



Lakes of Biological Significance – April 23, 2015

A list of high quality lakes based on dedicated biological sampling that can be used to focus protection efforts.

Criteria: Unique plant or animal presence was the primary measure of a lake’s biological significance. Lakes were rated and grouped for each of the following communities: aquatic plants, fish, birds, and amphibians. Lakes were assigned one of three biological significance classes (**outstanding, high, or moderate**), which are defined in the table below. Many Minnesota lakes have not been sampled for plants and/or animals, so this list of lakes will be periodically revised as additional biological data become available.

Analysis: This goal of this list was to identify lakes that exhibit the highest quality features within any of the four assessed biological communities (as opposed to identification of lakes that exhibit diversity across communities). Therefore, a lake needed to meet criteria for only one of the community types (aquatic plants, fish, birds, amphibians) to be identified as a lake of biological significance. Occurrences of high-quality features within the community types determined the biological significance rank.

Outstanding	High	Moderate
<ul style="list-style-type: none"> • High aquatic plant richness, high floristic quality, and a population of an endangered or threatened plant species. • Important wild rice lakes. • Exceptional fishery for selected game fish or an outstanding nongame fish community. • One or more of the following: endangered or threatened colonial waterbird nesting area, presence of several endangered, threatened, or special concern lake bird species, or six or more lake bird Species of Greatest Conservation Need. 	<ul style="list-style-type: none"> • Two of the following: high aquatic plant richness, high floristic quality, or a population of an endangered or threatened plant species. • Populations of more than one fish species of special concern and/or Species of Greatest Conservation Need. • One or more of the following: colonial waterbird nesting area, history of endangered or threatened colonial waterbird nesting, presence of endangered, threatened, or special concern lake bird species, or five lake bird Species of Greatest Conservation Need. • Mudpuppy presence. 	<ul style="list-style-type: none"> • High aquatic plant richness, high floristic quality, or a population of an endangered or threatened plant species. • Populations of one fish species of special concern and/or fish Species of Greatest Conservation Need. • One or more of the following: history of colonial waterbird nesting, presence of an endangered, threatened, or special concern lake bird species, or several lake bird Species of Greatest Conservation Need.

Community data and their sources:

Community	Outstanding	High	Moderate	Data Sources
Aquatic Plant	<ul style="list-style-type: none"> Lakes in the upper 95th percentile of aquatic plant richness and floristic quality for the ecoregion (adjusted for survey type) and with a population of an endangered or threatened plant species. Shallow lakes with species richness in the upper 95th percentile. Important wild rice lakes. 	<ul style="list-style-type: none"> Lakes with two of the following: a lake in the upper 95th percentile of aquatic plant richness or floristic quality for the ecoregion (adjusted for survey type) or with a population of an endangered or threatened plant species. 	<ul style="list-style-type: none"> Lakes with one of the following: a lake in the upper 95th percentile of aquatic plant richness or floristic quality for the ecoregion (adjusted for survey type) or with a population of an endangered or threatened plant species. 	<p><i>DNR Lake Survey Reports</i> Contacts: Karen Myhre, EWR – MBS; Nicole Hansel-Welch and Ann Geisen, F&W – Shallow Lakes Program; Donna Perleberg and Paul Radomski, EWR – Lakes Unit</p>
Fish	<ul style="list-style-type: none"> Lakes meeting at least one of the following criteria: self-sustaining walleye, quality northern pike, native muskie, exceptional fish IBI, lake trout lake, and/or cisco refuge lake (note that in the Arrowhead portion of the state, self-sustaining walleye was a criterion for <i>High</i> ranking). 	<ul style="list-style-type: none"> Lakes with populations of more than one of the following: lake whitefish, lake sturgeon, Nipigon cisco, shortjaw cisco, least darter, northern sunfish, deepwater sculpin, pugnose shiner, or weed shiner; or other reason identified by the Area Fisheries Manager (note that in the Arrowhead portion of the state, self-sustaining walleye was a criterion for <i>High</i> ranking). 	<ul style="list-style-type: none"> Lakes with populations of one of the following: lake whitefish, lake sturgeon, Nipigon cisco, shortjaw cisco, least darter, northern sunfish, deepwater sculpin, pugnose shiner, or weed shiner. 	<p><i>DNR Fisheries Lake Survey Reports</i> Contact: Jacquelyn Bacigalupi, F&W – Fisheries</p>
Amphibian		<ul style="list-style-type: none"> Lakes with observed mudpuppy populations. 		<p><i>DNR Amphibian Surveys and Observations</i> Contacts: Carol Hall and Krista Larson, EWR</p>
Bird	<ul style="list-style-type: none"> Lakes with a colonial waterbird nesting area (2000-present) for endangered, threatened or special concern species (rare species); or lakes with 2 or more endangered or threatened lake bird species observed during breeding bird surveys; or lakes with 3 or more rare species of lake birds; or lakes with 6 or more lake bird Species of Greatest Conservation Need. 	<ul style="list-style-type: none"> Lakes with a colonial waterbird nesting area (2000-present); or lakes with a colonial waterbird nesting area for rare species (active as of last survey but surveyed between 1980-2000); or lakes with an endangered or threatened lake bird species observed during breeding bird surveys; or lakes with 2 rare species of lake birds; or lakes with 5 lake bird Species of Greatest Conservation Need. 	<ul style="list-style-type: none"> Lakes with a colonial waterbird nesting area (active as of last survey but surveyed between 1980-2000); or lakes with one rare species of lake bird; or lakes with 3 or 4 lake bird Species of Greatest Conservation Need. 	<p><i>Various Bird Surveys, including the Breeding Bird Surveys</i> Contacts: Bob Dunlap, Steve Stucker, and Daren Carlson, EWR</p>