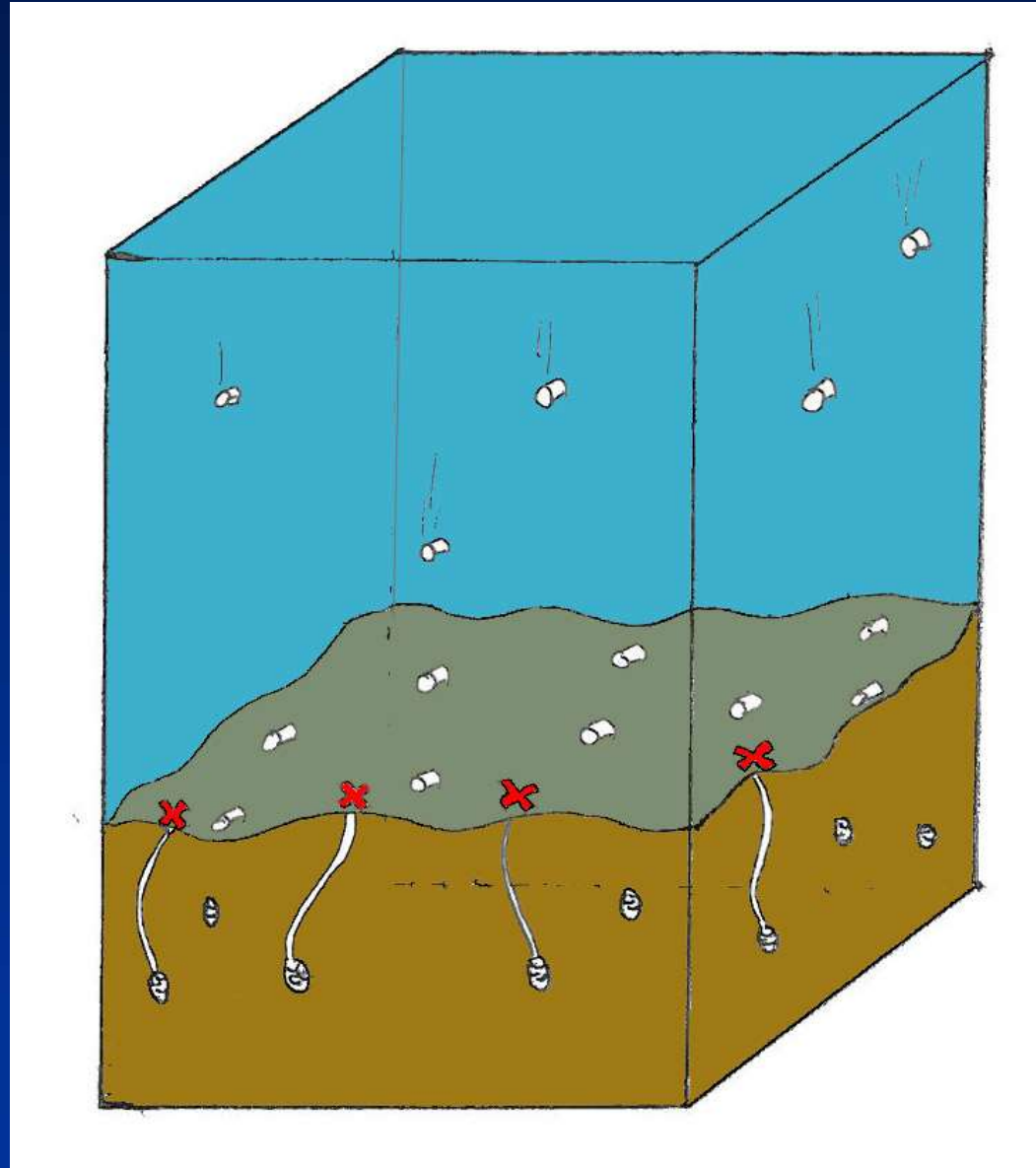
Chemical Control

Tubers and root crowns in sediment are unscathed.



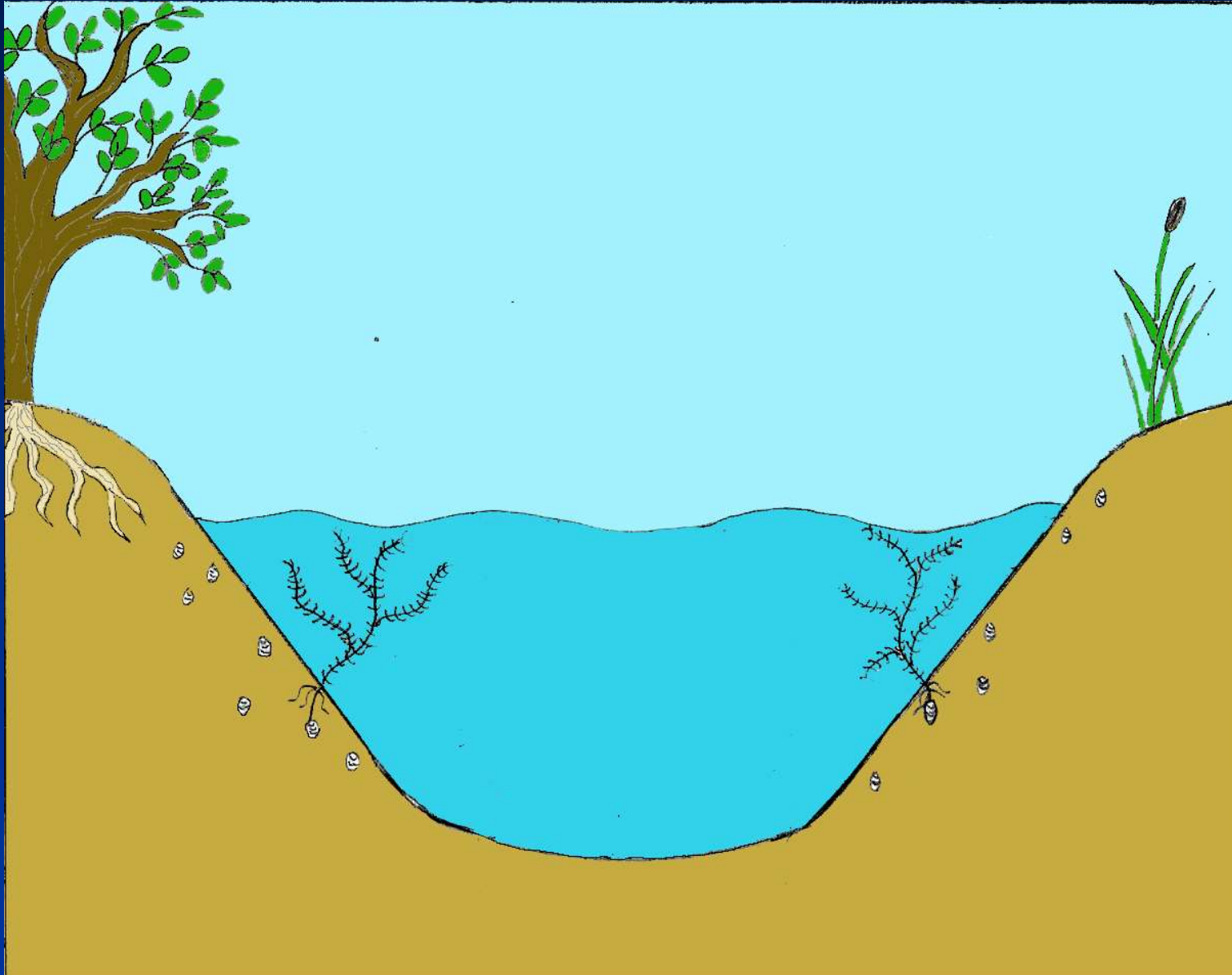
Chemical Control

Systemic herbicide in slow release pelleted form acts as a pre-emergent.



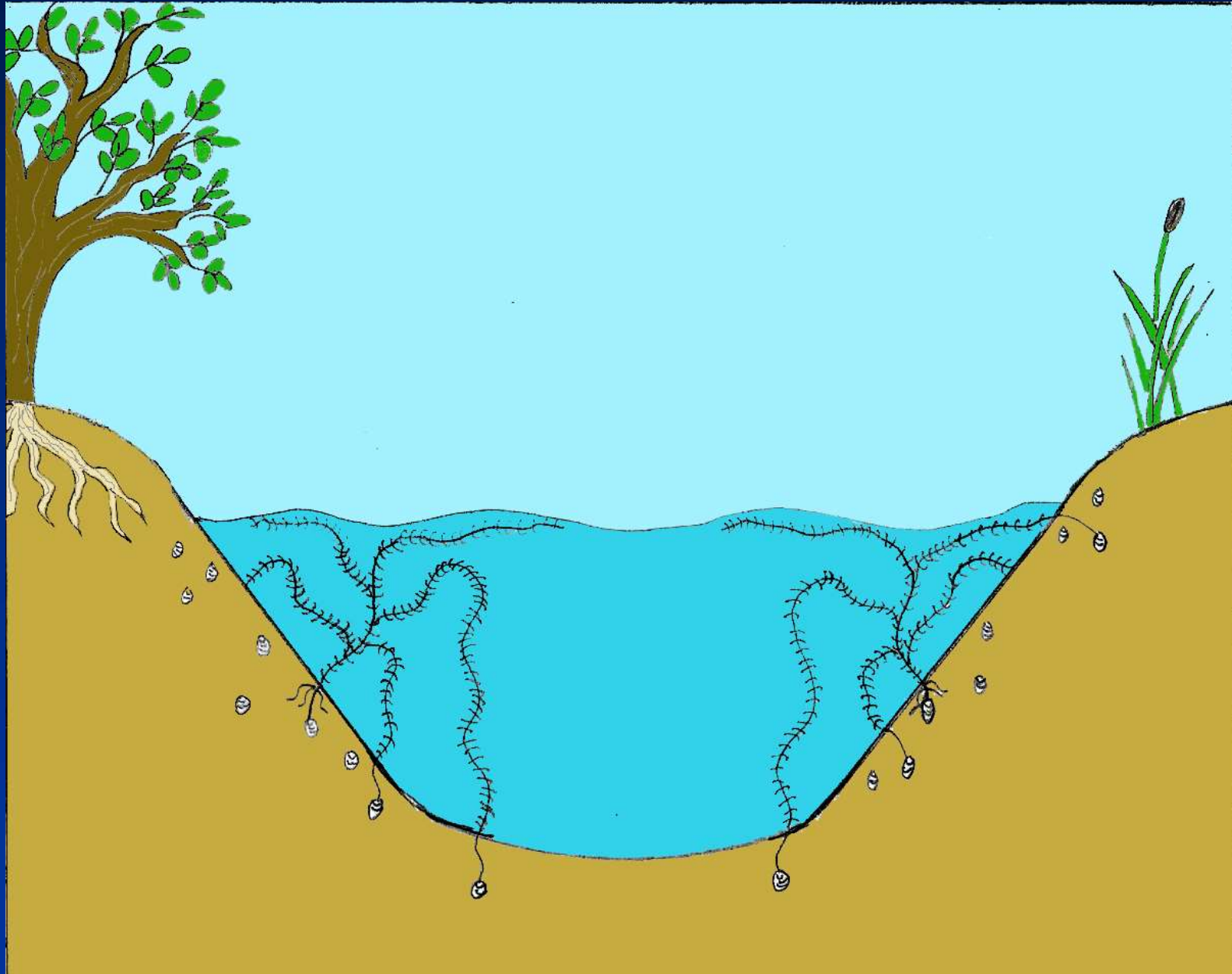
Chemical Control

Water level considerations



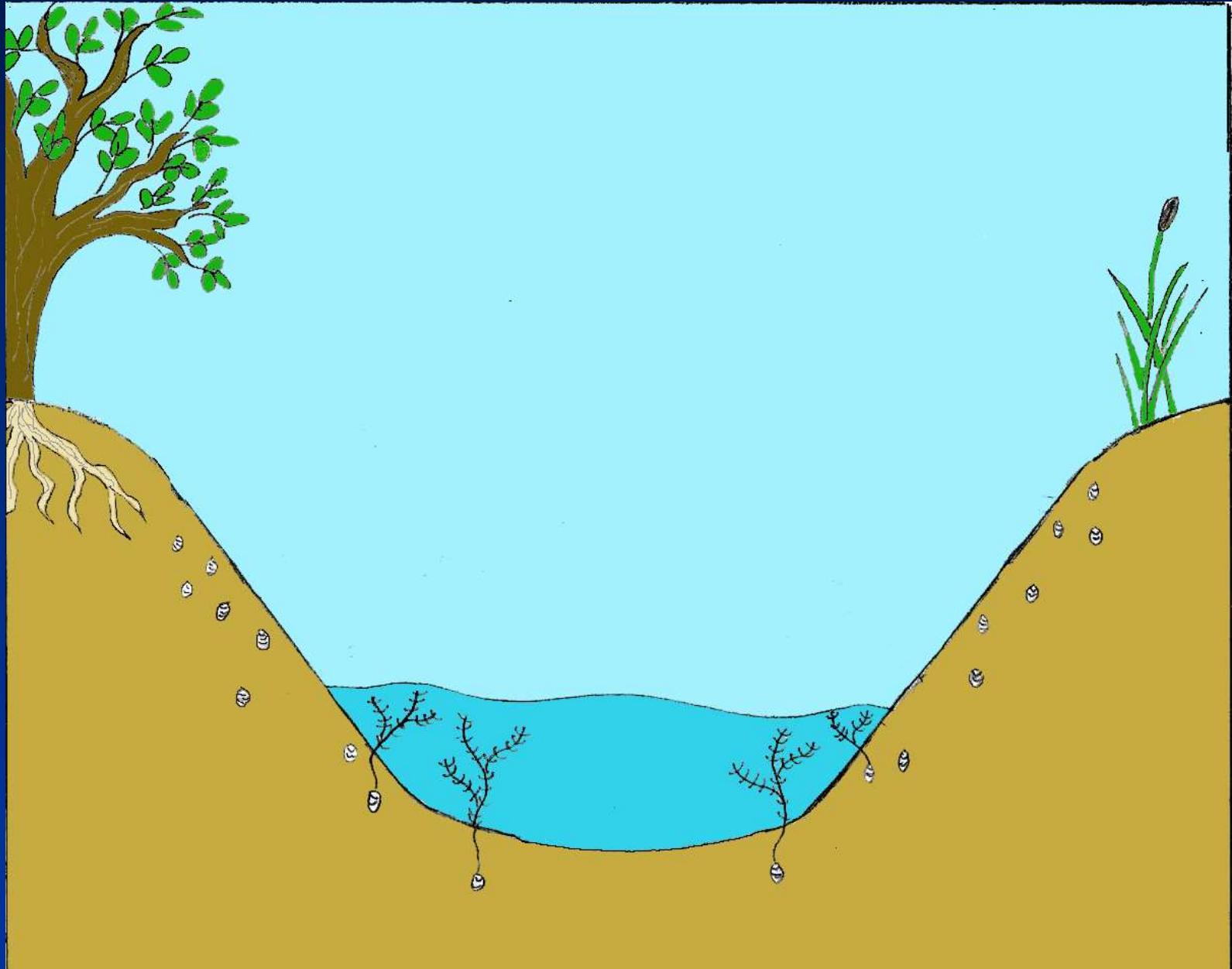
Tuber Production

Tubers deposited up to waterline.



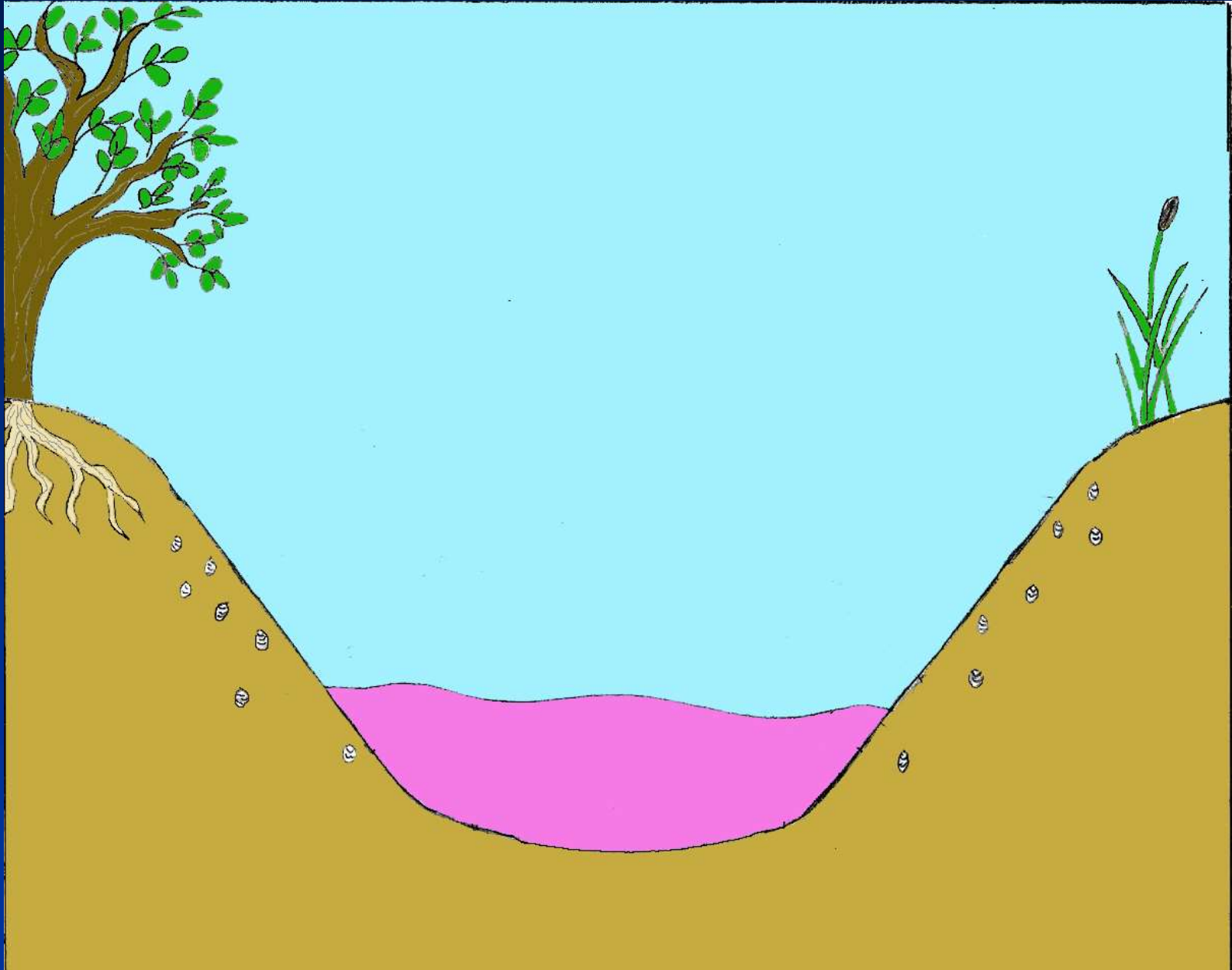
Low Water

Some tubers sit safely in the soil above the waterline.

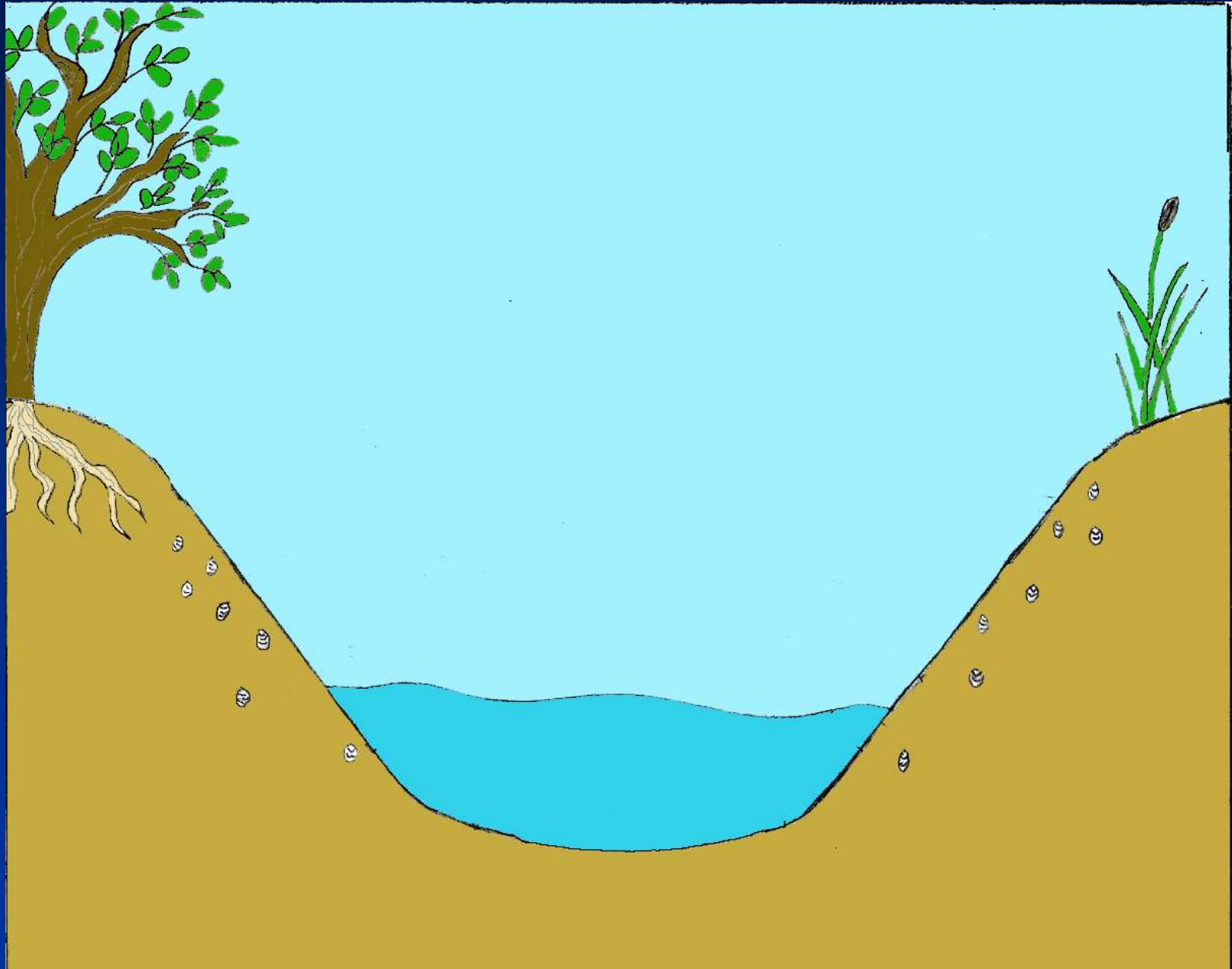


Chemical Control

Aquatic applications only impact submerged plants.

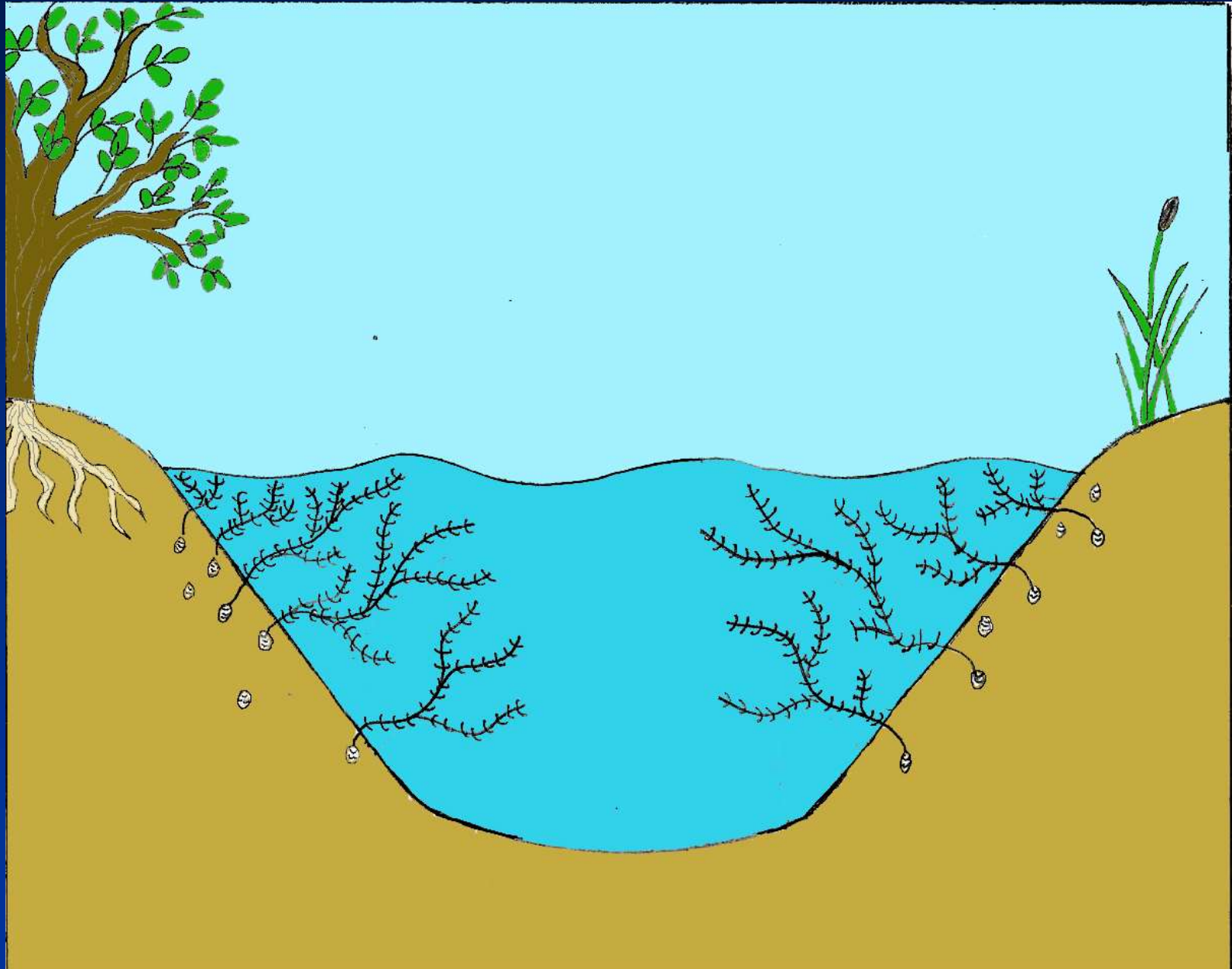


Reduce Tuber Bank



Full Pool

Protected Tubers Sprout



Chemical Control



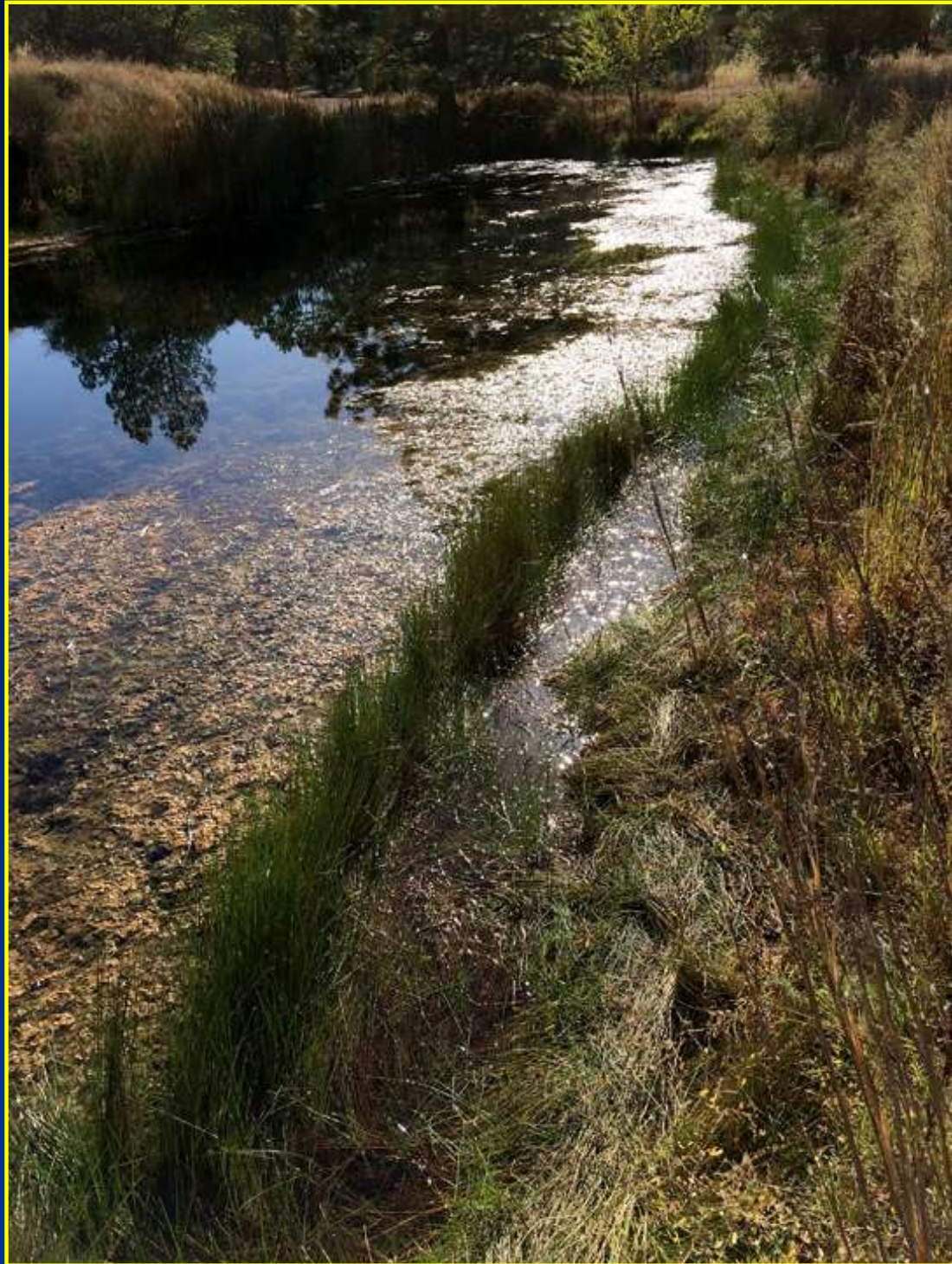
Low water during drought years left bank high and dry

Chemical Control



High water resulted in a fairy ring of new hydrilla growth from the banks where chemical could not be applied during drought.







If you see Hydrilla, Report it!

Visit CDFA's online pest reporting tool to report and get more information

