



MANAGING LAKE VEGETATION

An estimated 400 lakes are scattered throughout the Pinelands. Most of these lakes are dammed stream impoundments that are home to a variety of native and rare aquatic vegetation and amphibians. Often it is the rare and native aquatic plants that people target for control with herbicides.

Many residential communities are built around lakes such as Medford Lakes, Marlton Lakes, and Bamber. These communities rely on the lake for recreation such as swimming, fishing, and boating, and typically the lake association or municipality is responsible for controlling "nuisance" vegetation that residents feel impede these recreational activities.

The targeted plants consist mostly of Pondweeds, Fanwort, Eurasian Milfoil, Bladderwort, Naiad, Water Lily, Cattails, *Elodia* spp., *Lemna* and *Wolffia* spp. The common names of these plants represent only a genus within which there may be many species. Some species

that may be referenced by these names are very rare and are officially under the protection of the Pinelands Comprehensive Management Plan (CMP), and others are rare enough to qualify as "plant species of concern". PPA tallied 26 of 54 native species of plants included in this list of targeted species that are of conservation concern. Only three within that total are non-native.

Herbicides are regularly used to control the aquatic vegetation in these lakes. The use of herbicides can completely wipe out a whole population of rare plants. The commonly used pesticides include: fluridone, copper sulfates, copper, diquat di-bromide, endothall, glyphosate, imazapyr, and 2,4-D. Many of these products have unintended effects on non-target organisms, such as amphibians, by reducing or eliminating plants that are critical to a food chain or directly harming aquatic animals.

Lake associations and municipalities can manage the plants in lakes without having to use treatments that remove all the vegetation in a lake, especially when the vegetation is critical to the unique ecological system in the Pinelands.

Some appropriate management steps include:

1. Reducing nutrient overload into aquatic waterways by minimizing lawns and fertilizer use.
2. Establish a "no fertilizer zone" of at least 30 feet around the lake.
3. Create a littoral shelf of native, rooted plants that can absorb nutrients.
4. Mechanically raking/cutting the vegetation immediately within the swimming or fishing areas.
5. Drawing down the lake where vegetation is exposed in immediate swimming areas.
6. Educating residents that the vegetation is a natural part of the environment and doesn't need to be removed.

Mechanical harvesting is similar in cost to herbiciding. According to New York State's Lake Management Guidelines, mechanical harvesters can be leased for \$150-

continued on page 2

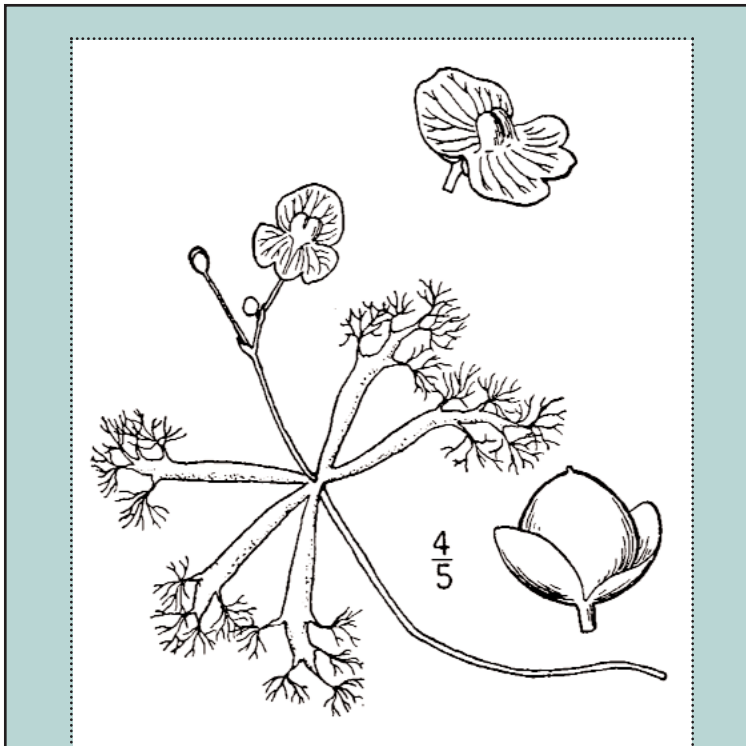


A residential community lake.

\$300/hour with an additional fee for set-up, transport, and siting of about \$300. Typically a mechanical harvester can cut approximately one acre of aquatic plants every 4-8 hours. These guidelines also provide the estimated cost for herbiciding, which is calculated at approximately \$200-\$400 per acre of treated area per treatment.

Neither the Pinelands Commission nor the NJ DEP require a pre-and post-vegetation survey, listing of target vegetative species using their Latin name as opposed to common name, or proof that the pesticides are not affecting an outlet structure such as a stream. The Pinelands Commission, which has the final say in the approval of these applications, should require more information from applicants to ensure water quality and native plants and animals are protected. In the meantime, residents and lake associations can make a conscious effort to reduce their impact on a critically important element of Pinelands aquatic ecology by following the recommendations provided above.

For more information on pesticides and recommendations to reduce their use, read PPA's white paper on our website, www.pinelandsalliance.org.



Small Floating Bladderwort *utricularia radiata*
Habitat: floating, when flowering, in lakes and ponds.

USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern

How About Those Crazy Bladderworts?

Bladderworts get the first part of their name from the tiny bladder-like traps they use to catch and digest minute creatures, mostly insects and crustaceans. "Wort" (pronounce as in "hurt") comes from the Middle English and just means "plant." Scientists have puzzled over these plants for years, and they are intimately connected with the web of life here in the Pinelands.

Compared to the two other types of carnivorous plants in the Pinelands -- the one native Pitcher-plant and the three Sundews -- Bladderworts are more diverse. Botanists have documented all fourteen species known in New Jersey within the Pinelands region.

Our Bladderworts range quite a bit in size. The flowers of the Floating Bladderwort grow from the center of a pontoon system that looks like inflated spokes and the hub of a wheel, five inches in diameter. The flower stalks can be up to about nine inches tall. By contrast, the flowers on the very rare Dwarf White Bladderwort measure less than one-eighth of an inch and seem to grow without stalks at all.

Dwarf White is the only white-blossoming Bladderwort we have. Most of the others sport eye-catching yellow flowers, but several display in shades of purple. The species that have flowers above the water surface are pollinated by a variety of flying insects, but some have submerged or subterranean flowers that are self-pollinating.

Biologists don't understand Bladderworts. It seems they do not have roots. Some float freely, providing shelter for a multitude of aquatic organisms, and some are partly embedded in wet soil or muck. Their leaves are not necessarily distinct from their stems. "But most to be wondered at are the traps which present an astounding degree of mechanical delicacy depending on a fineness of structure scarcely equaled elsewhere in the plant kingdom." (*The Carnivorous Plants*, Francis Ernest Lloyd).

Indeed, the little traps or "bladders" defy imagination. A mechanical diagram that attempts to represent the actions performed by an individual trap in capturing a prey item looks like a classic Rube Goldberg machine (see p. 267). There are hinges, springs, strings, levers, a plunger, a pulley, and even an electric motor!

Some Bladderworts are abundant in the Pinelands, enough to be considered a nuisance, at least by some people in some places. But nine species are rare and worthy of conservation action. Six of these are officially protected under the CMP. Some of them share the same habitats with the common species, so it's good to take a careful approach to control measures -- if indeed we want to control these wonderful plants at all.

Legislation Alert: A823 Support ORV Legislation

PPA, along with New Jersey Conservation Foundation, Great Egg Harbor Watershed Association, NY-NJ Trail Conference, Buena Vista Mayor Chuck Chiarello, and several other conservation and sportsmens groups, 70 mayors throughout the state and the League of Municipalities have made significant progress in persuading state leaders to create off-road vehicle legislation. This legislation would increase fines for illegal riding on conservation lands and would mandate tagging and registration for all off-road vehicles (dirt bikes, ATVs, and snowmobiles).

Assemblyman Reed Gusciora (D-15) first introduced the ORV legislation in May 2007. He was successful in getting the Assembly Transportation Committee to favorably approve the pending bill. Unfortunately, due to the elections, the Senate version of the bill by Senator Bob Smith (D-17) was introduced in early December, and both versions of the bill did not have sufficient time to come before both the Senate and Assembly.

Assemblyman Gusciora has re-introduced the ORV bill (A823), which has been referred to the Assembly Transportation committee again. PPA needs your help to make sure the legislators pass this bill during this session.

Please contact the following sponsors of the bill and express your support:

Assemblyman Reed Gusciora (D-15) (609) 292-0500
Assemblyman Paul Moriarty (D-4) (856) 232-6700
Assemblyman John Wisniewski (D-19)
(732) 316-1885

Please also call or email your state representatives (Assembly and Senate). You can find out their contact information at:

<http://www.njleg.state.nj.us/members/legsearch.asp>

For more information about the ORV legislation, please contact Jaclyn Rhoads at (609) 859-8860 ext. 18 or jaclyn@pinelandsalliance.org.

Water Allocation Workshop Groundwater Supply and Ecosystem Needs

March 6th & 12th and April 8th & 17th
7:00 to 9:00 PM
Pinelands Preservation Alliance Office

Hosted by
Pinelands Preservation Alliance (PPA)

Presenter: Richard Bizub, Geologist &
Director for Water Programs,
Pinelands Preservation Alliance

This workshop will focus on the State's water allocation process, and how groundwater withdrawals for public water supplies or golf courses can impact stream flow and water quality of streams, rivers and wetlands.

A hands-on component will show workshop participants how to analyze the various NJDEP documents to determine loss of surface water flow and potential impacts to threatened and endangered species.

Who should attend: This workshop is geared toward members of watershed associations, land trusts, environmental commissions, planning boards and interested citizens.

Registration Required: The workshop is free, however registration is required.

To register, call PPA directly at (609) 859-8860 ext. 16. For additional information contact: rich@pinelandsalliance.org. Please register early since seating is limited and printed materials will be prepared for registrants.

**Location: Pinelands Preservation
Alliance Office**
17 Pemberton Road
Southampton, NJ 08088

We are located just off of Route 206 on Pemberton Road (right side), heading west toward Vincentown.

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- A Sponsor will receive an *Exploring the Pine Barrens of New Jersey* map
- A Patron will receive a copy of *Exploring the Pine Barrens of New Jersey* book
- A Benefactor will receive a Pinelands Botanical Print by Robin Jess
- A member of the Chairman's Circle will receive a personalized tour of the Pinelands



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MANAGING LAKE VEGETATION



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