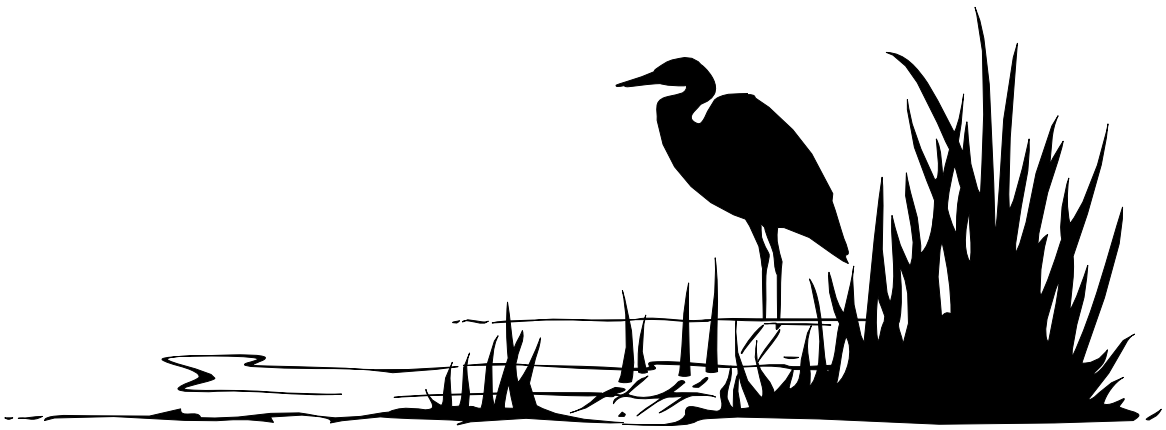
LOWER PINE LAKE
SENSITIVE AREA SURVEY REPORT
AND MANAGEMENT GUIDELINES



This document is to be used
with its companion document
"Guidelines for protecting, maintaining,
and understanding lake sensitive areas"

Lower Pine Lake (Polk Co.)
Integrated Sensitive Area Survey Report

Date of Survey: 03 September 1998 Number of Sensitive Areas: 1

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Lake Sensitive Area Survey results identified **the entire littoral zone** of Lower Pine Lake merits special protection of the aquatic plant habitat. Lower Pine Lake is an oligotrophic lake with limited nutrients to support aquatic plant habitat resulting in a very sparse distribution increasing the importance of protecting what little vegetation is occurring within the littoral zone around the entire perimeter of the lake. Since vegetation is sparse or absent throughout the entire lake all native aquatic plants should be viewed as providing critical habitat and should be protected against removal or herbicide treatment.

One survey done in 1996 documented the presence of Purple Loosestrife on Lower Pine Lake. The most recent survey however does not show that purple loosestrife was present. The threat of Purple Loosestrife is always a concern and should be dealt with immediately. Methods for control are to remove the entire plant before it produces seeds or by cutting the flower head and spraying with and approved herbicide. You should contact the Department before any of these methods are implemented.

The reader should consider that any buffer that does not extend back from the waters edge at least 35' on flat terrain is not providing adequate protection for water quality and should be expanded to at least 35'. Local zoning ordinances and lakes classification systems have tried to provide better guidelines pertaining to buffer widths and set backs based on lake type. Landowners are encouraged to go beyond the minimum requirements laid out by zoning and consider extending buffer widths to beyond 35' and integrating other innovative ways to capture and reduce the runoff flowing off from their property while improving critical shoreline habitat. Berms and low head retention areas can greatly increase the effective capture rate from developed portions in addition to that portion captured within the buffer.

Site conditions may dictate that a buffer has to be much wider than 35' to be effective at capturing the sediments and nutrients running off the developed portions of the shoreline. **If the shoreline is steeply sloped (>7%slope) as is the case on most of the shoreline on Lower Pine Lake greater widths should definitely be used.**

No mowing should take place within the buffer area (with the exception of a narrow access trail and small picnic area), and trees and shrubs should not be cut down even when they become old and die; because they provide important woody debris habitat within the buffer zone as well as aquatic habitat when they fall into the lake.

The following is a brief summary of the Lower Pine Lake sensitive area site and the management guidelines. Also, the "Guidelines for Protecting, Maintaining, and Understanding Sensitive Areas" provides management guidelines and considerations for different lake sensitive areas (Attached).

I. Aquatic Plant Sensitive Areas

Sensitive area A includes the entire littoral zone of Lower Pine Lake; because, the lake contains such limited aquatic plant habitat that every remaining little bit should be protected and maintained.

Shoreline land use practices and in water disturbances or removals pose the greatest threat to this sensitive and intolerant aquatic plant community. The addition of nutrients from poorly buffered shoreline development on steep sloping banks could cause the loss of the intolerant sparsely distributed aquatic plant community which could shift to a much higher density more tolerant plant community that could result in navigational obstructions and dramatic reductions in water quality. The addition of a single pound of phosphorus can do more than produce large leaf aquatic plants it can produce up to 500lbs of algae per pound of Phosphorus added. If each mowed unbuffered shoreline area adds a half pound of phosphorus a year and more people remove their buffers the cumulative longterm impacts may eliminate one of the last oligotrophic lakes in Polk County.

Management guidelines for aquatic plant sensitive areas are (unless otherwise specifically stated):

1. Since aquatic plant densities are never great enough to obstruct navigation on Lower Pine Lake There is no need to create or maintain navigational access channels by removing or treating aquatic plants. Chemical treatments should be discouraged and any removals of native species should be limited to removal by hand raking or pulling in and around immediate dockside or pier areas. (Current laws limit activities which impact or remove aquatic vegetation to a 30' width in and around the dock and this 30' width must include the area under the dock and can not be moved to another section of shoreline until such time that the previously altered area has been fully restored).
2. Prohibit littoral zone alterations covered by Wisconsin Statutes Chapter 30, unless there is clear evidence that such alterations would benefit the lake's ecosystem. Rock riprap permits should not be approved for areas that already have a healthy native plant community stabilizing the shoreline and property owners should not view riprap as an acceptable alternative in these situations.
3. Leave large woody debris, logs, trees, and stumps, in the littoral zone to provide habitat for fish, wildlife, and other aquatic organisms.
4. Leave an adequate shoreline buffer of un-mowed natural vegetative cover and keep access corridors as narrow as possible (preferable less than 30 feet or 30% of any developed lot which ever is less).
5. Prevent erosion, especially at construction sites. Support the development of effective county erosion control ordinances. The proper use of Best Management Practices (BMP's) will greatly reduce the potential of foreign materials entering the waterway (i.e. silt, nutrients).
6. Strictly enforce zoning ordinances and support development of new zoning regulations where needed.
7. Eliminate nutrient inputs to the lake caused by lawn fertilizers, failing septic systems, and other sources.
8. Control exotic species such as purple loosestrife.

Resource Value of Site A

Sensitive area A encompasses the entire shoreline of Lower Pine Lake.

This area provides important habitat for centrarchid (bass and panfish) and esocid (northern pike) spawning and nursery areas. This area also provides important habitat for forage species. Wildlife also are reliant upon this area for habitat. Eagles, loons, herons, waterfowl, songbirds, furbearers, turtles, and amphibians benefit from this valuable habitat.

The emergent and submergent plant community structure of Sensitive area A includes: **Emergents;** bur-reed (Sparganium sp.) and bulrush (Scirpus sp.). **Floating leafed**; watershield (Brasenia schreberi). **Submergents;** coontail (Ceratophyllum demersum), muskgrass (Chara sp.), northern milfoil (Myriophyllum sibiricum), wild celery (*Vallisneria americana*), creeping spearwort (Ranunculus flammula), large leaf pondweed (Potamogeton amplifolius), variable pondweed (P. gramineus), white stem pondweed (P. praelongus), richardson's pondweed (P. richardsonii) and robbin's pondweed (P. robbinsii).

Chemical treatments and mechanical removal efforts should be limited to navigation channels only.