AQUATIC VEGETATION

A technology to address water quality issues
Research Factsheet COHA7-A

What kinds of aquatic vegetation are there?

Macrophytes are large, multicellular vascular plants, growing either on the surface or underwater. There are also algae that grow in ponds and photosynthesize, but they are not plants: they lack the vascular structure of true plants. Common examples of aquatic vegetation that are found in ponds are *Chara spp.* (green charophyte algae), *Lemna spp.* (duckweed plant), and *Eichhornia crassipes* (common water hyacinth plant). These organisms are different than phytoplankton, which are small, often unicellular organisms that can photosynthesize. Phytoplankton is a general term, can include algae or even bacteria (e.g., cyanobacteria) species, which can be the cause of unsightly blooms.

Water hyacinths covering a pond.

Submerged macrophytes in a very clear pond.

When is aquatic vegetation useful?

In some cases, macrophytes/algae can be a good thing! These organisms take up nutrients and add oxygen to your pond, improving water quality. They can also provide a healthy habitat for fish and prevent undesirable plants and algae from overtaking your pond. In recent research, whole pond covering with water hyacinths improved water quality in an irrigation pond by blocking light, preventing serious cyanobacterial blooms. Pickerelweed (*Pontedaria cordata*) is an attractive native plant that can decrease turbidity, filter out nutrients, and improve overall pond water quality.

Pickerelweed, duckweed covering trial, a close-up of duckweed.

What are the drawbacks?

Macrophytes and algae can overtake a pond, and there are a couple of issues with this: first, there may be filter or intake clogging if the wrong species of plants take hold (e.g., filamentous types). Second, to remain effective, the plants should be harvested regularly, or decaying plant material can put the nutrients back into the pond. Some species can be invasive under certain conditions (e.g., water hyacinth), so make sure the chosen plants will not cause a problem with downstream waters.

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