

Appendix B: Bad Axe - La Crosse River Basin Lakes

HOW TO USE THE LAKES TABLE

The following explains the information used in the following lakes table. *Note: A blank space anywhere in the table means that data is unassessed or unavailable.*

Lake Name: All named lakes are listed. Lake names are those found on U.S. Geological Survey quadrangle maps unless the Wisconsin Geographic Names Council has established a different name. Some lakes are known locally by other names; where available, local names have been listed with the official name.

Waterbody Identification Code (WBIC): All waterbodies have been assigned a unique waterbody identification code by the state to help in identifying streams and lake locations.

Township, Range, Section: Lake locations are identified by township, range, and section.

County: Indicates the county in which the lake is located.

Watershed Number: (e.g. BL06) The watershed code which refers to the watershed in which the lake is found.

Surface Area: The surface area is the size of the lake, in acres, as listed in the *Wisconsin Lakes* PUB-FH-800 (2001).

Max Depth: The lake's maximum depth, in feet, are those listed in *Wisconsin Lakes*, WDNR PUBL-FM-800 (2001).

Mean Depth: The lake's mean depth, in feet, are those listed in *Wisconsin Lakes*, WDNR PUBL-FM-800 (2001).

Lake Type: Each lake type displays unique limnological characteristics based on physical and chemical properties. Production of plant and animal life generally varies in accordance with lake type. Basic classifications and qualifying criteria are:

Drainage lake (DG): Impoundments and natural lakes with the main water source from stream drainage. Has at least one inlet and one outlet.

Drained lake (DR): Natural lake with the main water source dependent on the groundwater table and seepage from adjoining wetlands. Seldom has an inlet but will have an outlet of very little flow similar to the seepage lake except for the outlet.

Seepage lake (SE): Landlocked. Water level maintained by groundwater table and basin seal. Intermittent outlet may be present.

Spring lake (SP): Seldom has an inlet, but always has an outlet of substantial flow. Water supply dependent upon groundwater rather than surface drainage.

The abbreviation IMP following any lake type denotes that an impounding structure (dam) is located on that lake. Shallow impoundments commonly experience sedimentation, turbidity, excess vegetation and algae, rough fish, and water level fluctuations.

Access:

BR = Boat Ramp
BF = Barrier-free boat ramp (boating dock and/or wheelchair access)
PF = Barrier-free pier (wheelchair access)
T = Walk-in trail
R = Roadside
W = Wilderness
BW = Barrier-free wilderness access (wheelchair access)
NW = Navigable water access to lake
X = Some type of access available, but not specified

Impounded Stream: The name of the stream or river which is impounded to create the lake.

Winterkill: Winterkill (winter oxygen depletion) is a common problem in many shallow Wisconsin lakes. A kill can occur when at least four inches of snow cover the lake, which prevents sunlight from reaching the water. All photosynthesis stops and plants begin to die and decompose. The extent of oxygen loss depends on the total amount of plant, algae and animal matter that decays. Drought increases the chance of winterkill by reducing the volume of water in the lake. A Y indicates the lake has experienced winterkill at least once. If blank, winterkill is not known to have occurred.

Map: Yes indicates that a lake map exists on the DNR website at www.dnr.state.wi.us/org/water/fhp/lakes/lakemap/

Phosphorus Sensitivity (P SENS): This analysis classifies lakes according to their relative sensitivity to phosphorus loading and existing trophic condition. The screening identifies high quality lakes that should receive highest priority for nutrient control management. The analysis first separates lakes into two major categories; lakes that are sensitive to increased phosphorus loading (Class I) and lakes less responsive to changes in phosphorus loading (Class II). Lakes in each general classification are then subdivided into management groups based on data needs or existing water quality conditions.

Class I:

A = existing water quality fair to excellent; potentially most sensitive to increased phosphorus loading.
B = existing water quality poor to very poor; less sensitive to increased phosphorus loading than Group A.
Ins = data is inadequate or insufficient to assess trophic condition; classification monitoring recommended.

Class II:

A = existing water quality fair to excellent; may not be as sensitive to phosphorus loading as Class I lakes.
B = existing water quality poor to very poor; low sensitivity to increased phosphorus loading.
Ins = data inadequate or insufficient to assess trophic condition.
These classification groups are used to establish appropriate management recommendations and priorities.

Trophic Status Index (TSI) Class: Lakes can be divided into three categories based on trophic state: oligotrophic, mesotrophic and eutrophic. These categories are general indicators of lake productivity.

Oligotrophic lakes are generally clear, cold and free of many rooted aquatic plants or large blooms of algae. Because they are low in nutrients, oligotrophic lakes generally do not support large fish populations. However, they often have an efficient food chain with a very desirable fishery of large predator fish.

Mesotrophic lakes are in an intermediate stage between oligotrophic and eutrophic. The bottoms of these lakes are often devoid of oxygen in late summer months, limiting cold water fish and resulting in phosphorus cycling from sediments.

Eutrophic lakes are high in nutrients. They are likely to have excessive aquatic vegetation or experience algae blooms, sometimes both. They often support large fish populations, but are also susceptible to oxygen depletion. Small, shallow lakes are especially vulnerable to **A**winterkill,**C** which can reduce the number and types of fish.

Lakes with a TSI less than or equal to 39 are generally considered oligotrophic, those with a TSI of 40-49 are considered mesotrophic, and those with a TSI equal to or greater than 50 are generally considered eutrophic. All lakes naturally age, or progress from being oligotrophic to eutrophic. In many places, people have accelerated this process by allowing nutrients from agriculture, lawn fertilizers, streets, septic systems, and urban storm drainage to enter lakes.

SH (Self Help Monitoring): This column identifies existing or recommended Self-Help monitoring. The following letters in each column signify that Self-Help monitoring is:

R = recommended
X = completed
C = currently being done

HG (Mercury): Because all fish contain some mercury, the state gives general statewide advice about how much fish to eat. This advice can be used for most inland (i.e. non-Great Lakes) waters of the state. Certain lakes contain fish with higher levels of mercury for which special advice is given. These consumption advisories are issued annually for lakes with fish mercury levels of 1.0 parts per million (ppm) or greater. Generally, predator fish from soft water, poorly buffered, low pH lakes have the highest concentrations of mercury. The most updated listing of waterbodies with fish consumption advisories can be obtained by writing to: Fish Advisory, Wisconsin Department of Natural Resources, P.O. Box 7921, Madison, WI 53707.

Groups:

R - Fish mercury monitoring is recommended.
X - Multiple fish populations have been tested for mercury content and a Special Advisory DOES NOT exist
SA (special advisory) - Monitoring has been conducted and a special advisory exists for fish consumption on this water body due to mercury contamination.
GA (general advisory) - Monitoring has been conducted and this waterbody falls under a general statewide fish consumption advisory for mercury

MAC (Macrophytes): This column identifies the status of macrophytes or aquatic plants in the lake. Specifically, it indicates if the lake experiences Eurasian water milfoil and/or purple loosestrife, two invasive non-native species of plants that can impair the lake's aesthetic, ecological, and recreational values.

EM = indicates that Eurasian water milfoil is present in the lake and may be a problem
EM-W = lake part of research project to study the effectiveness of Eurasian water milfoil weevil in reducing and/or eradicating this plant from the lake.
PL = indicates that purple loosestrife is present in the lake and may be a problem

LMO (Lake Management Organization): Indicates whether or not a lake management organization (LMO) exists for the lake. An LMO can range from a small, loosely organized group of lake property owners to an association to a district, complete with by-laws and taxing authority. In the lakes table, the following letters are used to indicate whether the LMO is an association or district. If the type of organization is not known, but one does exist, a Y is used.

Y Indicates that a LMO does exist
ASSC Indicates that a lake management association exists
DIST Indicates that a lake management district exists
R Recommends that a LMO be developed; this recommendation is usually accompanied by a narrative recommendation in the watershed analysis section.

Lake Plan or Prot: This column refers to whether the lake has been the recipient of a lakes planning or lakes protection grant in the past and if either of these grants are recommended for the lake. If a lakes planning or protection grant is recommended, a narrative in the lake's respective watershed section will describe the recommended purpose of the grant.

PLAN = Lake has received a Lakes Management Program Planning Grant in the past.

PROT = Lake has received a Lakes Management Program Protection Grant in the past.

PLAN-R = A Lakes Management Planning Grant is recommended for a specific purpose identified in the lake's individual narrative in the Surface Water Quality Report watershed section.

PROT-R = A Lakes Management Protection Grant is recommended for a specific purpose identified in the lake's individual narrative in the Surface Water Quality Report watershed section.

Problems: The source of problems that contribute pollutants or stressors, resulting in physical, chemical, or biological impairments of a lake.

AGSPR - Agricultural land spreading site

HM - Hydrological modification (dam, ditching, wetland drainage)

NPS - Unspecified nonpoint sources

CL - Cropland erosion

SB - Streambank erosion

PSB - Streambank pasturing

PWL - Woodlot pasturing

BY - Barnyard or exercise lot runoff (animal operations)

CE - Building construction site erosion

RS - Roadside construction erosion

SEP - Septic systems are or may be causing water quality problems

URB - Urban storm water runoff

DEV - Intense development pressure

WLF - Water level fluctuations

Impact of Problems: The result of known or unknown problems which creates physical, chemical, or biological impairments of a lake.

HAB - Habitat

MAC - Undesirable macrophyte

ALG - Undesirable algae growth

NUT - Nutrient enrichment

SED - Sedimentation

TOX - General toxicity problems

TURB - Turbidity

BAC - unsafe levels of bacteria for wading or swimming

PH - pH levels above the water quality standard of 9

DO - low dissolved oxygen

ACC - Access problems relate to the general public's inability to access the lake, which as a navigable waterbody is considered a water of the state.