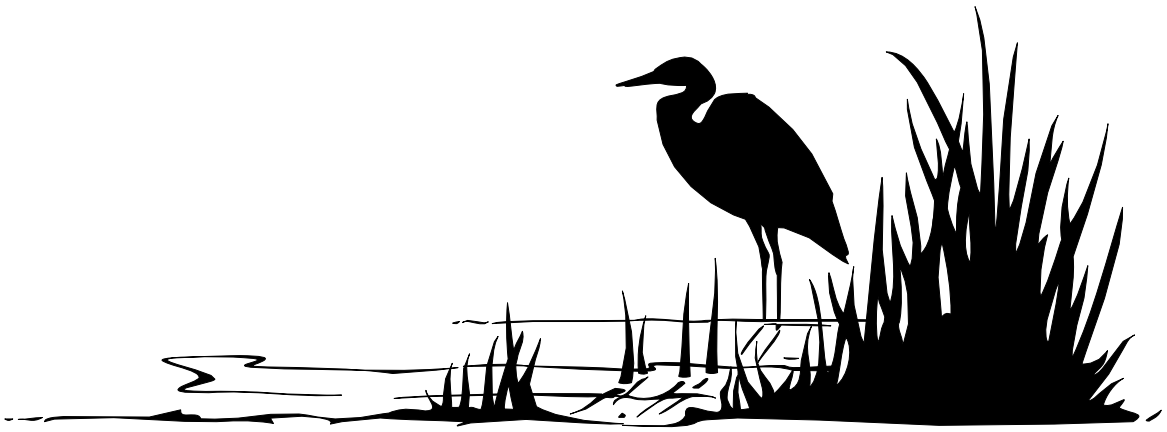
BIG McKENZIE LAKE
SENSITIVE AREA SURVEY REPORT
AND MANAGEMENT GUIDELINES



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

Big McKenzie Lake Sensitive Area Survey Report (Burnett and Washburn Co)

Date of Survey: 9 September 1999 Number of Sensitive Areas: 4

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Lake Sensitive Area Survey results identified three areas that merit special protection of the aquatic plant habitat under NR 107 & NR 109 and one additional site that deserves protection as critical coarse rock rubble walleye spawning habitat covered as a Public Rights Feature (PRF) within an area designated under a newly emerging program ASNRI (Areas of Special Natural Resource Importance) designations and protection program. One additional site is under consideration or review as it was previously identified as providing critical habitat or shoreline stabilization benefits to combat shoreline erosion and was not included in the most recent survey results. If human induced impacts have resulted in a loss of functional values attempts should be made to restore full function of the area by minimizing aquatic plant removals and disturbance. If successful this area should be restored to full status as a sensitive area. A follow up field inspection should be completed in 2006/2007 with final updates integrated into the report.

During this survey there were documented occurrences of Purple Loosestrife in Sensitive Area C at the very southeast corner of the lake. 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 an approved herbicide, also before the plant produces seed. 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 ground 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) 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 Big McKenzie sensitive area sites 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

The following sensitive areas contain aquatic plant communities, which provide important fish and wildlife habitat as well as important shoreline stabilization functional values. Sensitive areas provide enough important habitat for the Big McKenzie Lake ecosystem that conservation easements, deed restrictions, or zoning should be used to protect them. Management guidelines for aquatic plant sensitive areas are (unless otherwise specifically stated):

1. Limit aquatic vegetation removal to navigational channels no greater than 25 feet wide where necessary, the narrower the better. These channels should be kept as short in length as

possible and it is recommended that people do not completely eliminate aquatic vegetation within the navigation channel; but instead only remove what is necessary to prevent fouling of propellers to provide access to open water areas. Chemical treatments should be discouraged and if a navigational channel must be cleared, pulling by hand is preferable over mechanical harvesters where practical. The maximum width that can be legally cleared with hand pulling or raking without a permit is 30' wide and must include the area in, under, and around existing dock areas and this area can not be moved to another segment of shoreline until the vegetation in the previous area is 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. Exotics are marked with a (*)

Resource Value of Site A

Sensitive area A is located at the northeastern end of Big McKenzie Lake and covers approximately 6000 feet of shoreline extending out as far as 400' in shallower shoreline areas and is centered around the public boat access ramp on the northeast corner of the lake. This area includes a rich diversity of emergent bulrushes and spike rushes and healthy submergent vegetation including numerous large leaf pondweeds providing important shoreline erosion control benefits as well as critical habitat for fisheries and wildlife. A more detailed plant survey should be conducted to better document the unique and sensitive species which occur within this and other areas on Big McKenzie Lake.

This area provides important habitat for centrarchid (bass and panfish) species for spawning, feeding, protection and as a nursery for young. Esocid (northern pike and muskellunge) will use this area for feeding, protection and as a nursery for young. Northern pike will also use this area for spawning. This area also provides important habitat for forage species.

Wildlife are also reliant upon this area for habitat. Eagles, loons, herons, waterfowl, songbirds, furbearers, amphibians and reptiles benefit from this valuable habitat.

The emergent, floating and submergent plant community structure of Sensitive area A includes: **Emergents;** soft-stem bulrush (*Scirpus sp.*), sedges (*Carex sp.*), spike rush (*Eleocharis sp.*), and arrowhead (*Sagittaria sp.*),. **Floating leafed**; yellow pond lily (*Nuphar advena*), and white water lily (*Nymphaea odorata*). **Submergents;** musk grass (*Chara sp.*), coontail (*Ceratophyllum demersum*), eel grass (*Vallisneria americana*), northern milfoil (*Myriophyllum sibiricum*), variable pondweed (*P. gramineus*), fern pondweed (*P. robbinsii*), large leaf pondweed (*P. amplifolius*), clasping pondweed (*P. richardsonii*) and narrow leaf pondweed (*P. zosteriformis*).

Chemical treatments and/or mechanical harvesting are strongly discouraged. Historical chemical treatments and mechanical harvesting should be limited to navigational channels only. All other interests in chemical treatments and mechanical harvesting should be scrutinized.

Resource Value of Site B

Sensitive area B is located centrally on the western shoreline and covers approximately 2800' of shoreline. This sensitive area was identified in a previous field survey as meriting protection as a sensitive area. Because past conditions are an effective measure of future potential this area should maintain the designation of a sensitive area and efforts should target reduction of removal or disturbances effecting local vegetation distribution and density in an attempt to restore critical habitat and the positive shoreline erosion reduction potential they provide.

This area provides important habitat for centrarchid (bass and panfish) and esocid (northern pike). These species will use the area for spawning, feeding, protection and as a nursery for young. Muskellunge will use this area for feeding and protection. This area also provides important habitat for forage species.

Wildlife are also reliant upon this area for habitat. Eagles, loons, herons, waterfowl, songbirds, furbearers, amphibians and reptiles benefit from this valuable habitat.

The emergent and submergent plant community structure of Sensitive area B includes: **Emergents;** soft stem bulrush (*Scirpus validus*.), hard stem bulrush (Scirpus acutus), Three square sedge (Scirpus americanus), Creeping Spikerush (Eleocharis palustris), and Bur-reed (Sparganium sp.). **Submergents;** coontail (*Ceratophyllum demersum*.), Dwarf Milfoil (Myriophyllum tenellum) and clasping-leaf pondweed (*Potamogeton richardsonii*), and wild celery or water celery or eel grass (Vallisneria Americana).

Chemical treatments and/or mechanical harvesting are strongly discouraged. Historical chemical treatments and mechanical harvesting should be limited to narrow navigational channels only. All other interests in chemical treatments and mechanical harvesting should be scrutinized. All hand pulling or raking should be scaled back to comply with the allowable 30' widths which must include the area in and around the dock and can not be moved to another segment of shoreline until the previously disturbed site is fully restored.

Resource Value of Site C

Sensitive area C is located at the southernmost end of Big McKenzie Lake and covers approximately 7,000 feet of shoreline extending out nearly 1500 feet in areas. Most of this length is dominated by a shrub/scrub and shallow or open water wetland, which have helped protect it from the negative impacts that can be associated with improperly developed shorelines.

Within sensitive area C there is an island of bulrush situated between 250 feet and 1000 feet from shore. The island is approximately 1,600 feet long x 200 feet wide.

This area provides important habitat for centrarchid (bass and panfish) and esocid (northern pike). These species will use this area for spawning, feeding, protection and as a nursery for young. Muskellunge will use the area for feeding and protection. This area also provides important habitat for forage species.

Wildlife are also reliant upon this area for habitat. Eagles, loons, herons, waterfowl, songbirds, furbearers, amphibians and reptiles benefit from this valuable habitat.

Sensitive area C has a diverse community structure of emergent, floating and submergent aquatic plants including: **Emergents;** ***purple loosestrife** (*Lythrum salicaria*), sedges (*Carex sp.*), arrowhead (*Sagittaria sp.*), cattails (*Typha sp.*), bur-reed (*Sparganium sp.*), tag alder (*Ulnus sp.*) and giant reed grass (*Phragmites sp.*). **Floating leafed**; yellow pond lily (*Nuphar advena*) and white water lily (*Nymphaea odorata*). **Submergents;** musk grass (*Chara sp.*), elodea, coontail (*Ceratophyllum demersum*), eel grass (*Vallisneria americana*), northern milfoil (*Myriophyllum sibiricum*), floating leaf pondweed (*Potamogeton natans*), variable pondweed (*P. gramineus*), fern pondweed (*P. robbinsii*), large leaf pondweed (*P. amplifolius*), clasping pondweed (*P. richardsonii*), narrow leaf pondweed (*P. zosteriformis*), ***curly leaf pondweed (*P. crispus*) and illinois pondweed (*P. illinoensis*).

Purple loosestrife has been documented as occurring along the shoreline of this sensitive area. This is an invasive species, which 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 an approved herbicide. You should contact the Department before any of these methods are implemented.

Chemical treatments and/or mechanical harvesting are strongly discouraged. Historical chemical treatments and mechanical harvesting should be limited to narrow navigational channels only. All other interests in chemical treatments and mechanical harvesting should be scrutinized, except for treatment of purple loosestrife.

Resource Value of Site D

Sensitive area D is located along the northeastern shore of Big McKenzie Lake and covers approximately 700 feet of shoreline extending out to 500 feet. This area is considered high quality walleye spawning habitat. Consisting of rock and cobble substrate will little or no fine sediment.

Past protection efforts for coarse rock rubble walleye spawning habitat had come from an interim extension of NR107 and its coverage of critical aquatic habitats; but, this is now being more properly dealt with through protection of Public Rights Features (PRF) under a newly emerging program called ASNRI features (Areas of Special Natural Resource Importance).
No dredging, structures or deposits should occur in this area to retain the high quality spawning habitat characteristics.