NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30901 Definitions.

Sec. 30901. As used in this part:

(a) "Benefit" or "benefits" means advantages resulting from a project to public corporations, the inhabitants of public corporations, the inhabitants of this state, and property within public corporations. Benefit includes benefits that result from elimination of pollution and elimination of flood damage, elimination of water conditions that jeopardize the public health or safety; increase of the value or use of lands and property arising from improving a lake or lakes as a result of the lake project and the improvement or development of a lake for conservation of fish and wildlife and the use, improvement, or development of a lake for fishing, wildlife, boating, swimming, or any other recreational, agricultural, or conservation uses.

(b) "Inland lake" means a public inland lake or a private inland lake.

(c) "Interested person" means a person who has a record interest in the title to, right of ingress to, or reversionary right to a piece or parcel of land that would be affected by a permanent change in the bottomland of a natural or artificial, public or private inland lake, or adjacent wetland. In all cases, whether having such an interest or not, the department is an interested person.

(d) "Local governing body" means the legislative body of a local unit of government.

(e) "Preliminary costs" includes costs of the engineering feasibility report, economic study, estimate of total cost, and cost of setting up the assessment district.

(f) "Private inland lake" means an inland lake other than a public inland lake.

(g) "Public inland lake" means a lake that is accessible to the public by publicly owned lands or highways contiguous to publicly owned lands or by the bed of a stream, except the Great Lakes and connecting waters.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30902 Petition for improvement of lake or wetland; local governing bodies' powers; lake boards.

Sec. 30902. (1) The local governing body of any local unit of government in which the whole or any part of the waters of any public inland lake is situated, upon its own motion or by petition of 2/3 of the freeholders owning lands abutting the lake, for the protection of the public health, welfare, and safety and the conservation of the natural resources of this state, or to preserve property values around a lake, may provide for the improvement of a lake, or adjacent wetland, and may take steps necessary to remove and properly dispose of undesirable accumulated materials from the bottom of the lake or wetland by dredging, ditching, digging, or other related work.

(2) Upon receipt of the petition or upon its own motion, the local governing body within 60 days shall set up a lake board as provided in section 30903 that shall proceed with the necessary steps for improving the lake or to void the proposed project.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30903 Lake board; composition; election of chairperson, treasurer, and secretary; quorum; concurrence of majority required; technical data; recommendations.

Sec. 30903. (1) The lake board shall consist of all of the following:

(a) A member of the county board of commissioners appointed by the chairperson of the county board of commissioners of each county affected by the lake improvement project; 1 representative of each local unit of government, other than a county, affected by the project, or, if there is only 1 such local unit of government, 2 representatives of that local unit of government, appointed by the legislative body of the local unit of government; and the county drain commissioner or his or her designee, or a member of the county road commission in counties not having a drain commissioner.

(b) A member elected by the members of the lake board serving pursuant to subdivision (a) at the first meeting of the board or at any time a vacancy exists under this subdivision. Only a person who has an interest in a land contract or a record interest in the title to a piece or parcel of land that abuts the lake to be improved is eligible to be elected and to serve under this subdivision. An organization composed of and representing the majority of lakefront property owners on the affected lake may submit up to 3 names to the board, from which the board shall make its selection. The terms served by this member shall be 4 years in length.

(2) The lake board shall elect a chairperson, treasurer, and secretary. The secretary shall attend meetings of the lake board and shall keep a record of the proceedings and perform other duties delegated by the lake board. A majority of the members of the lake board constitutes a quorum. The concurrence of a majority in any matter within the duties of the board is required for the determination of a matter.

(3) The department, upon request of the lake board, shall provide whatever technical data it has available and make recommendations in the interests of conservation.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995;—Am. 2004, Act 522, Eff. Mar. 1, 2005.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30904 Initiation of action by freeholders.

Sec. 30904. Action may be initiated under section 30902 relating to any private inland lake only upon petition of 2/3 of the freeholders owning lands abutting the lake.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30905 Preliminary costs; revolving funds; assessments.

Sec. 30905. The county board of commissioners may provide for a revolving fund to pay for the preliminary costs of improvement projects within the county. The preliminary costs shall be assessed to the property owners in the assessment district by the lake board after notice of the hearing is given pursuant to Act No. 162 of the Public Acts of 1962, being sections 211.741 to 211.746 of the Michigan Compiled Laws, and shall be repaid to the fund where the project is not finally constructed.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30906 Institution of proceedings for lake improvement; conflicts with local ordinances and charters.

Sec. 30906. (1) Whenever a local governing body, in accordance with section 30902, considers it expedient to have a lake improved, it, by resolution, shall direct the lake board to institute proceedings as prescribed in this part.

(2) When the waters of any inland lake are situated in 2 or more local units of government, the improvement of the lake may be determined jointly in the same manner as provided in this part, if the local governing bodies of all local units of government involved determine it to be expedient in accordance with section 30902 and, by resolution, direct the lake board to institute proceedings as prescribed in this part. Where local ordinances and charters conflict, this part shall govern.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30907 Lake improvement; initiation by department.

Sec. 30907. If the department considers it expedient, in accordance with section 30902, to have a lake dredged or improved, the department may petition the local governing body or governing bodies in which the lake is located for an improvement of the lake. The department may also join with the local governing body of any local unit of government in instituting proceedings for improvements as set forth in this part.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30908 Lake board; determination of scope of project; establishment of special assessment districts; ministerial duties.

Sec. 30908. The lake board, when instructed by resolution of the local governing body, shall determine the scope of the project and shall establish a special assessment district, including within the special assessment district all parcels of land and local units which will be benefited by the improvement of the lake. The local governing body may delegate to the lake board other ministerial duties including preparation, assembling, and computation of statistical data for use by the board and the superintending, construction, and maintenance of any project under this part, as the local governing body considers necessary.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30909 Engineering and economic reports; cost estimates.

Sec. 30909. (1) The lake board shall retain a licensed professional engineer to prepare an engineering feasibility report, an economic study report, and an estimate of cost. The report shall include, when applicable, recommendations for normal lake levels and the methods for maintaining those levels.

(2) The engineering feasibility report shall include the methods proposed to implement the recommended improvements, such as dredging, removal, disposal, and disposal areas for undesirable materials from the lake. The report shall include an investigation of the groundwater conditions and possible effects on lake levels from removal of bottom materials. A study of existing nutrients and an estimate of possible future conditions shall be included. Estimate of costs of right-of-way shall be included.

(3) The estimate of cost prepared under subsection (1) shall show probable assessments for the project. The economic report shall analyze the existing local tax structure and the effects of the proposed assessments on the local units of government involved. A copy of the report shall be furnished to each member of the lake board.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30910 Review of reports by board; determinations of practicability; public hearings; notice; determination.

Sec. 30910. Within 60 days after his or her receipt of the reports, the chairperson shall hold a meeting of the lake board to review the reports required under section 30909 and to determine the practicability of the project. The hearing shall be public, and notice of the hearing shall be published twice in a newspaper of general circulation in each local unit of government to be affected. The first publication shall be not less than 20 days prior to the time of the hearing. The board shall determine the practicability of the project within 10 days after the hearing unless it is determined at the hearing that more information is needed before the determination can be made. Immediately upon receipt of the additional information, the board shall make its determination.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30911 County contributions toward costs of improvement.

Sec. 30911. The county board of commissioners may provide up to 25% of the cost of a lake improvement project on any public inland lake.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30912 Approval of plans and cost estimates; sufficiency of petition; resolution; publication; assessment roll.

Sec. 30912. If the lake board passes a resolution in which it determines the project to be practicable, the lake board shall determine to proceed with the project, shall approve the plans and estimate of costs as originally presented or as revised, corrected, amended, or changed, and shall determine the sufficiency of the petition for the improvement. The resolution shall be published once in a newspaper of general circulation in each local unit of government to be affected. After the resolution has been published, the sufficiency of the petition shall not be subject to attack except in an action brought in a court of competent jurisdiction within 30 days after publication. The lake board, after finally accepting the special assessment district, shall prepare an assessment roll based upon the benefits to be derived from the proposed lake improvement, and the lake board shall direct the assessing official of each local unit of government to be affected to join in making an assessment roll in which shall be entered and described all the parcels of land to be assessed, with the names of the respective owners of the parcels of land, if known, and the total amount to be assessed against each parcel of land and against each local unit of government to be affected, which amount shall be such relative portion of the whole sum to be levied against all parcels of land and local units of government in the special assessment district as the benefit to such parcel of land and local unit of government bears to the total benefit to all parcels of land and local units of government in the special assessment district. When the assessment roll has been completed, each assessing official shall affix to the assessment roll his or her certificate stating that it was made pursuant to a resolution of the lake board adopted on a specified date, and that in making the assessment roll he or she has, according to his or her best judgment, conformed in all respects to the directions contained in the resolution and the statutes of the state.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30913 Report of assessment to lake board; review; notice and hearing; confirmation.

Sec. 30913. The assessment roll shall be reported to the lake board by the assessing official of the local unit or units of government initiating the proceeding and filed in the office of the clerk of each local unit of government to be affected. Before confirming the assessment roll, the lake board shall appoint a time and place when it will meet and review the assessment roll and hear any objections to the assessment roll, and shall publish notice of the hearing and the filing of the assessment roll twice prior to the hearing in a newspaper of general circulation in each local unit of government to be affected, the first publication to be at least 10 days before the hearing. Notice of the hearing shall also be given in accordance with Act No. 162 of the Public Acts of 1962, being sections 211.741 to 211.746 of the Michigan Compiled Laws. The hearing may be adjourned from time to time without further notice. Any person or local unit of government objecting to the assessment roll shall file his or her objection in writing with the chairperson before the close of the hearing or within such further time period as the lake board may grant. After the hearing, the lake board may confirm the special assessment roll as reported to it or as amended or corrected by it, may refer it back to the assessing officials for revision, or may annul it and direct a new roll to be made. When a special assessment roll has been confirmed, the clerk of each local unit of government shall endorse on the assessment roll the date of the confirmation. After confirmation, the special assessment roll and all assessments on the assessment roll shall be final and conclusive unless attacked in a court of competent jurisdiction within 30 days after notice of confirmation has been published in the same manner as the notice of hearing.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30914 Special assessments; installments; interest; penalties.

Sec. 30914. Upon the confirmation of the assessment roll, the lake board may provide that the assessments be payable in 1 or more approximately equal annual installments, not exceeding 30. The amount of each installment, if more than 1, need not be extended upon the special assessment roll until after confirmation. The first installment of a special assessment shall be due on or before such time after confirmation as the board shall establish, and the several subsequent installments shall be due at intervals of 12 months from the due date of the first installment or from such other date as the board shall establish. All unpaid installments, prior to their transfer to the tax roll of each local unit of government involved, shall bear interest, payable annually on each installment due date, at a rate to be set by the board, not exceeding 6% per annum, from such date as established by the board. Future due installments of an assessment against a parcel of land may be paid to the treasurer of each local unit of government at any time in full, with interest accrued to the due date of the next installment. If any installment of a special assessment is not paid when due, then it shall be considered to be delinquent and there shall be collected on the installment, in addition to interest as above provided, a penalty at the rate of 1/2 of 1% for each month or fraction of a month that it remains unpaid before being reported to the township board for reassessment upon the tax roll.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30915 Special assessments; liens.

Sec. 30915. All special assessments contained in any special assessment roll, including any part of the special assessment payment that is deferred, constitute a lien, from the date of confirmation of the roll, upon the respective parcels of land assessed. The lien shall be of the same character and effect as the lien created for taxes in each local unit of government and shall include accrued interest and penalties. A judgment, decree, or any act of the board vacating a special assessment does not destroy or impair the lien upon the premises assessed for the amount of the assessment as may be equitably charged against the premises, or as by a regular mode of proceeding might be lawfully assessed on the premises.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30916 Special assessments; collections.

Sec. 30916. When any special assessment roll is confirmed, the lake board shall direct the assessments made in the roll to be collected. The clerk of each local unit of government involved shall then deliver to the treasurer of each local unit of government the special assessment roll, to which he or she shall attach his or her warrant commanding the treasurer to collect the assessments in the roll in accordance with the directions of the lake board. The warrant shall further require the treasurer, on September 1 following the date when any assessments or any part of an assessment have become due, to submit to the lake board a sworn statement setting forth the names of delinquent persons, if known, a description of the parcels of land upon which there are delinquent assessments, and the amount of the delinquency, including accrued interest and penalties computed to September 1 of the year. Upon receiving the special assessment roll and warrant, the treasurer shall collect the amounts assessed as they become due.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30917 Delinquent assessments; reassessment.

Sec. 30917. If the treasurer reports as delinquent any assessment or part of an assessment, the lake board shall certify the delinquency to the assessing official of each local unit of government, who shall reassess, on the annual tax roll of the local unit of government of that year, in a column headed “special assessments”, the delinquent sum, with interest and penalties to September 1 of that year, and an additional penalty of 6% of the total amount. Thereafter, the statutes relating to taxes shall be applicable to the reassessments in each local unit of government.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30918 Division of land parcels; uncollected assessment apportioned.

Sec. 30918. If any parcel of land is divided after a special assessment on the land has been confirmed and before the collection of the assessment, the lake board may require the assessment official to apportion the uncollected amounts between the divisions of the parcel of land, and the report of the apportionment when confirmed by the lake board shall be conclusive upon all parties. If the interested parties do not agree in writing to the apportionment, then, before confirmation, notice of hearing shall be given to all the interested parties, either by personal service or by publication as provided in the case of an original assessment roll.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30919 Additional special assessments.

Sec. 30919. If the assessments in any special assessment roll prove insufficient for any reason, including the noncollection of the assessment, to pay for the improvement for which they were made or to pay the principal and interest on the bonds issued in anticipation of the collection of the assessment, then the lake board shall make additional pro rata assessments to supply the deficiency, but the total amount assessed against any parcel of land shall not exceed the value of the benefits received from the improvement.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30920 Special assessments; invalidity and new assessments.

Sec. 30920. Whenever, in the opinion of the lake board, any special assessment is invalid by reason of irregularities or informalities in the proceedings, or if any court of competent jurisdiction adjudges such assessment illegal, the lake board, whether the improvement has been made or not and whether any part of the assessment has been paid or not, may proceed from the last step at which the proceedings were legal and cause a new assessment to be made for the same purpose for which the former assessment was made. All proceedings on that reassessment and for the collection of the assessment shall be conducted in the same manner as provided for the original assessment. Whenever an assessment or any part of an assessment levied upon any premises has been set aside, if the assessment or part of an assessment has been paid and not refunded, the payment shall be applied upon the reassessment.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30921 Special assessments; exempt lands.

Sec. 30921. The governing body of any department of the state or any of its political subdivisions, municipalities, school districts, townships, or counties, whose lands are exempt by law, may by resolution agree to pay the special assessments against the lands, in which case the assessment, including all the installments of the assessment, shall be a valid claim against the local unit of government.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30922 Borrowing; issuance of lake level orders and bonds.

Sec. 30922. The lake board may borrow money and issue lake level orders or the bonds of the special assessment district in anticipation of the collection of special assessments to defray the cost of any improvement made under this part after the special assessment roll has been confirmed. The bonds or lake level orders shall not exceed the amount of the special assessments in anticipation of the collection of which they are issued. Collections on special assessments to the extent pledged for the payment of bonds or lake level orders shall be set aside in a special fund for the payment of the bonds or lake level orders. The issuance of special assessments bonds or lake level orders shall be governed by the general laws of this state applicable to the issuance of special assessments bonds or lake level orders and in accordance with the revised municipal finance act, 2001 PA 34, MCL 141.2101 to 141.2821. Bonds or lake level orders may be issued in anticipation of the collection of special assessments levied in respect to 2 or more public improvements, but no special assessment district shall be compelled to pay the obligation of any other special assessment district. The local governing body may pledge the full faith and credit of a local unit of government for the prompt payment of the principal of and interest on the bonds or lake level orders as they become due. The pledge of full faith and credit of the local unit of government shall be included within the total limitation prescribed by the revised municipal finance act, 2001 PA 34, MCL 141.2101 to 141.2821. Bonds and lake level orders issued under this part shall be executed by the chairperson and secretary of the lake board, and the interest coupons to be attached to the bonds and orders shall be executed by the officials causing their facsimile signatures to be affixed to the bonds and orders.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995;—Am. 2002, Act 218, Imd. Eff. Apr. 29, 2002.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30923 Condemnation; commencement and conduct of proceedings.

Sec. 30923. Whenever the lake board determines by proper resolution that it is necessary to condemn private property for the purpose of this part, the condemnation proceedings shall be commenced and conducted in accordance with Act No. 149 of the Public Acts of 1911, being sections 213.21 to 213.25 of the Michigan Compiled Laws.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30924 Gifts and grants-in-aid; acceptance by lake board; contract or agreement.

Sec. 30924. (1) The lake board may receive and accept gifts or grants-in-aid for the purpose of implementing this part.

(2) The lake board may contract or make agreement with the federal government or any agency of the federal government whereby the federal government will pay the whole or any part of the costs of a project or will perform all or any part of the work connected with the project. The contract or agreement may include any specific terms required by act of congress or federal regulation as a condition for the participation of the federal government.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30925 Gifts and grants-in-aid; acceptance by department.

Sec. 30925. The department in carrying out the purposes of this part may receive and accept, on behalf of the state, gifts and grants-in-aid.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30926 Advertising for bids; letting of contracts; work relief project.

Sec. 30926. (1) Except as provided in subsection (2), the chairperson of the lake board shall advertise for bids. A contract shall be let to the lowest bidder giving adequate security for the performance of the contract, but the lake board shall reserve the right to reject any and all bids.

(2) The lake board may let a contract with a local, incorporated, nonprofit homeowner association, the membership of which is open on a nondiscriminatory basis to all residents within the geographic area to be assessed or serviced, without advertising for public bids. The homeowner association shall give adequate security for the performance of the contract.

(3) The local governing body may improve a lake as a work relief project pursuant to applicable provisions of law.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30927 Costs of projects; computation; expenditures; representation by attorney.

Sec. 30927. (1) Within 10 days after the letting of contracts or, in case of an appeal, immediately after the appeal has been decided, the lake board shall make a computation of the entire cost of a project under this part that includes all preliminary costs and engineering and inspection costs incurred and all of the following:

(a) The fees and expenses of special commissioners.

(b) The contracts for dredging or other work to be done on the project.

(c) The estimated cost of an appeal if the apportionment made by the lake board is not sustained.

(d) The estimated cost of inspection.

(e) The cost of publishing all notices required.

(f) All costs of the circuit court.

(g) Any legal expenses incurred in connection with the project, including litigation expenses, the costs of any judgments or orders entered against the lake board or special assessment district, and attorney fees.

(h) Fees for any permits required in connection with the project.

(i) Interest on bonds for the first year, if bonds are to be issued.

(j) Any other costs necessary for the administration of lake board proceedings, including, but not limited to, compensation of the members of the lake board, record compilation and retention, and state, county, or local government professional staff services.

(2) In addition to the amounts computed under subsection (1), the lake board may add not less than 10% or more than 15% of the gross sum to cover contingent expenses, including additional necessary hydrological studies by the department. The sum of the amounts computed under subsection (1) plus the amount added under this subsection is considered to be the cost of the lake improvement project.

(3) A lake board shall not expend money for improvements, services, or other purposes unless the lake board has adopted an annual budget.

(4) A lake board may retain an attorney to advise the lake board in the proper performance of its duties. The attorney shall represent the lake board in actions brought by or against the lake board.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995;—Am. 2004, Act 522, Eff. Mar. 1, 2005.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30928 Intervention by department.

Sec. 30928. Whenever a public inland lake is to be improved, the department may intervene for the protection and conservation of the natural resources of the state.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Popular name: Act 451

Popular name: NREPA

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT (EXCERPT)
Act 451 of 1994

324.30929 Lake board for public inland lake; dissolution.

Sec. 30929. A lake board for a public inland lake is dissolved if all of the following requirements are met:

(a) The governing body of each local unit of government in which all or part of the lake is located holds a public hearing on the proposed dissolution, determines that the lake board is no longer necessary for the improvement of the lake because the reasons for the establishment of the lake board no longer exist, and approves the dissolution of the lake board. The governing body of each local unit of government in which all or part of the lake is located may hold the public hearing on the dissolution of the lake board on its own initiative. The governing body of each local unit of government in which all or part of the lake is located shall hold a public hearing on the dissolution of the lake board upon petition of 2/3 of the freeholders owning land abutting the lake. Notice of the public hearing shall be published twice in a newspaper of general circulation in each local unit of government in which all or part of the lake is located. The first notice shall be published not less than 10 days before the date of the hearing.

(b) All outstanding indebtedness and expenses of the lake board are paid in full.

(c) Any excess funds of the lake board are refunded based on the last approved special assessment roll. However, if the amount of excess funds is de minimis, the excess funds shall be distributed to the local units of government in which all or part of the lake is located, apportioned based on the amounts assessed against each local unit of government and lands in that local unit on the last approved special assessment roll.

(d) The lake board determines that it is no longer necessary for the improvement of the lake, because the reasons for its establishment no longer exist, and adopts an order approving its dissolution.

History: Add. 2004, Act 522, Eff. Mar. 1, 2005.

Popular name: Act 451

Popular name: NREPA

STATE OF MICHIGAN

COUNTY OF OAKLAND

CITY OF NOVI

A RESOLUTION TO ESTABLISH A LAKE BOARD IN ACCORDANCE WITH PART 309, INLAND LAKE IMPROVEMENTS, OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT

RECITALS:

WHEREAS, Walled Lake is a public inland lake located in the City of Novi and the City of Walled Lake in Oakland County, Michigan; and

WHEREAS, Walled Lake is a valuable natural resource that provides swimming, boating, fishing, and other recreational opportunities to area residents; and

WHEREAS, nuisance growth of aquatic plants is inhibiting recreational use and enjoyment of Walled Lake; and

WHEREAS, the establishment of a lake board for Walled Lake pursuant to Part 309, Inland Lake Improvements, of the Natural Resources and Environmental Protection Act, PA 451 of 1994, as amended (hereinafter referred to as Part 309), is essential to the effective management of Walled Lake;

WHEREAS, a public informational meeting concerning the formation of a Lake Board and the potential resulting assessments on affected property owners has been held in the City of Novi.

WHEREAS, the City notified affected property owners of the aforementioned public informational meeting by direct mailing and publication.

NOW, THEREFORE, under the authority of and subject to the provisions of Part 309,

IT IS HEREBY RESOLVED:

1. The City of Novi does hereby create a lake board for Walled Lake upon its own motion pursuant to Section 30902 of Part 309, for the purpose of controlling the nuisance growth of invasive aquatic plants in Walled Lake.

2. The Walled Lake Improvement Board shall initiate proceedings in accordance with Part 309 to implement a program to control nuisance growth of invasive aquatic plants in Walled Lake.

3. The Walled Lake Improvement Board shall determine the scope of the project to control nuisance growth of invasive aquatic plants in Walled Lake and shall establish a special assessment district, including within the special assessment district all parcels of land which will be benefited by the project.

4. Pursuant to Section 30903 of Part 309, the Walled Lake Improvement Board shall consist of the following:

a) A member of the Oakland County Board of Commissioners appointed by the chairperson of the county board of commissioners;

b) A representative of the City of Novi;

c) A representative of the City of Walled Lake;

d) The Oakland County Water Resources Commissioner or his designee;

e) A member elected by the members of the lake board at the first meeting of the lake board. Only a person who has an interest in a land contract or a record interest in the title to land that abuts Walled Lake is eligible to be elected to serve in this capacity.

5. That the City of Novi shall hold a public hearing no later than the first available date after January 1, 2014 on the proposed dissolution of the Walled Lake Improvement Board as set forth in MCL §324.30929(a).

AYES:	(6) Burke, Crawford, Margolis, Mutch, Staudt and Landry
NAYS:	(0)
ABSTENTION:	(0)
ABSENT:	(1) Gatt

CERTIFICATION

It is hereby certified that the foregoing Resolution was adopted by the Novi City Council, Oakland County, Michigan, at a meeting duly called and held on the 12th day of January, 2009.

CITY OF NOVI

BY: Maryanne Cornelius
Maryanne Cornelius, Clerk

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STATE OF MICHIGAN

COUNTY OF OAKLAND

CITY OF WALLED LAKE

A RESOLUTION TO ESTABLISH A LAKE BOARD IN ACCORDANCE WITH PART 309, INLAND LAKE IMPROVEMENTS, OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT

RECITALS:

WHEREAS, Walled Lake is a public inland lake located in the City of Novi and the City of Walled Lake in Oakland County, Michigan; and

WHEREAS, Walled Lake is a valuable natural resource that provides swimming, boating, fishing, and other recreational opportunities to area residents; and

WHEREAS, nuisance growth of invasive, exotic aquatic plants is inhibiting recreational use and enjoyment of Walled Lake; and

WHEREAS, the establishment of a lake board for Walled Lake pursuant to Part 309, Inland Lake Improvements, of the Natural Resources and Environmental Protection Act, PA 451 of 1994, as amended (hereinafter referred to as Part 309), is essential to the effective management of Walled Lake;

WHEREAS, according to a petition submitted to the City, a majority of effected property owners are in favor of creation of a Lake Board; and

WHEREAS, a public informational meeting concerning the formation of a Lake Board and the potential resulting assessments on effected property owners has been held in the City of Novi.

WHERAS, the City notified affected property owners of the aforementioned public informational meeting by direct mailing and publication.

NOW, THEREFORE, under the authority of and subject to the provisions of Part 309,

IT IS HEREBY RESOLVED:

1. The City of Walled Lake does hereby create a lake board for Walled Lake upon its own motion pursuant to Section 30902 of Part 309, for the limited purpose of controlling nuisance growth of invasive, exotic plants in Walled Lake.

2. The Walled Lake Improvement Board shall initiate proceedings in accordance with Part 309 to implement a program to control nuisance growth of invasive, exotic plants in Walled Lake.

3. The Walled Lake Improvement Board shall determine the scope of the project to control nuisance growth of invasive, exotic plants in Walled Lake and shall establish a special assessment district, including within the special assessment district all parcels of land which will be benefited by the project.

4. Pursuant to Section 30903 of Part 309, the Walled Lake Improvement Board shall consist of the following:

a) A member of the Oakland County Board of Commissioners appointed by the chairperson of the county board of commissioners;

b) A representative of the City of Novi;

c) A representative of the City of Walled Lake;

d) The Oakland County Drain Commission or his designee;

e) A member elected by the members of the lake board at the first meeting of the lake board. Only a person who has an interest in a land contract or a record interest in the title to land that abuts Walled Lake is eligible to be elected to serve in this capacity.

5. That this resolution creating a lake board is contingent upon the City of Novi passing a similar resolution creating a lake board for Walled Lake.

AYES: (4) Ambrose, Bennett, Lesnau, Maher
NAYS: (1) Roberts
ABSTENTION: (0)
ABSENT: (2) Carter, Fox

CERTIFICATION

It is hereby certified that the foregoing Resolution was adopted by the Walled Lake City Council, Oakland County, Michigan, at a meeting duly called and held on the 18th day of November, 2008.

CITY OF WALLED LAKE

BY: Catherine Buck
Catherine Buck, Clerk

WALLED LAKE
LAKE IMPROVEMENT BOARD MEETING MINUTES
May 13, 2009

The meeting of the Lake Improvement Board for Walled Lake was held at the Novi Civic Center at 45175 W. 10 Mile Road on May 13, 2009. The meeting was called to order by Brian Coburn, Secretary-Treasurer, at 6:35 p.m.

Present: William Burke, City of Walled Lake
Brian Coburn, Secretary-Treasurer, City of Novi
Eugene Snowden for Karen Warren, Oak. Co. Water Resource Commissioner's Office
Dave Galloway, Riparian Representative
*Jeff Potter, Oakland County Board of Commissioners Representative

Also Present: Mark Roberts, Attorney, Secrest Wardle

At the Public Comment portion of the meeting, a resident spoke about the purpose for formation of the Lake Board, which was strictly for weed control.

Correspondence: Letter from Steve Loe requesting creation of assessment district and project cost estimate prior to awarding bid for engineering study.

Moved by Coburn and Supported by Burke to approve the Minutes of February 11, 2009 and first meeting continuation of March 10, 2009. Motion carried unanimously.

Brian Coburn summarized the eight proposals submitted as bids for the engineering feasibility study. Mark Roberts reminded the Board that all requirements of the law must be addressed by the engineering firm in its bid in order to be viable; some of the firms failed to address all aspects of the Request for Proposals. A member from LAHA requested that Progressive AE's rating be read aloud; the Board complied.

Moved by Potter and Supported by Coburn to award the engineering contract to Spalding DeDecker & Associates. Motion carried unanimously.

Discussion was held regarding attorney fees for the Lake Board; Mark Roberts informed the Board that, once everything was in place, attorney fees would be minimal.

Moved by Potter and Supported by Coburn to approve attorney fees for Mark Roberts from Secrest Wardle. Motion carried unanimously.

Mark Roberts indicated that he will review the contract for Spalding DeDecker. Brian Coburn will check with Spalding DeDecker to determine if it will accept delayed payment.

Wednesday, June 3, 2009, at 6:30 p.m. was selected as the next meeting date to review the contract with Spalding DeDecker. Moved by Burke and Supported by Potter that the meeting be adjourned. Motion carried unanimously at 7:48 p.m.

_____
Brian Coburn, Secretary-Treasurer

* Jeff Potter arrived at 6:45 p.m.

REQUEST FOR PROFESSIONAL SERVICES

WALLED LAKE--LAKE IMPROVEMENT BOARD

March 20, 2009

I. Introduction

The Walled Lake—Lake Improvement Board is seeking proposals from qualified professional engineering consultants (Consultant) to identify problems with Walled Lake and to present recommendations for lake improvements.

The Lake Board intends to contract with an engineering consulting firm that possess the appropriate skills, experience, resources and reputation to complete the project.

The consulting services will be completed in accordance with all applicable federal, state and local regulations, policies and contractual guidelines. Walled Lake is located partially within the City of Novi and partially within the City of Walled Lake. Two copies of all final data will be delivered to the Lake Board in digital format on a DVD or CD-ROM (one copy for each community), accompanied by eight hard copies of all documents. The Lake Board shall review all deliverables from each associated project task before final acceptance.

II. Project Background

Walled Lake is located in Sections 2 and 3, T. 1 N., R. 8. E., City of Novi, and Sections 34 and 35, T. 2 N., R. 8 E., City of Walled Lake, Oakland County, Michigan and has a total surface area of approximately 644 acres and is largely surrounded by residential properties. The City of Walled Lake passed a resolution on November 18, 2008 and the City of Novi passed a resolution on January 12, 2009 for the establishment of a lake improvement board pursuant to Public Act 451 of 1994, the Natural Resources and Environmental Protection Act, as amended for the improvement of Walled Lake. The purpose of the lake board is to provide for the improvement of Walled Lake to control nuisance growth of invasive aquatic plants in Walled Lake.

III. Scope of Work

The consultant will define tasks that meet the requirements of the "Inland Lake Improvements of the Natural Resources and Environmental Protection Act" Part 309 Public Act 451 of 1994, as amended. To be specific, the services will involve the preparation of the following:

- Engineering feasibility report,
- Economic study report, and
- Estimates of cost (including aquatic vegetation control and water quality assessments).

The following services are to be provided by the Consultant, while not all-inclusive, will each be considered for study and report:

A. Analyze aquatic weed growth and make recommendations for removal and control. Prepare a map which shows the locations and types of aquatic vegetation, and approximate lake bottom contours. GIS data is available from the City of Novi or Oakland County Water Resource Commissioner's Office to the selected consultant.

B. Determine the lake water quality with respect to oxygen content and its relationship to fish population; determine possible adverse effects of stratification, and recommend whether aeration and/or other water conditioning is required.

C. Determine lake water quality using the following listed parameters and recommend appropriate action to improve water quality:
    1. *E. Coli*
    2. Ph
    3. Oxygen concentration
    4. Phosphorus concentration
    5. Nitrogen concentration
    6. Chlorophyll a concentration
    7. Sechi disc Transparency
    8. Theoretical nutrient budget

D. Evaluate the lake bottom sediments and associated nutrients, and their removal and appropriate disposal.

E. Investigate alternative methods of lake improvement other than weed control, aeration and dredging, if applicable.

F. Recommend methods to eliminate or reduce future sediment loading of Walled Lake.

G. Prepare estimates of costs for each of the above items, individually, with an analysis of effects of proposed assessments on the local units of government and interested landowners and residents.

H. Submit a schedule for completion based upon a Notice to Proceed.

IV. Proposal Content

The written proposal should focus on the project's specific needs, services to be provided and your specific approach to accomplish the work. The RFP should be presented in 8.5" x 11" format with a minimum font size of 12 and should not exceed fifteen (15) pages.

The information to be included in the proposal is included in Attachment A. It is encouraged to add to your proposal any key elements that are believed to enhance the project's success and best utilize the firm's experience and expertise. The proposal should include a project description and the specific approach, tools, and techniques that will be used to complete this work on schedule. The proposal should be concise and an authorized representative of the Consultant shall sign the proposal.

V. Selection Process

Written proposals submitted by the deadline will be evaluated by the Lake Board based upon the firm's demonstrated ability and specific approaches to best meeting the project needs, including but not limited to: understanding of the project, recent experience with this type of work, experience of the personnel assigned to this project, and compensation for services (cost).

An oral presentation may be required as part of the evaluation process. If an oral presentation is requested, then the project manager and other key team members shall represent the consultant at the presentation.

Based on the written proposal and, if necessary, oral presentation, a consulting firm that best meets the Lake Board's needs will be selected. The Lake Board will initiate an agreement with the selected consultant in terms of the submitted proposal; however, if an agreement cannot be negotiated, then another submitting consultant may be contacted.

The Lake Board reserves the right of not selecting any consultant, rejecting all proposals, or cancelling the project prior to contract execution without any compensation to the selected consultant.

It is the Lake Board's intent to enter into an agreement with the selected consultant to provide services as indentified under Paragraph III, "Scope of Work." The Lake Board reserves the right at its sole discretion to delete or modify any services, thereby affecting the project scope, at any time during the design process. The selected consultant will be entitled to appropriate compensation for work provided to date on such deleted or modified facilities without any additional compensation for theoretical "loss of profit."

VI. Contract Terms and Conditions

The work shall be completed under a not-to-exceed cost contract agreement.

Specific contract terms and conditions shall be negotiated with the Lake Board. It is recognized that a single firm may not offer all of the proposed services and that subconsultants may be included in the submittal. All subconsultants shall be subject to Lake Board approval. The Lake Board reserves the right to contract directly with other firms for additional services. Additionally, the Lake Board will not allow mark-up on

work done by an individual subconsultant if the work by that subconsultant exceeds 50 percent of the total consultant cost.

The Lake Board will not compensate for any work done pertaining to the written proposal and/or oral presentation made in response to this solicitation. The contents and commitments in the RFP shall remain firm for 90 calendar days from the submittal due date.

Insurance and Indemnification

The selected consultant will be required to incorporate the Lake Board's insurance requirements and indemnification language into the final contract, as stated herein. The Consultant shall provide the name of the insurance carrier who will provide the required coverage for this project in the proposal.

Insurance

1) Professional Liability/Errors and Omissions Coverage in the minimum amount of $1,000,000 per occurrence and $2,000,000 aggregate.
2) Commercial General Liability policy in the amount of $1,000,000 combined single limit per occurrence and aggregate, including contractual liability.
3) Comprehensive Automobile Liability Policy to cover bodily injury and property damage arising out of ownership, maintenance or use of any motor vehicle owned, non-owned or hired vehicles in the minimum amount of $1,000,000 combined single limit per occurrence. No fault coverage complying with statutory requirements of the State of Michigan are also required.
4) Workers' Compensation Insurance including Employer's Liability to cover employee injuries or disease compensable under the Workers' Compensation statutes of the State of Michigan Employee's liability coverage shall be in the minimum amount of $500,000 per occurrence.

Indemnification

The Consultant shall agree to indemnify, defend and hold harmless the Lake Board and the Lake Board's agents, from and against any and all claims, loss, liability, damages, costs, and expenses, including, but not limited to, all reasonable fees and charges of attorneys, and other professional services, and other time and expenses incurred by the Lake Board using its own staff and all court or other dispute resolution costs that arise out of and to the extent caused by the negligent acts, errors, or omissions of the Consultant, its agent, subcontractors, or employees, regardless of whether or not such claim, loss, liability damage, cost, or expense is caused or contributed to, in part, by a part indemnified in the contract.

VII. Schedule & Project Contact Information

The following is an anticipated schedule for the RFP process. The Lake Board reserves the right to modify any part of this schedule.

RFP Release:	March 20, 2009
Proposals Due:	April 21, 2009 at 2:00 PM

Board Award: date to be determined in May 2009

Any further questions regarding this project should be directed to:

Brian Coburn, P.E.	City of Novi	bcoburn@cityofnovi.org	248-735-5632
Karen Warren, P.E.	Oakland County WRC	warrenk@oakgov.com	248-858-0598

VIII. Responses

To be considered, eight copies of the RFP must be submitted, in a sealed envelope that is clearly marked with **"Walled Lake Engineering Services"**, to the City of Novi Clerk's Office no later than **2:00 PM, local prevailing time, April 21, 2009**, and shall be addressed to:

Brian Coburn, P.E., Secretary
Walled Lake Lake Improvement Board
c/o City of Novi Clerk's Office
45175 W Ten Mile Road
Novi, MI 48375

IX. Disclosure of Contents

All information provided in the RFP will be held in confidence and will not be revealed or discussed with competitors until the deadline for submission of proposals has expired. Section 13(1) (j) of the Michigan Freedom of Information Act, as amended, provides that a public body may exempt from disclosure as a public record a bid or proposal by a person to enter into a contract or agreement, until the time for the public opening of the bids or proposals, or if a public opening is not conducted, until the deadline for submission of bids or proposals has expired.

Attachment A
PROPOSAL CONTENT

Proposals should address the elements identified below. Whenever discussing a particular team member or past project, please identify the associated consultant/subconsultant if different from the prime consultant.

The proposal shall include the following item:

Section 1: Understanding of the Project
Provide a brief statement as to your understanding of the Lake Board and the Engineering Consultant's role. Include a short narrative description of your proposed work plan and the approach to fulfilling the requirements of the engineering feasibility report, economic study report and cost estimates as required under Public Act 451 of 1994, the Natural Resources and Environmental Protection Act, as amended. Specify methods in approaching the project to address the scope of work and discuss the proposed organization and management tools to be used.

Section 2: Related Project Experience
Indicate the experience of recent work similar to the Lake Board's proposed project. Provide descriptions and references for each project that include the project's budget and schedule of completion, delays and any other pertinent information that can be applied towards this project.

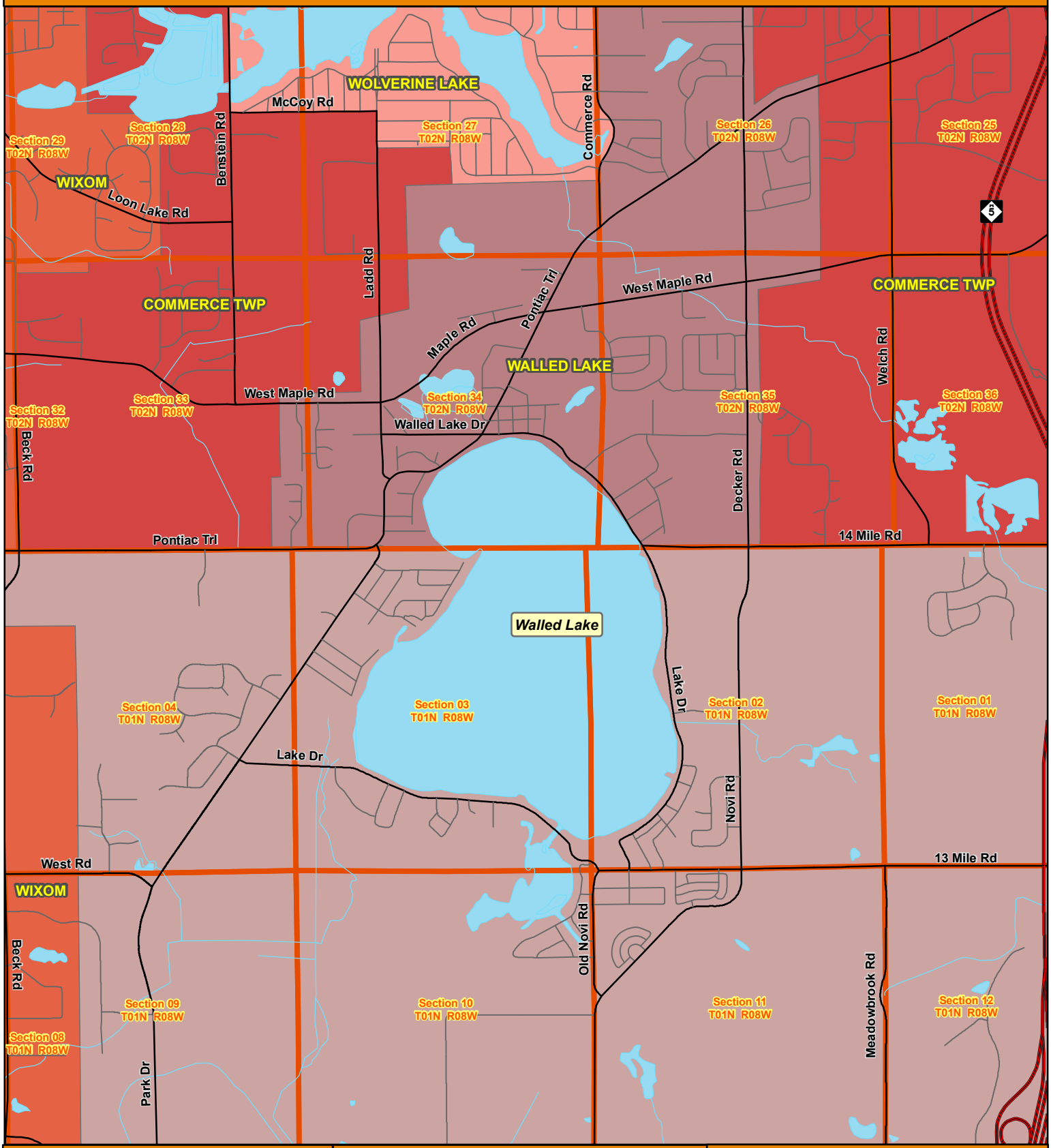
Section 3: Personnel to be assigned the Work (Project Team)
Identify the personnel to be assigned to the project along with a description of their experience and qualifications. Also, provide specific information describing the qualifications of other personnel providing administrative and technical support, if any. Identify the office from where the personnel will be working along with the means of communication such as phone, fax, and email during the project.

Section 4: Compensation for Services (Fee)
Provide an estimate of hours necessary to complete the services outlined in the scope of work. Provide the proposed method for compensation including employee wage rates, overhead and other direct costs associated to furnishing the services quoted as lump sum, not to exceed maximum cost.

Attachment B
Location Map

Walled Lake Location Map

Walled Lake - Lake Improvement Board



CITY OF NOVI

ENGINEERING DIVISION

45175 W. TEN MILE ROAD
NOVI, MI 48375-3024
(248) 347-0454
MAP AUTHOR: CHRIS BLOUGH,
CITY GIS MANAGER

N W E S

0 1,000 2,000 4,000 6,000

FEET

1 INCH = 2,379 FEET

MAP PRINT DATE: 2/23/2009

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Pleased contact the City GIS Manager to confirm source and accuracy information related to this map.

AGREEMENT
Between
SPALDING DEDECKER ASSOCIATES, INC.
and
WALLED LAKE IMPROVEMENT BOARD
NOVI , MICHIGAN
for
PROFESSIONAL ENGINEERING SERVICES

PROJECT: **WALLED LAKE IMPROVEMENT STUDY**
SDA Proposal No.: **PR09-140**

This Agreement is effective this 3RD day of JUNE, 2009, and is between the WALLED LAKE IMPROVEMENT BOARD, c/o City of Novi, 45175 W Ten Mile Road, Novi, MI 48375, hereinafter referred to as the "LAKE BOARD" and SPALDING DEDECKER ASSOCIATES, INC., 905 South Blvd. East, Rochester Hills, Michigan 48307 (hereafter "ENGINEER").

WITNESSETH:

WHEREAS, the LAKE BOARD has determined to undertake a lake improvement study for Walled Lake with the requested scope of services as defined in the Request for Proposals dated March 20, 2009 (attached hereto as Exhibit A), and

WHEREAS, the ENGINEER desires to provide such services, as set forth below, and in the attached and incorporated Exhibits, under the terms and conditions hereof.

WHEREAS, the LAKE BOARD requires the services of Registered Engineers who are qualified and competent to serve in that capacity and perform the functions and services set forth in MCL 324.30909, and

NOW, THEREFORE, in consideration of the covenants and promises hereinafter set, the LAKE BOARD and ENGINEER mutually agree as follows:

1. **General Scope of Services and Term of Agreement:**

   a. For and in consideration of payment by the LAKE BOARD as provided in this Agreement, ENGINEER shall perform the services described herein, including the services described in EXHIBITS A and B attached hereto, in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances, and in compliance with all terms and conditions of this Agreement.

   b. Services shall be provided to the LAKE BOARD in the form of a comprehensive Final Report submitted to the LAKE BOARD for formal acceptance. Project deliverables for the Final Report shall be provided in a form as described in EXHIBIT B: II. Project Approach and Scope of Services, items A-H.

   c. The term of this Agreement shall be for engineering consulting services by the ENGINEER for the preparation of a feasibility study for improvements to Walled Lake in Novi, Michigan for the LAKE BOARD. Services under this Agreement will commence approximately June 3, 2009 and will continue as seasonal conditions allow until September 23, 2009 at which time a “draft” Final Report will

be provided to the LAKE BOARD for review. Upon receiving comments related to the "draft" Final Report by the LAKE BOARD, in writing or orally, the ENGINEER shall revise and submit a Final Report to the LAKE BOARD no later than 14 calendar days thereafter for acceptance of the Final Report. Acceptance of the Final Report shall occur no later than the next regularly schedule LAKE BOARD meeting, but no later than 45 calendar days after submittal.

d. The LAKE BOARD agrees that all documents of the Final Report, including but not limited to: the plans, drawings, or other contracted services are primarily for the use of LAKE BOARD. All documents prepared by the ENGINEER, including tracings, drawings, estimates, specifications, field notes, investigations, studies, reports, computer files, field data, notes, etc., in connection with the performance of its duties under this agreement are instruments of service in respect to this Project, and ENGINEER shall retain ownership and property interest therein (including the right of reuse at the discretion of the ENGINEER) whether or not the Project is completed. The LAKE BOARD acknowledges the Consultant's documents, including electronic files, as instruments of professional service. Nevertheless, the final documents prepared under this Agreement shall become the property of the LAKE BOARD upon completion of the services and payment in full of all monies due to the ENGINEER. The LAKE BOARD shall not reuse or make any modification to the documents without the prior written authorization of the ENGINEER.

2. Payment for Services:

a. The Lump Sum, Not-to-Exceed Fee for the Walled Lake – Lake Improvement Study (including Laboratory Services) is $16,115.00. This fee is inclusive of all Employee Wage Rates, Overhead costs, and Direct or Indirect Service Costs associated with furnishing the services described herein.

b. For services rendered by the ENGINEER, 80% of the fees shall be due and payable no later than 30 days after delivery of the draft report to the LAKE BOARD.

c. For services rendered by the ENGINEER, 100% of the fees shall be due and payable no later than 30 days after acceptance of the final report by the LAKE BOARD.

3. Insurance and Indemnification:

a. Insurance

Prior to commencing work under this Agreement, ENGINEER agrees to provide to the LAKE BOARD the name of its insurance carrier and proof of the required coverage for this project, which is set forth below:

1) Professional Liability/Errors and Omissions Coverage in the minimum amount of $1,000,000 per occurrence and $2,000,000 aggregate.
2) Commercial General Liability policy in the amount of $1,000,000 combined single limit per occurrence and aggregate, including contractual liability.
3) Comprehensive Automobile Liability Policy to cover bodily injury and property damage arising out of ownership, maintenance or use of any motor vehicle owned, non-owned or hired vehicles in the minimum amount of $1,000,000 combined single limit per occurrence. No fault coverage complying with statutory requirements of the State of Michigan are also required.

4) Workers' Compensation Insurance including Employer's Liability to cover employee injuries or disease compensable under the Workers' Compensation statutes of the State of Michigan Employee's liability coverage shall be in the minimum amount of $500,000 per occurrence.

b. Indemnification

By signing this Agreement, ENGINEER agrees to indemnify, defend and hold harmless the Lake Board and the Lake Board's agents, from and against any and all claims, loss, liability, damages, costs, and expenses, including, but not limited to, all reasonable fees and charges of attorneys, and other professional services, and other time and expenses incurred by the Lake Board using its own staff and all court or other dispute resolution costs that arise out of and to the extent caused by the negligent acts, errors, or omissions of ENGINEER, its agent, subcontractors, or employees, regardless of whether or not such claim, loss, liability damage, cost, or expense is caused or contributed to, in part, by a party indemnified in the contract.

This document, including any attached constitutes the entire Agreement between SPALDING DEDECKER ASSOCIATES, INC. and the WALLED LAKE IMPROVEMENT BOARD and shall not be amended, altered or changed, except by written authorization executed by both parties.

WALLED LAKE IMPROVEMENT BOARD

BY: _____
Dave Galloway, Chairperson

_____
In the presence of: Brian Coburn, Secretary

SPALDING DEDECKER ASSOCIATES, INC.

BY: _____
David W. Bluhm, PE, Project Manager

_____
In the presence of:

Healthy Lawn *CARE TIPS:*

Recommended by the Wayne County Department of Environment, Wayne County MSU Extension, Southeastern Oakland County Water Authority (SOCWA) and the Michigan Green Industry Association

www.rougeriver.com

PARTICIPATING COMMUNITIES – ROUGE RIVER WAYNE COUNTY COMMUNITIES

Allen Park	Canton	Dearborn	Dearborn Heights	Detroit	Garden City	Westland
Inkster	Livonia	Melvindale	Northville	Northville Township	Plymouth	Romulus
Plymouth Township	Wayne	River Rouge	Van Buren Township	Redford Township		

Stormwater runoff from home lawns contributes to the pollution of the area rivers and lakes. Problems are created when lawns are "overfed" with too much fertilizer and herbicide, when watering is excessive, and when grass is maintained on steep slopes or near the water's edge. Maintain a green, river-safe lawn by following the healthy lawn practices outlined below.

Healthy Lawn *CARE TIPS:*

Mow Grass High

Leave 3" on the grass blade after cutting. Tall grass promotes root growth and shades out weeds. Let short clips fall back into the lawn, recycling nitrogen in a natural fashion.

Select Earth-Friendly Fertilizers

Select slow-release fertilizers which gradually contribute nitrogen to the grass roots. Slow-release fertilizers protect lakes and streams, promote and protect steady grass growth, protect microbial life in the soil, and do not burn grass. The Healthy Lawn and Garden Technical Advisory Committee for Wayne and Oakland Counties recommends slow-release fertilizers with 50% or more of the nitrogen in slow-release form. For additional water quality protection select a fertilizer with no (or very low) phosphorus. (See the other side for a partial list of recommended fertilizers).

Don't Guess...Soil Test

A soil test indicates nutrient levels already in the soil – a first step in determining how much and what type of fertilizer is needed for the plants you are trying to grow.

Between April 2 and April 24, 2005 you may purchase the MSU soil nutrient testing service (including an organic matter test) through local retailers (telephone 888.223.2363 or see www.rougeriver.com). At any time, soil nutrient tests may be purchased through Wayne County MSU Extension at 313.833.3412.

Nitrogen quantities recommended in the soil test can be reduced by 25% or more if the lawn is in partial shade, if soils already have 5% or more organic matter content, and/or if clippings are left on the lawn.

For information on future

Healthy Lawn Care Workshops

please call 888.223.2363

Sweep Up Fertilizer From Paved Surfaces

Fertilizer left on sidewalks and driveways can easily wash into storm drains, rivers, and lakes. If possible, use a drop spreader—not a rotary spreader. Sweep fertilizer from sidewalks back onto the lawn.

Measure Your Lawn Before Purchasing Fertilizer

Measure the lawn area to be covered then purchase only what you need. Remember, different types of grasses need different amounts of nitrogen to keep them healthy. Over the growing season, Kentucky bluegrass typically requires 4 or more pounds of nitrogen (N) per 1000 square feet, while fescues, ryegrasses, and grass mixtures require less nitrogen.

Leave a "No-Fertilizer" Zone Near Lakes and Rivers

Water quality experts in Michigan and other Midwest states recommend a "no fertilizer" riparian buffer zone with a width of 25 feet or more. Instead of lawn grass, consider native wildflowers, grasses, sedges, and/or shrubs which trap soil and other pollutants.

Avoid Weed-and-Feed Combination Products

Combination fertilizer and weed control products often add unnecessary herbicides to the landscape. A better approach is to identify the weed of concern and selectively spot treat the weed(s). Many people find that a thick, healthy lawn combined with a modest amount of hand weeding, completely eliminates the need for herbicide.

Use Sifted Compost as a Top Dressing

Spread ½ inch of compost over an established lawn. Rake compost into the lawn, leaving a portion of the grass blade exposed to sunlight and air. Compost adds microorganisms, nutrients, and organic matter to help build soil.

Do Not Fertilize Before May

Lawns usually do not need fertilizer in April – especially if they have been fertilized in the fall. Fertilizer in the early spring stimulates rapid, lush growth and increases dangers from disease and pests.

Look for the Earth-Friendly Fertilizer sticker at participating retailers. You can find a list of the retailers at www.rougeriver.com

Examples of Earth-Friendly Fertilizers

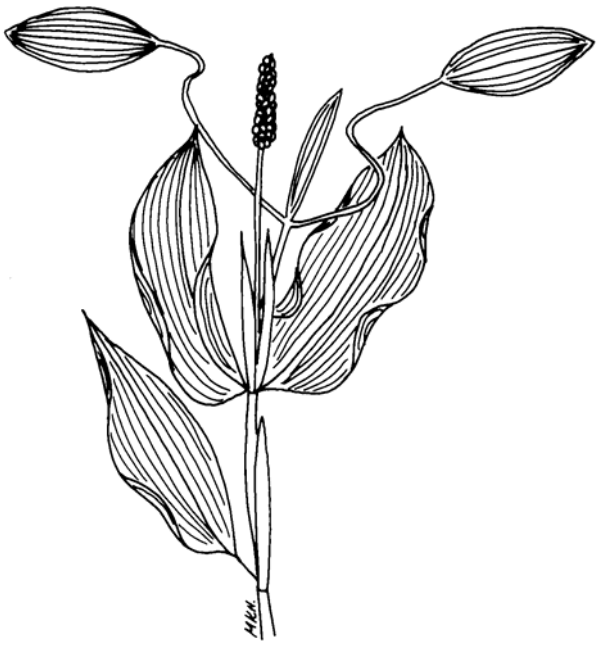
With 50% or more of nitrogen in slow-release form

Clean Green Soy Fertilizer	7-0-0
Corn Gluten pellets	9-0-0
Fertrell Lawn Fertilizer	9-1-4 or 8-1-8
Greenview Low Phosphorus	26-4-12 or 29-2-10
Greenview Zero Phosphorus	27-0-12 or 30-0-12
Pursell's Sta-Green	31-2-4
Ringer Lawn Restore	10-2-6
Vigoro Lawn Fertilizer	29-3-4 or 31-2-4

This is a partial list

Flyer revised with permission from, Southeastern Oakland County Water Authority.
For more information contact Wayne County Department of Environment Environmental Hotline 888-223-2363.
Funded through a grant from the Rouge River National Wet Weather Demonstration Project.

COMMON AQUATIC PLANTS OF MICHIGAN



Prepared By
State of Michigan
Department of Environmental Quality
Water Bureau

EQC 2761
(Rev. 10/05)

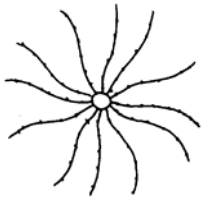
COMMON AQUATIC PLANTS OF MICHIGAN

Following is a description of some of the most commonly occurring aquatic plants in Michigan. Some, such as contain, milfoil, and elodea, reproduce by fragmentation and can quickly reach nuisance density levels.

The pondweeds, genus *Potamogeton*, are highly viable in form and only a few representative types are described here.

If you have an aquatic plant not included here and have difficulty identifying it, refer to a professional consultant. You may also send a small sample in a plastic bag to:

Aquatic Nuisance Control and Remedial Action Unit
Water Bureau
Michigan Department of Environmental Quality
PO Box 30273
Lansing, MI 48909-7773



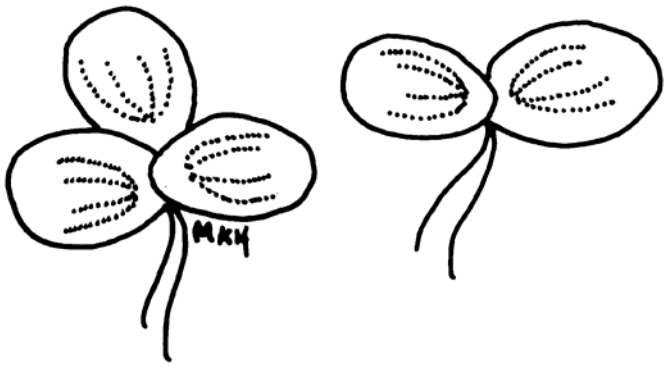
cross-section

Chara *spp.;* stonewart, muskgrass

Chara is an advanced form of algae which resembles higher plants. It is easily identified by its musky odor and gritty texture due to mineral deposits on its surface. Chara rarely creates a nuisance as it usually grows in low, dense mats, or grows sparsely where nutrient levels are low. The water is clear where chara grows densely because, like other algae, it filters nutrients out of the water instead of the sediments. In this respect, chara is highly beneficial vegetation.

Lemna minor; **duckweed**

Duckweed is a floating plant so small that a teaspoon could hold a dozen or more plants. At a distance, a congregation of duckweed plants may resemble algae on the water surface. This plant is common in ponds and quiet water of lakes and streams.



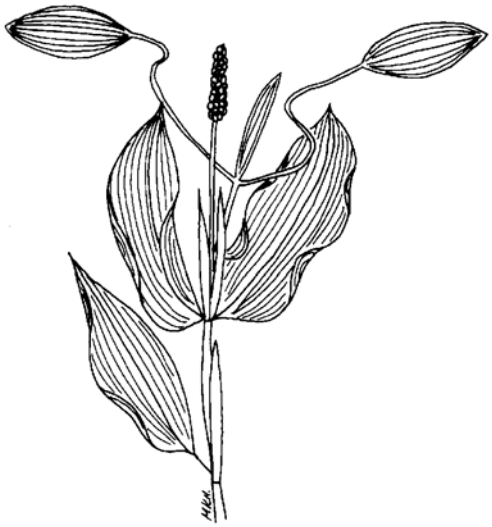
5x actual size

Potamogeton natans; **floating-leaf pondweed**

Floating leaves are slightly heart-shaped. Submerged leaves long and narrow or absent. Flower stalks if present, protrude above water surface.

Potamogeton amplifolius; **large-leaf pondweed**

Floating leaves oval in shape, submerged leaves large, wavy, recurved. Plants seldom branched.



Potamogeton richardsonii; **clasping-leaf pondweed**

Leaves wide and wavy with broad base that clasps the stem. Plant often branches toward tip.

Potamogeton crispus; **curly-leaf pondweed**

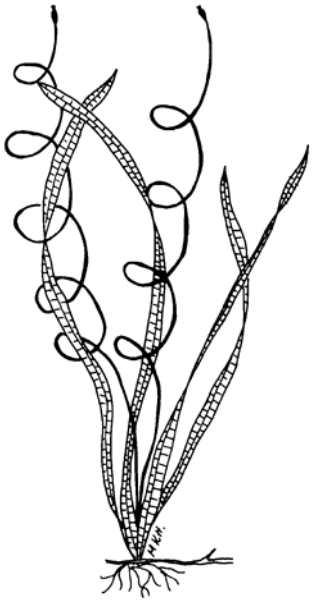
Leaves narrow and crinkled. Leaves arranged alternately around stem, becoming more dense toward end of branches. Flower stalks, if present, protrude above water surface.

Potamogeton pectinatus; **sago pondweed**

Leaves long and thread-like, arranged alternately on stem. Leaves form dense clumps on branches, providing a broom-like appearance. Flower stalks, if present, protrude above water surface.

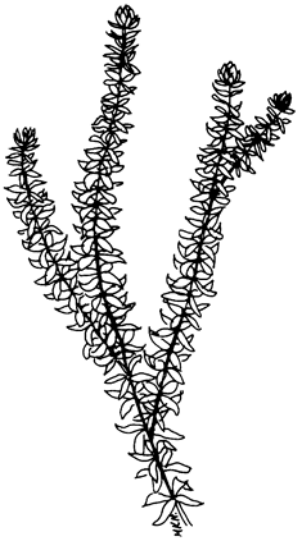
Naja flexilis; **common naiad**

Nodes (swelling) present at base of leaf whorls. Leaves tapered to fine point with minute spines on margin of leaves in some species. Spacing between whorls of leaves highly variable.



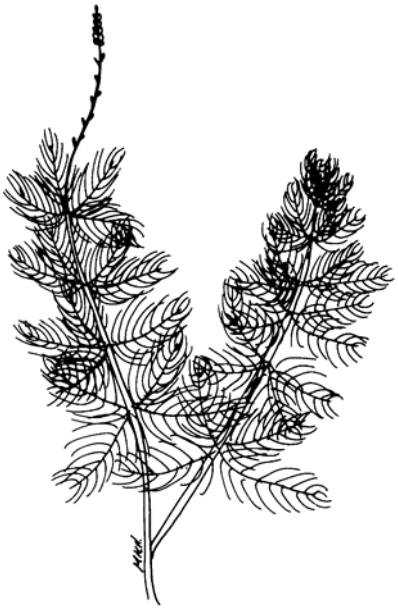
Vallisneria americana; **wild celery**

Roots buried in bottom material. Leaves long and grass-like. Horizontal stem system connects tufts of leaves. Flower stalks, if present, spiral toward surface of water.



Elodea canadensis; **american elodea**

Leaves oval shaped, arranged in whorls around stem. Whorls densely compacted at tips of branches. Commonly used as an aquarium plant.



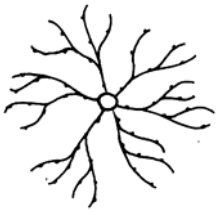
Myriophyllum spp.; **water milfoil**

Milfoil is a submerged plant, however, the flower stalk, when present, protrudes above the water surface. Leaves are arranged in whorls around stem. Leaflets are unforked and arranged in a feather-like pattern (see cross-section illustration). Spacing between whorls varies so that plants may appear long and sparse or bushy. Milfoil can quickly become a nuisance by forming dense mats to the surface of the water.

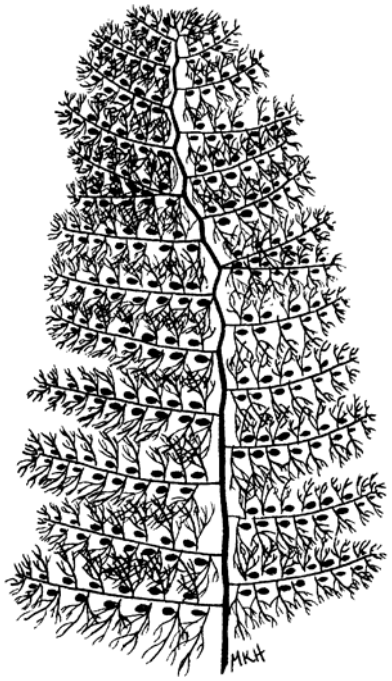
cross-section

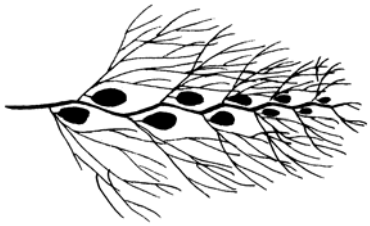
Certophyllum demersum; **coontail**

Coontail is a submerged plant without roots. The leaves are arranged in whorls around the stem. Leaflets are forked, not feather-like as in milfoil (see cross-section illustration). Plants may be long and sparse, but are often bushy, especially toward the tips of branches, resembling a raccoon's tail, hence the common name "coontail."



cross-section





detail of leaf

Utricularia spp.; **bladderwort**

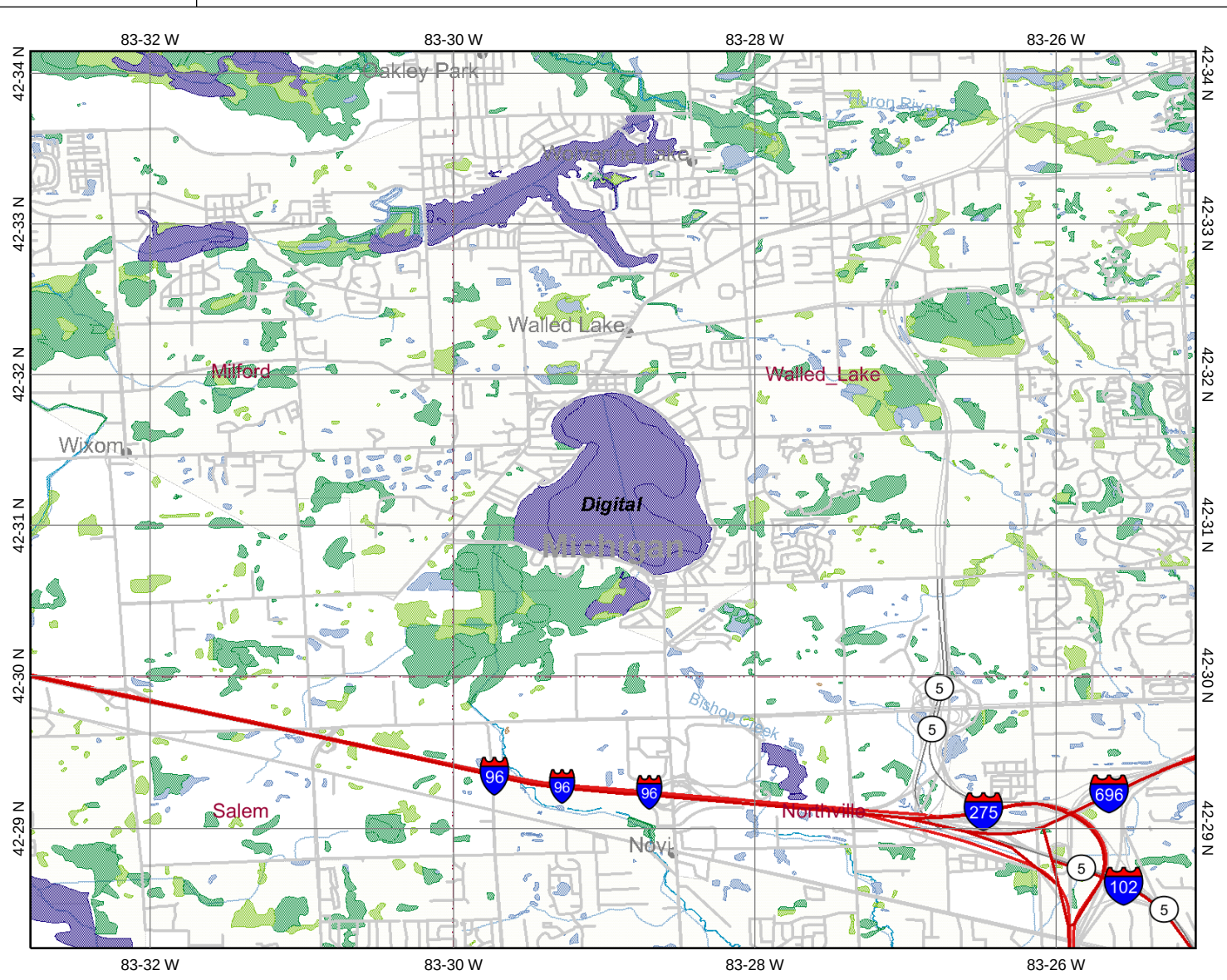
Although bladderwort is not as common as other aquatic plants presented in this article, it is sometimes confused with milfoil. A closer look reveals that the leaflets are branched, not feather-like as on milfoil (see detail illustration). The most distinguishing feature, however, is the presence of bladder-like structures which trap small aquatic invertebrates.
The "bladders" may be large and
dark in color or small and inconspicuous.

Additional References

Introduction to Freshwater Vegetation by Donald N. Riemer, Krieger Publishing Company, Melbourne, Florida, 1993 reprint (hardcover 218 pp.) 1-800-724-0025.

A Manual of Aquatic Plants by N.C. Fassett, revision appendix by E.C. Ogden. University of Wisconsin Press, Madison Wisconsin, 1969 (hardcover, 405 pp.)

Illustrations by Maureen K. Houghton, Michigan Department of Environmental Quality, Environmental Science and Services Division.



Interstate
Major Roads
Other Road
Interstate
State highway
US highway
Roads
Cities
USGS Quad Index 24K
Lower 48 Wetland Polygons
Estuarine and Marine Deepwater
Estuarine and Marine Wetland
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Other
Riverine
Lower 48 Available Wetland Data
Non-Digital
Digital
No Data
Scan
NHD Streams
Counties 100K
Urban Areas 300K
States 100K
South America
North America

DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER BUREAU

AQUATIC PESTICIDES AND RELATED PRODUCTS
CURRENTLY APPROVED FOR USE IN WATERS OF THE STATE

The following products are currently registered with the U.S. Environmental Protection Agency (USEPA) and the Michigan Department of Agriculture (MDA), and have been approved for use in the waters of the state by the Michigan Department of Environmental Quality (MDEQ). A permit may be required prior to treatment. Additional products may be approved in the future, pending registration with USEPA and MDA and satisfactory review by MDEQ.

BRAND NAME	MANUFACTURER	Liquid or Granular	EPA REGISTRATION NUMBERS	MAXIMUM APPLICATION RATE[1]
Reminder: You should confirm that the product you purchase is labeled for your application site.				
+ Indicates that product is in the process of being discontinued and supplies may be limited.				
ALGAECIDES				
CHELATED COPPER				
ALGAE PRO LIQUID COPPER ALGAECIDE+	SEPRO	L	55146-42-67690	0.7 gal/acre-foot, 1.7 gal/acre-foot (macroalgae only)
ALGI-CURE ALGAECIDE	APPLIED BIOCHEMISTS	L	7364-09-8959	1.06 gal/acre-foot, 2.13 gal/acre-foot (macroalgae only)
ALGIMYCIN PWF	APPLIED BIOCHEMISTS	L	7364-09-8959	1.06 gal/acre-foot, 2.13 gal/acre-foot (macroalgae only)
CAPTAIN LIQUID COPPER ALGAECIDE	SEPRO	L	67690-9	0.6 gal/acre-foot, 1.2 gal/acre-foot (macroalgae only)
CUTRINE-PLUS ALGAECIDE/HERBICIDE	APPLIED BIOCHEMISTS	L	8959-10	0.6 gal/acre-foot, 1.2 gal/acre-foot (macroalgae only)
CUTRINE-PLUS GRANULAR ALGAECIDE	APPLIED BIOCHEMISTS	G	8959-12	60 lbs/acre
CUTRINE ULTRA	APPLIED BIOCHEMISTS	L	228-378-4581	0.6 gal/acre-foot, 1.2 gal/acre-foot (macroalgae only)
FORMULA F-30	DIVERSIFIED WATERSCAPES, INC	L	27588-2	2.0 gal/acre-foot
K-TEA ALGAECIDE	GRIFFIN LLC	L	1812-307	0.7 gal/acre-foot, 1.7 gal/acre-foot (macroalgae only)
SYMMETRY ALGAECIDE	PHOENIX ENVIRONMENTAL CARE	L	81943-2	0.7 gal/acre-foot, 1.7 gal/acre-foot (macroalgae only)
COPPER				
AQUA SOLUTIONS	LIFESPAN LLC	L	64962	0.33 gal/acre-foot, 0.55 gal/acre-foot (macroalgae only)
COPPER SULFATE[2]	VARIOUS	G	various	2.6 lbs/acre-foot, 4.4 lbs/acre-foot (macroalgae only)
EARTHTEC	EARTH SCIENCE LABORATORIES, INC.	L	64962-1	0.33 gal/acre-foot, 0.55 gal/acre-foot (macroalgae only)
ENDOTHALL, AMINE SALTS				
HYDROTHOL 191 AQUATIC ALGICIDE & HERBICIDE	CEREXAGRI INC	L	4581-174	2.2 pints/acre-foot
HYDROTHOL 191 AQUATIC ALGICIDE & HERBICIDE+	ELF ATOCHEM N. AMER., AG. CHEM.	L	4581-174	2.2 pints/acre-foot
HYDROTHOL 191 GRANULAR AQUATIC ALGICIDE & HERBICIDE[3]	CEREXAGRI INC	G	4581-172	11 lbs/acre-foot
HYDROTHOL 191 GRANULAR AQUATIC ALGICIDE & HERBICIDE+[3]	ELF ATOCHEM N. AMER., AG. CHEM.	G	4581-172	11 lbs/acre-foot
SODIUM CARBONATE PEROXYHYDRATE				
GREENCLEAN	BIOSAFE SYSTEMS LLC	G	70299-4	17 lbs/acre-foot, 170 lbs/acre-foot (heavy algae growth)
GREENCLEAN PRO	BIOSAFE SYSTEMS LLC	G	70299-6	9 lbs/acre-foot, 90 lbs/acre-foot (heavy algae growth)
PAK 27 ALGAECIDE	SOLVEY CHEMICALS, INC	G	68660-9	16.9 lbs/acre-foot

BRAND NAME	MANUFACTURER	Liquid or Granular	EPA REGISTRATION NUMBERS	MAXIMUM APPLICATION RATE[1]
PHYCOMYCIN SCP ALGAECIDE AND OXIDIZER	APPLIED BIOCHEMISTS	G	68660-9-8959	16.9 lbs/acre-foot
HERBICIDES				
2,4-DICHLOROPHENOXYACETIC ACID (2,4-D)				
AQUACIDE PELLETS[3]	AQUACIDE COMPANY	G	5080-2	100 lbs/acre (milfoil), 200 lbs/acre (coontail, lilies)
AQUA-KLEEN[3]	CEREXAGRI INC	G	228-378-4581	100 lbs/acre (milfoil), 200 lbs/acre (coontail, lilies)
NAVIGATE[3]	APPLIED BIOCHEMISTS	G	228-378-8959	100 lbs/acre (milfoil), 200 lbs/acre (coontail, lilies)
CHELATED COPPER				
COPPER EDA AQUATIC HERBICIDE	APPLIED BIOCHEMISTS	L	8959-54	3.3 gal/acre-foot
CURRENT AQUATIC HERBICIDE	PHOENIX ENVIRONMENTAL CARE	L	81943-1	3.3 gal/acre-foot
HARPOON AQUATIC HERBICIDE	APPLIED BIOCHEMISTS	L	8959-54	3.3 gal/acre-foot
KOMEEN AQUATIC HERBICIDE	GRIFFIN LLC	L	1812-312	3.34 gal/acre-foot
NAUTIQUE AQUATIC HERBICIDE	SEPRO	L	67690-10	3.0 gal/acre-foot
DIQUAT DIBROMIDE[4]				
REWARD LANDSCAPE AND AQUATIC HERBICIDE	ZENECA AG PRODUCTS (SYNGENTA)	L	10182-404	2 gal/acre
REWARD ACCUGEL AQUATIC HERBICIDE	SYNGENTA	L	100-1194	1.25 gal/acre-foot
WEEDTRINE -D- AQUATIC HERBICIDE	APPLIED BIOCHEMISTS	L	8959-9	10 gal/acre
ENDOTHALL, AMINE/DIPOTASSIUM SALTS				
AQUATHOL GRANULAR AQUATIC HERBICIDE+[3]	ELF ATOCHEM N. AMER., AG. CHEM.	G	4581-201	81 lbs/acre-foot
AQUATHOL K AQUATIC HERBICIDE+	ELF ATOCHEM N. AMER., AG. CHEM.	L	4581-204	1.9 gal/acre-foot
AQUATHOL K AQUATIC HERBICIDE	CEREXAGRI INC	L	4581-204	1.9 gal/acre-foot
AQUATHOL SUPER K GRANULAR AQUATIC HERBICIDE[3]	CEREXAGRI INC	G	4581-388	13.2 lbs/acre-foot
AQUATHOL SUPER K GRANULAR AQUATIC HERBICIDE+[3]	ELF ATOCHEM N. AMER., AG. CHEM.	G	4581-388	13.2 lbs/acre-foot
HYDROTHOL 191 AQUATIC ALGICIDE & HERBICIDE	CEREXAGRI INC	L	4581-174	1 gal/acre
HYDROTHOL 191 AQUATIC ALGICIDE & HERBICIDE+	ELF ATOCHEM N. AMER., AG. CHEM.	L	4581-174	1 gal/acre
HYDROTHOL 191 GRANULAR AQUATIC ALGICIDE & HERBICIDE[3]	CEREXAGRI INC	G	4581-172	dependent on target species (see product label) and MDEQ approval
HYDROTHOL 191 GRANULAR AQUATIC ALGICIDE & HERBICIDE+[3]	ELF ATOCHEM N. AMER., AG. CHEM.	G	4581-172	dependent on target species (see product label) and MDEQ approval
FLURIDONE				
AVAST! AQUATIC HERBICIDE	GRIFFIN LLC	L	1812-435	6 parts per billion
AVAST! SRP AQUATIC HERBICIDE	GRIFFIN LLC	G	1812-447	6 parts per billion
SONAR A.S.	SEPRO	L	67690-4	6 parts per billion
SONAR PR PRECISION RELEASE	SEPRO	G	67690-12	6 parts per billion
SONAR Q	SEPRO	G	67690-3	6 parts per billion
SONAR SRP	SEPRO	G	67690-3	6 parts per billion
GLYPHOSATE				
ACCORD CONCENTRATE	DOW AGROSCIENCES LLC	L	62719-324	6.0 pints/acre
ACCORD CONCENTRATE HERBICIDE	MONSANTO AGRICULTURAL PROD CO	L	524-343	6.0 pints/acre
AQUAMASTER HERBICIDE	MONSANTO AGRICULTURAL PROD CO	L	524-343	6.0 pints/acre

BRAND NAME	MANUFACTURER	Liquid or Granular	EPA REGISTRATION NUMBERS	MAXIMUM APPLICATION RATE[1]
AQUANEAT AQUATIC HERBICIDE	CEREXAGRI INC	L	228-365-4581	6.0 pints/acre
AQUANEAT AQUATIC HERBICIDE	NUFARM INC	L	524-343-71368	6.0 pints/acre
AQUAPRO HERBICIDE	SEPRO	L	62719-324-67690	6.0 pints/acre
AQUA STAR	ALBAUGH, INC	L	42750-59	6.0 pints/acre
EAGRE AQUATIC HERBICIDE	GRIFFIN LLC	L	352-609-1812	6.0 pints/acre
HERBICIDES (CONTINUED)				
GLYPHOSATE (CONTINUED)				
GLYFOS AQUATIC HERBICIDE	CHEMINOVA AGRO APS; C/O CHEMIN	L	4787-34	6.0 pints/acre
GLYPRO	DOW AGROSCIENCES LLC	L	62719-324	6.0 pints/acre
RODEO	DOW AGROSCIENCES LLC	L	62719-324	6.0 pints/acre
RODEO EMERGED AQUATIC WEED & BRUSH HERBICIDE	MONSANTO AGRICULTURAL PROD CO	L	524-343	6.0 pints/acre
SHORE-KLEAR AQUATIC HERBICIDE	APPLIED BIOCHEMISTS	L	228-365-8959	6.0 pints/acre
IMAZAPYR				
HABITAT HERBICIDE	BASF CORPORATION	L	241-426	dependent on target species (see product label) and MDEQ approval
TRICLOPYR				
RENOVATE 3	SEPRO	L	62719-37-67690	1.4 gal/acre-foot
RENOVATE OTF	SEPRO	G	67690-42	68 lbs/acre-foot
SWIMMER'S ITCH				
COPPER SULFATE				
COPPER SULFATE CRYSTALS[5]	CHEM ONE LTD	G	56576-1	2 lbs/100 sq. foot
TRIANGLE BRAND COPPER SULFATE CRYSTAL[5]	PHELPS DODGE REFINING CORP	G	1278-8	2 lbs/100 sq. foot
OTHER				
ADJUVANTS, SINK/DRIFT CONTROL				
AGRI-DEX	HELENA CHEMICAL COMPANY	L	N/A	4.0 pints/acre
CYGNET PLUS	BREWER INTERNATIONAL	L	N/A	2.5 pints/acre-foot
POLYAN	BREWER INTERNATIONAL	L	N/A	1.0 gal/acre-foot
TOPFILM	BIOSORB INC	L	N/A	1.0 pint/acre
SHADE PRODUCTS (DYES)				
DYE PRODUCTS LABELED AS HERBICIDES[6]				
ADMIRAL LIQUID	BECKER UNDERWOOD	L	67064-2	0.25 gal/acre-foot
ADMIRAL WSP	BECKER UNDERWOOD	G	67064-1	0.25 gal/acre-foot
AQUASHADE AQUATIC PLANT GROWTH CONTROL	APPLIED BIOCHEMISTS	L	33068-1	0.25 gal/acre-foot
HYDROBLOCK PLANT GROWTH CONTROL	LESCO INC	L	33068-1-10404	0.25 gal/acre-foot
POND CARE ALGAE BLOCKER	AQUARIUM PHARMACEUTICALS INC	L	8709-6	0.25 gal/acre-foot
DYE PRODUCTS NOT LABELED AS HERBICIDES (MANY)				
EXAMPLE: CYGNET SELECT	CYGNET ENTERPRISES	L	N/A	0.25 gal/acre-foot
FORMULA F-40	DIVERSIFIED WATERSCAPES, INC.	L	N/A	0.25 gal/acre-foot

[1] Maximum rate generally approved by the MDEQ. Actual rate required for control may depend on the target species and other site-specific conditions. Refer to product label.

[2] Various copper sulfate products registered with the MDA (517-373-1087) may be used.

[3] Granular endothall and granular 2,4-D products may not be applied within 75 feet of any well OR within 250 feet of wells less than 30 feet deep. Isolation distances are measured

BRAND NAME	MANUFACTURER	Liquid or Granular	EPA REGISTRATION NUMBERS	MAXIMUM APPLICATION RATE[1]
from the well location, not the shoreline.				
[4] Reward products are on MDA's restricted use pesticide list. You must be a certified applicator to use these products in waters of the state, except for small ponds that have no outflow and are under the control of the user. Weedtrine-D is not a restricted use pesticide. However, it can only be used in ponds, lakes, and drainage ditches where there is little or no outflow of water and which are totally under the control of the product's user.				
[5] The medium granular size should be used.				
[6] Only dyes that are labeled as herbicides must be registered with the USEPA and MDA. Dye product labels which claim herbicidal properties cannot be used in waterbodies where there is an outflow.				

Updated 4/8/09

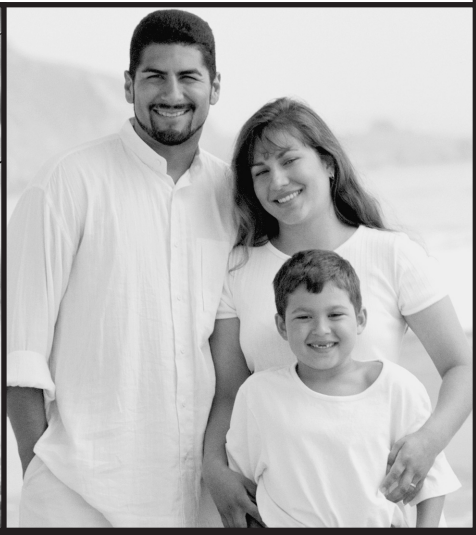
ACCEPTABLE MICHIGAN BACTERIAL AUGMENTATION PRODUCTS

The following products have been reviewed and are approved for use in Michigan surface waters only with authorization by the Michigan Department of Environmental Quality through the Rule 97 Certification process (see: http://www.michigan.gov/deq) and according to manufacturers' label restrictions and additional stipulations listed below.

- Airmax Pond Clear Defense Packets
- Airmax Muck Away Blocks
- Aquaclear
- Aqua-Prep "Enzyme Solution" (***not*** "Protein Solution") (maximum allowable dose is 0.124 gallons per acre foot)
- Aqua-T
- AQUA-VIVE Pond Bacteria
- Bacti-Klear Pellets
- Bioblend II WSP
- Biosafe Sludgebugs
- C-FLO
- C-FLO-6
- EasyPro Pond-Vive
- EasyPro All-Season Pond Bacteria
- EasyPro Sludge Remover Bacteria
- EasyPro Sludge Remover Bacteria
- Blocks\ F-50 Biopure
- F-51 Sludge Reducer
- F-55 Biozyme
- GLB WC Enzymes and Bacteria
- GLB WC Liquid Bacteria
- GLB WC Dry Bacteria
- GLB WC VA Dry Bacteria
- GLB WQ Enzymes
- GLB SC Enzymes and Bacteria
- GLB SC Liquid Bacteria
- GLB SC Dry Bacteria
- GLB SC VA Dry Bacteria
- GLB VA SC Pellets
- GLB ST Enzymes
- In-Pipe Bio-25(C)
- Microsorb
- Mukk Busster pellets
- Nice-n-Easy (Power Pond Cleaner)
- Novozyme SM-700
- Nutri-sorb
- Pond Clear (Liquid)
- Pond Treat
- Pond Logic Muck Defense
- Pond Logic Nature's Defense
- Pond Logic Seasonal Defense
- Power Pond Cleaner (Nice-n-Easy)
- VitaStim Polar
- VitaStim 6000
- VitaStim 2200
- VitaStim 4001

2009 MICHIGAN FAMILY FISH CONSUMPTION GUIDE

Important facts to know if you eat Michigan fish



MDCH Division of Environmental Health• 1-800-648-6942

Visit us on the web at www.michigan.gov/fishandgameadvisory

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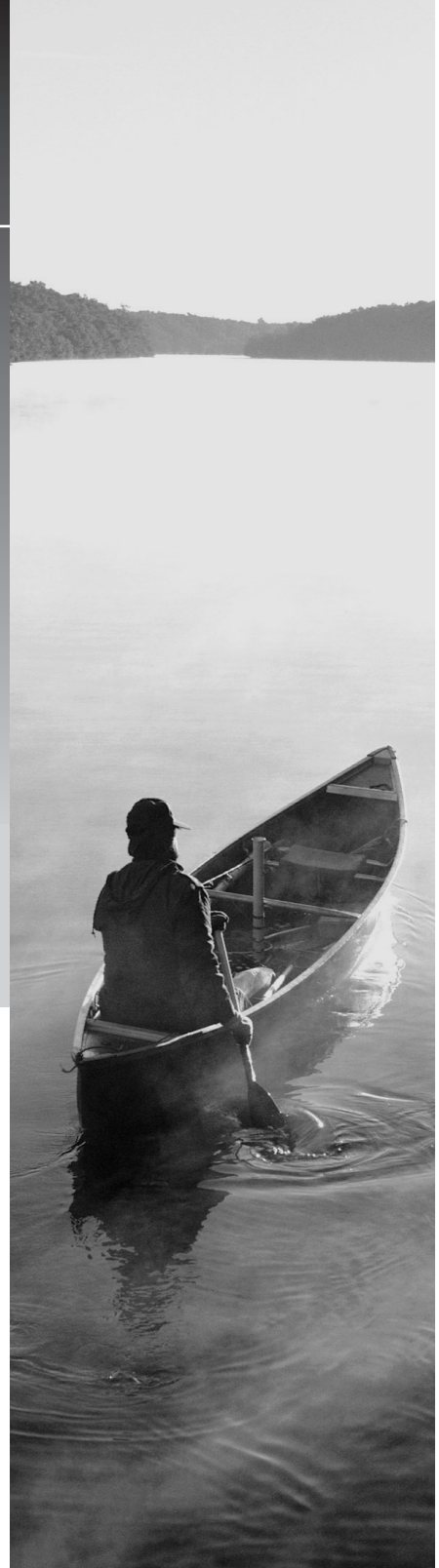
Contact the Michigan Department of Community Health
1-800-648-6942
or
www.michigan.gov/fishandgameadvisory



HEALTH BENEFITS AND RISKS OF EATING FISH

HEALTH BENEFITS OF EATING FISH

Fish are a great low-fat source of protein, vitamins and minerals. The omega-3 oils found in fish are important for the healthy brain development of babies during pregnancy, breast-fed babies and children. Eating fish can also reduce the risk of heart disease in adults. The American Heart Association recommends that adults eat fish two times a week.

Health Risks of Eating Fish

MDCH advises women of childbearing age and children under 15 years old to be extra careful before eating certain types of fish in Michigan.

Many chemicals end up in lakes, rivers, oceans and in some of the fish we eat. Eating polluted fish won't make you sick right away. But the chemicals found in fish can build up in your body and make you very sick later on. Some of these chemicals can harm your immune system, reproductive system, brain functions, or increase your risk of cancer. Children and babies that get too much of these chemicals may develop physical, mental or behavioral problems that they would not have had otherwise.

Get the Benefits and Avoid the Risks

Use Michigan's Fish Consumption Guides:

The Michigan Department of Community Health wants you to know that there are many types of fish that make good food choices. But you should be cautious about eating some other types of fish too often. Use the information found in Michigan's fish eating guides to find fish that are good for you and your family.

- *Michigan Family Fish Consumption Guide*: This is the booklet you are reading. It has information for men, women and children about eating different kinds of fish from Michigan's lakes and rivers.

- *Eat Safe Fish*: This brochure has information for families about eating fish. It also lists some types of fish that are low in mercury.

These guides are available at:
http:www.michigan.gov/fishandgameadvisory.

5 SIMPLE TIPS FOR EATING SAFE FISH

1. Trimming and Cooking

    - Cut off all the fat (see page 4 for directions).
    - Remove or poke holes in the fish's skin before cooking. This will help the fat and chemicals drain off the fish.
    - Bake, broil or grill the fish on a rack. Throw away the drippings.
    - Do not eat the guts, head, skin, bones or dark fatty areas.
    - Do not re-use the oil that was used to deep or pan fry fish.

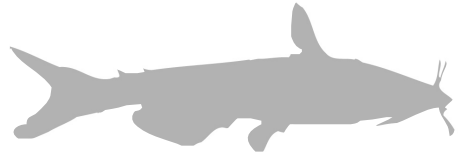
2. Eat fish from different places such as the grocery store, restaurants, rivers and lakes.

3. Eat smaller, younger fish. Bigger and older fish have had more time to collect more chemicals in their bodies.

4. Don't eat fatty fish like carp and catfish from polluted waters. Most chemicals (except for mercury) collect in the fat. Buy catfish from your grocery store instead.

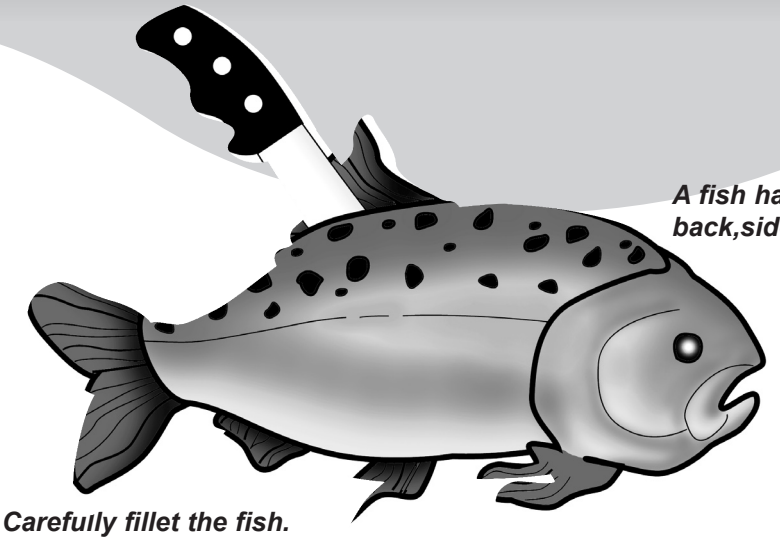
5. Mercury stays in the filet of the fish and cannot be cut or cooked away. Use the MDCH guides to choose fish that are low in mercury.

Do not eat any of the internal organs of any fish from any water body (example: liver).



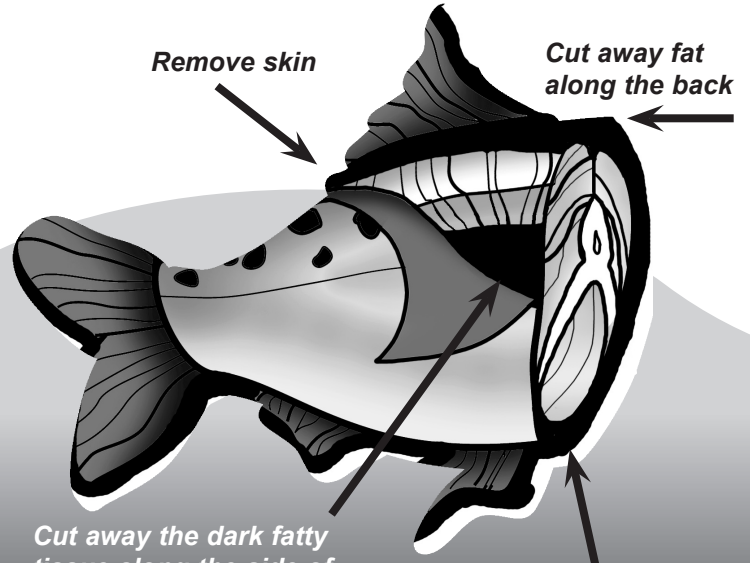
COOKING AND CLEANING FISH

Important reminders.



A fish has fat on its back,sides and belly.

Carefully fillet the fish.



Mercury Advisory

Statewide Mercury Fish Consumption Advisory For All Inland Lakes, Reservoirs and Impoundments

Follow this Statewide Mercury Advisory for the lakes, reservoirs and impoundments that are not listed in this booklet. Note: the Statewide Mercury Advisory does not apply to the Great Lakes or rivers in Michigan.

For the General Population:

- **No one should eat** more than one meal a week of rock bass, yellow perch or crappie over 9 inches in length from inland lakes, reservoirs or impoundments in Michigan.
- **No one should eat** more than one meal a week of large-mouth bass, smallmouth bass, walleye, northern pike or muskellunge of any size from inland lakes, reservoirs or impoundments in Michigan.

For Women and Children:

- **Women and children under 15 years old should not eat** more than one meal per month of rock bass, yellow perch or crappie over 9 inches in length from inland lakes, reservoirs or impoundments in Michigan.
- **Women and children under 15 years of age should not eat** more than one meal per month of largemouth bass, smallmouth bass, walleye, northern pike or muskellunge of any size from inland lakes, reservoirs or impoundments in Michigan.

Nationwide Mercury Fish Consumption Advisory for Store Purchased Fish

Read "Eat Safe Fish". This guide has advice for you about eating restaurant and store-bought fish.

HOW TO USE THE GUIDE

The Michigan Family Fish Consumption Guide has advice about eating fish from different water bodies, of different species and of different lengths. The information is found on pages 8-57.

Step One:

Find the Great Lakes watershed that your lake or river is closest to. The watershed is listed at the top of the page. If you are not sure which watershed is the right one, check the two Great Lakes that are closest to where you are fishing.

- Erie page 8
- Huron page 20
- Michigan page 30
- Superior page 52

Step Two:

Find the name of your lake or river in the first column.

Step Three:

Find the type of fish that you are fishing for in the second column.

Why doesn't the fish consumption guide list every lake, river and reservoir?

Some water bodies may not be listed because:

1. Fish from the water body have never been tested for chemical contaminants. Michigan has more than 11,000 lakes and 36,000 miles of rivers and streams in addition to the Great Lakes. Waters are more likely to be selected for fish contaminant testing if the water body has known contaminant problems, high recreational use or may provide useful environmental information.

2. Fish from the water body have been tested but are covered by Statewide Mercury Fish Consumption Advisory for Inland Lakes, Reservoirs and Impoundments.

Step Four:

Find the column that matches the person(s) who will eat the fish.

- General Population means: Adult men. Boys 15 years or older. Women beyond childbearing age.
- Women & Children means: Women ages 15 and older who are pregnant or may become pregnant in the future. Children under the age of 15 years old.

Step Five:

Find the length of your fish. The symbol on the table matches the the advice about eating the fish. This is what the symbols mean:

- ▲ No eating restrictions.
- ▼ One meal per week.
- ● One meal per month.
- ■ Six meals per year.
- ◆ Do not eat these fish.

Follow the Statewide Mercury Fish Consumption Advisory found on page 5 for inland lakes, reservoirs, and impoundments not listed on pages 8-57.

Meal Size

For adults: 8 ounces when weighed uncooked; 6 ounces when cooked
For children: 4 ounces when weighed uncooked; 3 ounces when cooked

For More Information

For more information on the Fish Consumption Advisory, visit our website at www.michigan.gov/fishandgameadvisory or call 1-800-648-6942.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Erie Watershed	For water bodies that are not listed, read the Mercury Advisory on page 5.																			
Lake Erie # (Includes North Maumee Bay)	Carp	Mercury, PCBs, Dioxins	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Catfish	PCBs, Dioxins	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Chinook Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	●
	Coho Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	●
	Freshwater Drum	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Lake Trout	PCBs			▲	▲	▲	▲	▲	▲	▲			■	■	■	■	■	■	■
	Rainbow Trout (Including Steelhead)	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	●
	Largemouth Bass and Smallmouth Bass	PCBs					▲	▲	▲	▲						●	●	●	●	
	Walleye	PCBs				▲	▲	▲	▲	▲	▲					●	●	●	●	●
	White Bass	PCBs	▲	▲	▲	▲	▲	▲				●	●	●	●	●	●			
	Whitefish	PCBs, Dioxins	▼	▼	▼	▼	▼	▼	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	White Perch	PCBs	▲	▲	▲	▲						●	●	●	●					
	Yellow Perch	PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
Barton Pond* (Huron River, Washtenaw Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Belleville Lake* (Huron River, Wayne Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	■	■
	Gizzard Shad	PCBs	▲	▲	▲	▲	▲	▲				●	●	●	●	●	●			
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	●	●	●	●
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲		●	●	●	●	●	●	●	●	
Black Creek (Lenawee Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●

\# Also applies to connecting rivers where fish may be caught.

* See Mercury Advisory on page 5.

An empty box in the chart means one of two things:

- Small lengths: Fish this size may not be legal to keep. Check with the DNR at www.michigan.gov/dnr.
- Longer lengths: Fish do not usually grow to this size.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Erie Watershed	For water bodies that are not listed, read the Mercury Advisory on page 5.																			
Cass Lake* (Oakland Co.)	Smallmouth Bass	Mercury, PCBs					▼	▼	▼	▼						●	●	●	●	
	Walleye	Mercury, PCBs					▼	▼	▼	▼	▼					●	●	●	●	●
Clear Spring Lake* (Macomb Co.)	Largemouth Bass	Mercury, PCBs					▲	▼	▼	▼						▼	●	●	●	
Clinton River (Downstream of Yates Dam, Macomb Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	■	■	■	■
	Rock Bass	PCBs	▲	▲	▲	▲	▲					▲	▼	▼	▼	▼				
	Suckers		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Detroit River	Carp	PCBs, Dioxins	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Freshwater Drum	Mercury, PCBs	▲	▲	▲	▲	▲	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●
	Northern Pike	PCBs							▲	▲	▲							●	●	●
	Sturgeon	Mercury, PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲		▼	▼	▼	▼	▼	●	●	●	
	Walleye	PCBs				▲	▲	▲	▲	▲	▲				●	●	●	●	●	●
	Yellow Perch	PCBs	▲	▲	▲	▲	▲					▲	▲	▼	▼	▼				
	All Other Species	PCBs, Dioxins, Mercury	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●
Ford Lake* (Washtenaw Co.)	Black Crappie	PCBs	▲	▲	▲	▲	▲	▲				▼	▼	▼	▼	▼	▼			
	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Channel Catfish	PCBs				▲	▲	▲	▲	▲	▲				▼	▼	●	●	●	●
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	▼	▼	▼	▼
Hudson Lake* (Lenawee Co.)	Carp	Mercury	▲	▲	▲	▲	▲	▲	▲	▼	▼	▲	▲	▲	▲	▲	▲	▲	●	●
	Largemouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Kent Lake* (Oakland Co.)	Black Crappie	Mercury, PCBs	▲	▲	▼	▼	▼	▼				▲	▲	●	●	●	●			
	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Largemouth and Smallmouth Bass	PCBs					▲	▲	▲	▲						▼	▼	▼	▼	
	Walleye	PCBs					▲	▲	▲	▲	▲					●	●	●	●	●

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Erie Watershed	For water bodies that are not listed, read the Mercury Advisory on page 5.																			
Lake Orion* (Oakland Co.)	Carp	PCBs, Chlordane	▲	▲	▲	▲	▲	▲	▲	◆	◆	▲	▲	▲	▲	▲	▼	▼	◆	◆
	Largemouth Bass	Mercury					▼	▼	▼	▼						●	●	●	●	
	Northern Pike	Mercury, PCBs							▼	▼	▼							●	●	●
Lake St. Clair	Bluegill	PCBs	▲	▲	▲	▲						▼	▼	▼	▼					
	Brown Bullhead	Mercury	▲	▲	▲	▲	▼					▲	▲	▲	▲	●				
	Carp	PCBs	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●
	Carpsucker	Mercury	▲	▲	▲	▲	▲	▼	▼	▼	▼	▲	▲	▲	▲	▲	●	●	●	●
	Channel Catfish	PCBs				▲	▲	▲	▼	▼	▼				▼	▼	■	◆	◆	◆
	Largemouth and Smallmouth Bass	Mercury, PCBs					▼	▼	▼	▼						●	●	●	●	
	Northern Pike	Mercury							▲	▼	▼							▲	●	●
	Muskellunge	Mercury, PCBs									◆									◆
	Sturgeon	PCBs									▲									●
	Walleye	Mercury, PCBs				▲	▲	▲	▼	▼	▼				▼	▼	▼	●	●	●
	White Bass	Mercury, PCBs	▲	▲	▲	▼	▼	▼				●	●	●	●	●	●			
	White Perch	Mercury	▲	▲	▼	▼						▲	▲	●	●					
Loon Lake* (Oakland Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
	Largemouth and Smallmouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Maceday Lake* (Oakland Co.)	Northern Pike	Mercury, PCBs							▼	▼	▼							●	●	●
Norvell Lake* (Jackson Co.)	Largemouth Bass	Mercury					▲	▼	▼	▼						▲	▼	▼	▼	
Osmun Lake* (Oakland Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	■	■
	Largemouth Bass	PCBs, Mercury					▼	▼	▼	▼						●	●	●	●	

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population: Length (inches) 6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	Women & Children: Length (inches) 6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Erie Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Ottawa River (Monroe Co.)	Largemouth Bass	Mercury					▲	▲	▲	▲						●	●	●	●	
	All other species	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Pine River (St. Clair Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼
Pontiac Lake* (Oakland Co.)	Channel Catfish	Mercury, PCBs				▲	▲	▲	▼	▼	▼				▼	▼	▼	●	●	●
River Raisin (Upstream of Monroe Dam, Monroe & Lenawee Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
River Raisin, (Downstream of Monroe Dam, Monroe Co.) **and Plum Creek**	Black Buffalo	PCBs	▲	▲	▲	▲	◆	◆	◆	◆	◆	■	■	■	■	◆	◆	◆	◆	◆
	Carp	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Channel Catfish	PCBs				◆	◆	◆	◆	◆	◆				◆	◆	◆	◆	◆	◆
	Freshwater Drum	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Smallmouth Bass	PCBs					▼	▼	▼	▼						■	■	■	■	
	White Bass	PCBs	▲	▲	▼	◆	◆	◆				■	■	■	◆	◆	◆			
River Raisin, South Branch (Lenawee Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Northern Pike	PCBs							▲	▲	▲							●	●	●
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲		▼	▼	▼	●	●	●	●	●	
Rouge River (Main or Upper Branch upstream of M-153/Ford Road, Wayne & Oakland Co.)	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Rouge River (Phoenix Lake, Wayne Co.)	Bluegill	PCBs	▲	▲	▲	▲						▼	▼	▼	▼					
	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●
	Northern Pike	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population – Length (inches)									Women & Children – Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Erie Watershed	For water bodies that are not listed, read the Mercury Advisory on page 5.																			
Rouge River (Newburgh Lake, Wayne Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Channel Catfish	PCBs				▲	▲	▲	▲	▲	▲				●	●	●	●	●	●
	Largemouth Bass	PCBs					▲	▲	▲	▲						▼	▼	▼	▼	
	Northern Pike	PCBs							▲	▲	▲							●	●	●
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	●	●	●	●	●
Rouge River (Middle Branch downstream of Newburgh Lake and Main Branch downstream of M-153/Ford Road, Wayne Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	◆	■	■	■	■	■	■	■	■	◆
	Catfish	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Largemouth and Smallmouth Bass	PCBs					◆	◆	◆	◆						◆	◆	◆	◆	
	Northern Pike	PCBs							▲	▲	▲							■	■	■
	Rock Bass	PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	■	■	■	■	■
	All other species	PCBs	▼	▼	▼	▼	▼	▼	▼	▼	▼	◆	◆	◆	◆	◆	◆	◆	◆	◆
Rouge River Lower Branch and Main Branch (Downstream of Ford Dam)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	◆	◆	■	■	■	■	■	■	■	◆	◆
	Suckers	PCBs	▲	▲	▲	▲	◆	◆	◆	◆	◆	■	■	■	■	◆	◆	◆	◆	◆
Terry Lake* (Oakland Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	●	●	●	●
St. Clair River	Carp	Mercury, PCBs	▲	▲	▲	▲	▲	▲	▼	▼	◆	▲	▲	▲	▼	●	●	■	◆	◆
	Freshwater Drum	Mercury, PCBs	▲	▲	▲	▲	▼	▼	▼	▼	▼	▲	▲	▲	▲	●	●	●	●	●
	Gizzard Shad	Mercury, PCBs	▲	▲	▼	▼	▼	▼				▼	●	◆	◆	◆	◆			
	Walleye	Mercury, PCBs					▲	▲	▼	▼	▼					●	●	●	●	●
Stony Creek Impoundment* (Macomb Co.)	Northern Pike	Mercury, PCBs							▼	▼	▼							●	●	●
Unnamed Lake* (Washtenaw Co., T3S, R7E, S26)	Bullhead	PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
	Largemouth Bass	Mercury, PCBs					▼	▼	▼	▼						●	●	●	●	

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches) 6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	Women & Children — Length (inches) 6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Erie Watershed	For water bodies that are not listed, read the Mercury Advisory on page 5.																			
Walled Lake* (Oakland Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	●	●	●
	Northern Pike	Mercury, PCBs							▼	▼	▼							●	●	●
Whitmore Lake* (Livingston Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼
Woodland Lake* (Livingston Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼
	Largemouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
***All Inland lakes, reservoirs, and impoundments** (mercury advisory)	Crappie	Mercury	▲	▼	▼	▼	▼	▼				▲	●	●	●	●	●			
	Largemouth and Smallmouth Bass	Mercury					▼	▼	▼	▼						●	●	●	●	
	Muskellunge	Mercury									▼									●
	Northern Pike	Mercury							▼	▼	▼							●	●	●
	Rock Bass	Mercury	▲	▼	▼	▼	▼					▲	●	●	●	●				
	Walleye	Mercury					▼	▼	▼	▼	▼					●	●	●	●	●
	Yellow Perch	Mercury	▲	▼	▼	▼	▼					▲	●	●	●	●				

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Huron Watershed	For water bodies that are not listed, read the Mercury Advisory on page 5.																			
Lake Huron # (For species not listed follow Saginaw Bay advisory below)	Brown Trout	PCBs			▲	▲	▲	▼	▼	▼	▼			●	●	●	◆	◆	◆	◆
	Burbot	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
	Chinook Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	●
	Coho Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	●
	Lake Trout	PCBs, Dioxins			▼	▼	▼	▼	▼	◆	◆			◆	◆	◆	◆	◆	◆	◆
	Rainbow Trout (Including Steelhead)	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	●
	Whitefish	PCBs, Dioxins	▲	▲	▲	▲	▲	▼	◆	◆	◆	▼	▼	▼	▼	▼	◆	◆	◆	◆
	All other species	PCBs, Dioxins	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●
Saginaw Bay # Lake Huron (For all other species follow Lake Huron advisory above)	Carp, Catfish	PCBs, Dioxins	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Freshwater Drum	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
	Smallmouth Bass	PCBs, Dioxins					▼	▼	▼	▼						◆	◆	◆	◆	
	Walleye	PCBs, Mercury, Dioxins					▲	▼	▼	▼	▼					●	◆	◆	◆	◆
	White Bass	PCBs, Dioxins	◆	◆	◆	◆	◆	◆				◆	◆	◆	◆	◆	◆			
	Yellow Perch	PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
Thunder Bay # (Also follow **Lake Huron** advisories above)	Carp	PCBs, Dioxins	▲	▲	▲	▲	▲	◆	◆	◆	◆	▼	▼	▼	▼	▼	◆	◆	◆	◆
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	▼	●	●	●
Au Sable River (At Oscoda, Iosco Co.)	Carp	PCBs	▼	▼	▼	▼	▼	▼	▼	▼	▼	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Walleye	Mercury, PCBs					▲	▲	▲	▼	▼					▼	●	●	●	●
Au Sable River (Between Alcona & Mio Dams, Alcona & Oscoda Co.)	Walleye	Mercury					▼	▼	▼	▼	▼					●	●	●	●	●
Bad River (Gratiot & Saginaw Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●
	Channel Catfish	PCBs				▲	▲	▲	▲	▲	▲				▼	▼	●	◆	◆	◆
	Northern Pike	PCBs							▲	▲	▲							▼	▼	▼

Also applies to connecting rivers where fish may be caught.
* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Huron Watershed	For water bodies that are not listed, read the Mercury Advisory on page 5.																			
Black River (Sanilac Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼
Burt Lake* (Cheboygan Co.)	Walleye	Mercury					▲	▼	▼	▼	▼					▲	●	●	●	●
Cass River (Downstream of Bridgeport, Saginaw Co.)	Carp	PCBs, Dioxins	▼	▼	▼	▼	▼	▼	▼	▼	▼	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Channel Catfish	PCBs, Mercury, Dioxins				▲	◆	◆	◆	◆	◆				▼	◆	◆	◆	◆	◆
	Northern Pike	PCBs							▲	▲	▲							▼	●	●
Cass River (Upstream of Bridgeport, Saginaw Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Northern Pike	Mercury							▲	▼	▼							▲	●	●
Cass River (Upstream of Caro Dam, Tuscola Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
	Sucker	Mercury	▲	▲	▲	▲	▲	▲	▼	▼	▼	▲	▲	▲	▲	▲	▲	●	●	●
Cheboyganing Creek (Saginaw Co.)	Carp	PCBs	▼	▼	▼	▼	▼	▼	◆	◆	◆	●	●	●	●	●	●	◆	◆	◆
	Northern Pike	PCBs							▲	▲	▲							●	●	●
Chippewa River (Midland Co.)	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Ess Lake* (Montmorency Co.)	Northern Pike	Mercury							▲	▼	▼							▼	●	●
Five Lakes* (Clare Co.)	Largemouth Bass	Mercury					▲	▼	▼	▼						▼	●	●	●	
Flint River (Downstream of Flint, Genesee Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	◆	●	●	●	●	●	●	●	●	◆
	Smallmouth Bass	PCBs					▲	▲	▲	▲						▼	▼	▼	▼	
Frenchman Lake* (Chippewa Co.)	Northern Pike	Mercury							▲	▼	▼							▼	●	●
Gaylanta Lake* (Montmorency Co.)	Northern Pike	Mercury							▲	▼	▼							▼	●	●
Holloway Reservoir* (Genesee Co.)	Channel Catfish	PCBs				▲	▲	▲	▲	▲	▲				●	●	●	●	●	●
Kawkawlin River (Bay Co.)	Carp	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Northern Pike	PCBs							▲	▲	▲							●	●	●

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Huron Watershed	For water bodies that are not listed, read the Mercury Advisory on page 5.																			
Kearsley Reservoir* (Genesee Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	●	●
	Largemouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Lake Emma* (Presque Isle Co.)	Northern Pike	Mercury	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●
Lake Esau* (Presque Isle Co.)	Smallmouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Lobdell Lake* (Genesee Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	●
Long Lake* (Presque Isle Co.)	Smallmouth Bass	Mercury					▲	▼	▼	▼						▼	●	●	●	
Peach Lake* (Ogemaw Co.)	Northern Pike	Mercury							▲	▼	▼							▼	●	●
Pine River* (Alma Impoundment, Gratiot Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	●	●
Pine River* (Downstream of Alma dam, Gratiot & Midland Co.)	All Species	PBBs, DDT	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Lake Ponemah* (Genesee Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	●	●	●
	Largemouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Rifle River (Arenac & Ogemaw Co.)	Rock Bass	PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲		▲	▼	▼	▼	▼	▼	▼	▼	
Saginaw River (Entire Length, Bay & Saginaw Co.)	Carp, Catfish	PCBs, Dioxins	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Smallmouth Bass	PCBs, Dioxins					▼	▼	▼	▼						◆	◆	◆	◆	
	Walleye	PCBs, Mercury, Dioxins					▲	▼	▼	▼	▼					●	◆	◆	◆	◆
	White Bass	PCBs, Dioxins	◆	◆	◆	◆	◆	◆				◆	◆	◆	◆	◆	◆			
	All other species	PCBs, Dioxins	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●
Sanford Lake* (Midland Co.)	Black Crappie		▲	▲	▲	▲	▲	▲				▲	▲	▲	▲	▲	▲			
	Channel Catfish	Mercury, PCBs				▲	▲	▲	▲	▼	▼				▼	▼	▼	▼	●	●
	Rock Bass		▲	▲	▲	▲	▲					▲	▲	▲	▲	▲				

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Huron Watershed	For water bodies that are not listed, read the Mercury Advisory on page 5.																			
St. Mary's River	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Northern Pike	Mercury							▼	▼	▼							●	●	●
	Walleye	Mercury, PCBs					▲	▲	▼	▼	▼					▼	▼	●	●	●
Sebawaing River (Huron Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	●	●	●	●	●
	Northern Pike	PCBs							▲	▲	▲							▼	▼	▼
Shiawassee River (Downstream of Owosso, Shiawassee Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	●	●	●
	Rock Bass	PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
	Smallmouth Bass	PCBs					▲	▲	▲	▲						▼	▼	▼	▼	
Shiawassee River (Byron to Owosso, Shiawassee Co.)	Carp	PCBs	▼	▼	▼	▼	▼	▼	◆	◆	◆	■	■	■	■	■	■	◆	◆	◆
	Northern Pike	PCBs							▲	▲	▲							●	●	■
Shiawassee River S. Br. (M-59 to Byron; Shiawassee, Livingston Co.)	Smallmouth Bass	PCBs					▲	▲	▲	▲						●	●	●	●	
	All other species	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Stevenson Lake* (Isabella Co.)	Bullhead	Mercury	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●
Tawas River (Iosco Co.)	Northern Pike	PCBs							▲	▲	▲							▼	▼	▼
Thompson Lake* (Livingston Co.)	Black Crappie	PCBs	▲	▲	▲	▼	▼	▼				●	●	●	●	●	●			
	Carp	PCBs	▲	▲	▲	▲	▲	▼	▼	◆	◆	▼	▼	▼	●	●	■	◆	◆	◆
	Northern Pike	Mercury, PCBs							▼	▼	▼							●	●	●
Thread Creek and Thread Creek Impoundment* (Genesee Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Huron Watershed	For water bodies that are not listed, read the Mercury Advisory on page 5.																			
Tittabawassee River (Downstream of Midland; Midland & Saginaw Co.)	Carp, Catfish	PCBs, Dioxins	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Smallmouth Bass	PCBs, Dioxins					▼	▼	▼	▼						◆	◆	◆	◆	
	Walleye	PCBs, Mercury, Dioxins					▲	▼	▼	▼	▼					●	◆	◆	◆	◆
	White Bass	PCBs, Dioxins	◆	◆	◆	◆	◆	◆				◆	◆	◆	◆	◆	◆			
	All other species	PCBs, Dioxins	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●
Tobico Marsh* (Bay Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
	Northern Pike	PCBs							▲	▲	▲							▲	▼	▼
Wixom Lake* (Gladwin Co.)	Northern Pike	Mercury							▲	▲	▼							▼	▼	●
Van Etten Lake* (Iosco Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Channel Catfish	PCBs				▲	▲	▲	▲	▲	▲				●	■	■	■	■	■
	Walleye	Mercury, PCBs					▼	▼	▼	▼	▼					●	●	●	●	●
***All Inland lakes, reservoirs, and impoundments** (mercury advisory)	Crappie	Mercury	▲	▼	▼	▼	▼	▼				▲	●	●	●	●	●			
	Largemouth and Smallmouth Bass	Mercury					▼	▼	▼	▼						●	●	●	●	
	Muskellunge	Mercury									▼									●
	Northern Pike	Mercury							▼	▼	▼							●	●	●
	Rock Bass	Mercury	▲	▼	▼	▼	▼					▲	●	●	●	●				
	Walleye	Mercury					▼	▼	▼	▼	▼					●	●	●	●	●
	Yellow Perch	Mercury	▲	▼	▼	▼	▼					▲	●	●	●	●				

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Lake Michigan North of Frankfort #	Brown Trout	PCBs, Dioxins			▼	▼	▼	▼	▼	▼	▼			◆	◆	◆	◆	◆	◆	◆
	Burbot	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼
	Carp	PCBs	▼	▼	▼	▼	▼	▼	▼	◆	◆	■	■	■	■	■	■	■	◆	◆
	Catfish	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Chinook Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	■	■
	Coho Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	■
	Lake Trout	PCBs, Chlordane			▲	▲	▲	▲	▲	◆	◆			●	●	●	●	■	◆	◆
	Rainbow Trout (Including Steelhead)	PCBs			▲	▲	▲	▲	▲	▲	▲			▼	▼	▼	●	●	●	●
	Smelt	PCBs	▲	▲	▲	▲						▼	▼	▼	▼					
	Sturgeon	PCBs									◆									◆
	Walleye	Mercury, PCBs					▲	▲	▼	▼	▼					▼	●	●	■	■
	Whitefish	PCBs, Dioxins	▼	▼	▼	▼	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Yellow Perch	PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
Lake Michigan South of Frankfort #	Brown Trout	PCBs			▲	▲	▲	▲	◆	◆	◆			●	●	●	●	◆	◆	◆
	Carp, Catfish	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Chinook Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	■	■
	Coho Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	■
	Lake Trout	PCBs, Chlordane			▲	▲	▲	▼	◆	◆	◆			●	●	●	●	◆	◆	◆
	Rainbow Trout (Including Steelhead)	PCBs			▲	▲	▲	▲	▲	▲	▲			▼	▼	▼	▼	●	●	●
	Smelt	PCBs	▲	▲	▲	▲						▼	▼	▼	▼					
	Sturgeon	PCBs, Chlordane, DDT, Dioxins									◆									◆
	Walleye	Mercury, PCBs					▲	▲	▼	▼	▼					▼	●	●	■	■
	Whitefish	PCBs, Chlordane, Dioxins	▲	▲	▲	▲	▲	▲	◆	◆	◆	●	●	●	●	●	●	◆	◆	◆
	Yellow Perch	PCBs	▲	▲	▲	▲	▲					▲	▼	▼	▼	▼				

Also applies to connecting rivers where fish may be caught.
* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches) 6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	Women & Children — Length (inches) 6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Green Bay # (S. of Cedar River. Applies to Michigan waters including Menominee and Cedar rivers below first dam. See also **Lake Michigan-North of Frankfort**)	Brown Trout	PCBs, Dioxins			▼	▼	▼	◆	◆	◆	◆			●	●	■	◆	◆	◆	◆
	Burbot	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼
	Carp	PCBs, Dioxins	▼	▼	▼	▼	▼	▼	▼	◆	◆	■	■	■	■	■	■	■	◆	◆
	Channel Catfish	PCBs				▼	▼	▼	▼	▼	▼				■	■	■	■	■	■
	Chinook Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	●
	Lake Trout	PCBs			▲	▲	▲	▲	▼	▼	▼			●	●	●	●	●	■	■
	Northern Pike	PCBs							▲	▲	▲							●	●	●
	Rainbow Trout (Including Steelhead)	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	●
	Smallmouth Bass	Mercury, PCBs					▲	▼	▼	▼						●	●	●	●	
	Splake	PCBs			▼	▼	▼	◆	◆	◆	◆			●	●	■	◆	◆	◆	◆
	Sturgeon	PCBs									◆									◆
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▼	▼	▼	●	●	●	●	●	●	●	●	●
	Walleye	Mercury, PCBs					▲	▼	▼	▼	▼					●	●	■	◆	◆
	White Bass	PCBs	◆	◆	◆	◆	◆	◆				◆	◆	◆	◆	◆	◆			
	Whitefish	PCBs, Dioxins	▼	▼	▼	▼	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	White Perch	PCBs	◆	◆	◆	◆						◆	◆	◆	◆					
	Yellow Perch	PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
Little Bay de Noc # (See also **Lake Michigan North of Frankfort)**	Burbot	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼
	Carp	PCBs	▼	▼	▼	▼	▼	▼	▼	◆	◆	■	■	■	■	■	■	■	◆	◆
	Northern Pike	PCBs							▲	▲	▲							●	●	■
	Smallmouth Bass	Mercury, PCBs					▲	▼	▼	▼						▼	●	●	●	
	Suckers	PCBs	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	●

Also applies to connecting rivers where fish may be caught.
* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Antione Lake* (Dickinson Co.)	Northern Pike	Mercury							▲	▼	▼							▼	●	●
	Walleye	Mercury					▲	▲	▼	▼	▼					▼	▼	●	●	●
Austin Lake* (Kalamazoo Co.)	Largemouth Bass	Mercury					▲	▼	▼	▼						▼	●	●	●	
Barton Lake* (Kalamazoo Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼
Battle Creek River (Calhoun Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	●	●	●
	Smallmouth Bass	PCBs					▲	▲	▲	▲						▼	▼	▼	▼	
Bear Lake* (Muskegon Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▼	◆	●	●	●	●	●	●	●	◆	◆
	Largemouth Bass	Mercury, PCBs					▼	▼	▼	▼						●	●	●	●	
	Northern Pike	PCBs							▲	▲	▲							▼	●	●
	Walleye	Mercury, PCBs					▲	▼	▼	▼	▼					●	●	■	■	■
Black Creek (Muskegon Co.)	Carp, Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
Black River, South Branch (Upstream of Bangor, VanBuren Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Black River (VanBuren Co. including all branches except S. Br. upstream of Bangor)	Carp	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Northern Pike	PCBs							▲	▲	▲							●	●	●
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Boot Lake* (Schoolcraft Co.)	Walleye	Mercury					▲	▲	▼	▼	▼					▼	▼	●	●	●
Boyne River (Charlevoix Co.)	Brown Trout	PCBs		▲	▲	▲	▲	▲	▲	▲	▲		▼	●	●	●	●	●	●	●
Camp Lake* (Kent Co.)	Largemouth Bass	Mercury					▲	▼	▼	▼						▼	●	●	●	
Craig Lake* (Baraga Co.)	Northern Pike	Mercury							▼	▼	◆							●	●	◆
Crystal Lake* (Benzie Co.)	Brown Trout	PCBs			▲	▲	▲	▲	▲	▲	▲			▼	▼	▼	●	●	●	●
	Lake Trout	PCBs					▲	▲	▲	▲	▲			▼	▼	▼	▼	●	●	●
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Dowagiac River (Cass Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Elk Lake* (Antrim Co.)	Brown Trout	Mercury, PCBs					▲	▲	▲	▼	▼					▲	▲	▲	●	●
	Lake Trout	Mercury, PCBs					▲	▲	▲	▼	▼					▼	▼	●	●	●
Fawn River (St. Joseph Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼
	Smallmouth Bass	Mercury					▼	▼	▼	▼						●	●	●	●	
Flat River (Upstream of Greenville, Montcalm Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Rock Bass		▲	▲	▲	▲	▲					▲	▲	▲	▲	▲				
Flat River (Downstream of Greenville; Montcalm, Ionia & Kent Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Rock Bass	PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼
Fenner Lake* (Allegan Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	●	●	●
Fremont Lake* (Newaygo Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Galien River (Berrien Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	●	●	◆	◆	◆
Glen Lake* (Leelanau Co.)	Lake Trout	Mercury, PCBs, Chlordane					▲	▲	▼	▼	◆					▼	●	●	●	◆
	Rainbow Trout	PCBs		▲	▲	▲	▲	▲	▲	▲	▲		▲	▲	▲	▲	▲	▼	▼	▼
Goose Lake* (Marquette Co.)	Northern Pike	PCBs							▲	▲	▲							●	●	●
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	▼	▼	▼	▼
	Yellow Perch	PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
Grand River (Upstream of Webber Dam; Ionia, Clinton, Eaton, Ingham & Jackson Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Channel Catfish	PCBs				▲	▲	▲	▲	▲	▲				▼	▼	●	●	●	●
	Northern Pike	PCBs							▲	▲	▲							▼	▼	▼
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	▼	▼	▼	▼

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Grand River (Downstream of Webber Dam; Ionia, Kent, & Ottawa Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Channel Catfish	PCBs				▲	▲	▲	▲	▲	▲				▼	▼	●	●	●	●
	Northern Pike	PCBs							▲	▲	▲							▼	▼	▼
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲		●	●	●	●	●	●	●	●	
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	●	●	●	●
Green Lake* (Grand Traverse Co.)	Lake Trout	Mercury, PCBs					▼	▼	▼	▼	▼					●	●	●	●	●
Greenwood Reservoir* (Escanaba River, Marquette Co.)	Northern Pike	Mercury							▼	▼	◆							●	●	◆
Gull Lake* (Kalamazoo Co.)	Northern Pike	Mercury, PCBs							▲	▼	▼							▼	●	●
Hess Lake* (Newaygo Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼
Higgins Lake* (Roscommon Co.)	Lake Trout	Mercury, PCBs, Chlordane			▲	▲	▲	▲	▲	▲	◆			●	●	●	●	●	●	◆
Houghton Lake* (Roscommon Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼
Kalamazoo River* (Ceresco Impoundment, Calhoun Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Smallmouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Kalamazoo River (From Battle Creek to Morrow Pond Dam, Calhoun & Kalamazoo Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Channel Catfish	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Smallmouth Bass	PCBs					▲	▲	▲	▲						▼	▼	▼	▼	
Kalamazoo River (From Morrow Dam to Allegan Dam, Kalamazoo & Allegan Co.)	Carp	PCBs, Dioxins	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Catfish, Suckers	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Largemouth and Smallmouth Bass	PCBs					◆	◆	◆	◆						◆	◆	◆	◆	
	All other species	PCBs	▼	▼	▼	▼	▼	▼	▼	▼	▼	◆	◆	◆	◆	◆	◆	◆	◆	◆

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Kalamazoo River (Downstream of Allegan Dam, Allegan Co.)	Carp, Catfish	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Largemouth and Smallmouth Bass	PCBs					▼	▼	▼	▼						◆	◆	◆	◆	
	Northern Pike	PCBs							◆	◆	◆							◆	◆	◆
	All other species	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
Klinger Lake* (St. Joseph Co.)	Largemouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Lake Charlevoix* (Charlevoix Co.)	Brown Trout	PCBs			▲	▲	▲	▲	▼	▼	▼			●	●	●	●	■	■	■
	Lake Trout	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	●
	Walleye	Mercury					▲	▲	▼	▼	▼					▲	▲	●	●	●
Lake Macatawa* (Ottawa Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▼	▼	◆	◆	▼	▼	▼	▼	●	●	◆	◆	◆
	Walleye	Mercury, PCBs					▲	▲	▲	●	●					●	●	●	●	●
Lake Mitchell* (Wexford Co.)	Largemouth Bass	Mercury					▲	▼	▼	▼						▼	●	●	●	
Lake Paradise* (Emmet Co.)	Largemouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
	Smallmouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Long Lake* (Kalamazoo Co.)	Black Crappie	Mercury	▲	▲	▲	▲	▼	▼				▲	▲	▲	▲	●	●			
Long Lake* (St. Joseph Co.)	Largemouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Manistee Lake* (Manistee Co.)	Black Crappie	Mercury, PCBs	▲	▼	▼	▼	▼	▼				▼	●	●	●	●	●			
	Bluegill	PCBs	▲	▲	▲	▲						▼	▼	▼	▼					
	Largemouth and Smallmouth Bass	Mercury, PCBs					▼	▼	▼	▼						●	●	●	●	
	Walleye	Mercury, PCBs					▼	▼	▼	▼	▼					●	●	●	●	●
Manistique Lake* (Mackinac Co.)	Walleye	Mercury					▲	▼	▼	▼	▼					▼	●	●	●	●
Manistique River (Upstream from dam at Manistique, Schoolcraft Co.)	Northern Pike	Mercury							▼	▼	▼							●	●	●

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Manistique River (Downstream of Manistique Papers Dam, Schoolcraft Co.)	Carp	PCBs	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Channel Catfish	PCBs				▲	▲	▲	▲	▲	▲				●	●	■	■	■	■
	Rock Bass	Mercury, PCBs	▲	▲	▲	▲	▲					▼	▼	▼	▼	▼				
	Smallmouth Bass	PCBs					▲	▲	▲	▲						●	●	●	●	
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Walleye	Mercury, PCBs					▲	▲	▼	▼	▼					▼	▼	●	●	●
Maple River (Clinton, Gratiot, & Ionia Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼
Menominee River (Between Quinnesec & 1st Dam, Dickinson & Menominee Co.)	Carp	Mercury, PCBs	▼	▼	▼	▼	▼	▼	▼	▼	▼	●	●	●	●	●	●	●	●	■
	Sturgeon	Mercury, PCBs									▼									●
	Suckers	Mercury, PCBs	▲	▲	▲	▲	▼	▼	▼	▼	▼	▲	▲	▲	▲	●	●	●	●	●
	Walleye	Mercury, PCBs					▲	▼	▼	▼	▼					▲	●	●	●	●
Michigamme River System* (Including Lake Michigamme, Michigamme Reservoir, Peavy Pond, and Paint River Pond; Iron & Dickinson Co.)	Burbot	Mercury	▲	▲	▲	▲	▲	▲	▼	▼	▼	▲	▲	▲	▲	▲	▲	●	●	●
	Northern Pike	Mercury							▼	▼	▼							●	●	●
	Suckers	Mercury	▲	▲	▲	▲	▲	▼	▼	▼	▼	▲	▲	▲	▲	▲	●	●	●	●
	Walleye	Mercury					▼	◆	◆	◆	◆					●	◆	◆	◆	◆
Mona Lake* (Muskegon Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	●	●	●
	Smallmouth Bass	PCBs					▲	▲	▲	▲						●	●	●	●	
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	●	●	●	●
Morrison Lake* (Ionia Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	●
	Largemouth Bass						▲	▲	▲	▲						▲	▲	▲	▲	
Muskegon Lake* (Muskegon Co.)	Carp	PCBs, Chlordane	▲	▲	▲	▲	▲	▲	▲	▼	◆	●	●	●	●	●	●	●	●	◆
	Largemouth Bass	Mercury, PCBs					▼	▼	▼	▼						●	●	●	●	
	Northern Pike	PCBs							▲	▲	▲							▼	●	●
	Smallmouth Bass	Mercury, PCBs					▼	▼	▼	▼						●	●	●	●	
	Walleye	Mercury, PCBs					▲	▲	▼	▼	▼					●	●	●	●	●

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population Length (inches) 6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	Women & Children Length (inches) 6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Muskegon River (Downstream of Croton Dam, Newaygo & Muskegon Co.)	Carp	PCBs, Chlordane	▲	▲	▲	▲	▲	▲	▲	▼	◆	●	●	●	●	●	●	●	●	◆
	Suckers	Mercury, PCBs	▲	▲	▲	▲	▲	▼	▼	▼		▲	▲	▲	▲	▲	●	●	●	
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	●	●	●	●
Net River (Iron Co.)	Northern Pike	Mercury							▼	▼	▼							●	●	●
	Walleye	Mercury					▼	▼	▼	▼	▼					●	●	●	●	●
North Lake Leelanau* (Leelanau Co.)	Lake Trout	Mercury, PCBs					▼	▼	▼	▼	▼					●	●	●	●	●
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
North Manistique Lake* (Luce Co.)	Walleye	Mercury					▲	▲	▼	▼	▼					▼	▼	●	●	●
	Yellow Perch		▲	▲	▲	▲	▲					▲	▲	▲	▲	▲				
Paint Lake* (Iron Co.)	Northern Pike	Mercury							▲	▲	▼							▼	▼	●
Palmer Lake* (St. Joseph Co.)	Largemouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Paw Paw River (Maple Lake, Van Buren Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼
	Largemouth Bass	Mercury					▲	▼	▼	▼						▲	●	●	●	
Pere Marquette Lake* (Mason Co.)	Northern Pike	PCBs							▲	▲	▲							●	●	●
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
Pere Marquette River (Including Baldwin and all other Tributaries; Lake & Mason Co.)	Brown Trout	Mercury, PCBs		▲	▲	▲	▼	▼	▼	▼	▼		●	●	●	●	●	●	●	●
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲		●	●	●	●	●	●	●	●	
Pigeon River (St. Joseph Co.)	Smallmouth Bass	Mercury, PCBs					▲	▼	▼	▼						▼	●	●	●	
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Platte Lake* (Benzie Co.)	Channel Catfish	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Largemouth and Smallmouth Bass	Mercury, PCBs					▼	▼	▼	▼						●	●	●	●	
	Northern Pike	Mercury, PCBs							▼	▼	▼							●	●	●
	Rock Bass	Mercury	▲	▲	▼	▼	▼					▼	▼	●	●	●				
Portage Creek (Monarch Pond, Kalamazoo Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Portage Creek (Downstream of Monarch Mill Pond, Kalamazoo Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Channel Catfish	PCBs				◆	◆	◆	◆	◆	◆				◆	◆	◆	◆	◆	◆
	Largemouth Bass	PCBs					◆	◆	◆	◆						◆	◆	◆	◆	
	Smallmouth Bass	PCBs					◆	◆	◆	◆						◆	◆	◆	◆	
	All other species	PCBs	▼	▼	▼	▼	▼	▼	▼	▼	▼	◆	◆	◆	◆	◆	◆	◆	◆	◆
Portage Lake* (Manistee Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●
	Largemouth Bass	Mercury, PCBs					▲	▼	▼	▼						▼	●	●	●	
	Northern Pike	PCBs							▲	▲	▲							▲	▲	●
	Smallmouth Bass	Mercury, PCBs					▼	▼	▼	▼						●	●	●	●	
Rabbit River (Upstream of Hamilton Dam, Allegan Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Suckers	Mercury	▲	▲	▲	▲	▲	▼	▼	▼	▼	▲	▲	▲	▲	▲	●	●	●	●
Rabbit River (Downstream of Hamilton Dam, Allegan Co.)	Carp	PCBs	▼	▼	▼	▼	▼	▼	▼	▼	▼	■	■	■	■	■	■	■	■	■
	Largemouth Bass	Mercury, PCBs					▼	▼	▼	▼	▼					●	●	●	●	●
	Northern Pike	Mercury							▼	▼	▼							●	●	●
Red Cedar River (Ingham Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	●	●	●	●
Reed's Lake* (Kent Co.)	Largemouth Bass	PCBs					▲	▲	▲	▲						▼	▼	▼	▼	
	Northern Pike	PCBs							▲	▲	▲							▼	▼	▼
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	▼	▼	▼	▼
Ruddiman Creek Lagoon (Muskegon Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▼	◆	◆	●	●	●	●	●	●	●	◆	◆
	Largemouth Bass	PCBs					▲	▲	▲	▲						▼	▼	▼	▼	
Round Lake* (Marquette Co.)	Northern Pike	Mercury							◆	◆	◆							◆	◆	◆
Selkirk Lake* (Allegan Co.)	Yellow Bullhead	Mercury	▲	▲	▼	▼	▼					▲	▲	●	●	●				
St. Joseph River (Downstream of Berrien Springs, Berrien Co.)	Carp	PCBs	▼	▼	▼	▼	▼	▼	▼	▼	▼	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Smallmouth Bass	PCBs					▲	▲	▲	▲						●	●	●	●	
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	▼	▼	▼	▼

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
St. Joseph River (Including **Chapin Lake*,** upstream of Berrien Springs, Berrien Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●
	Largemouth Bass	Mercury, PCBs					▲	▼	▼	▼						▼	●	●	●	
	Smallmouth Bass	PCBs					▲	▲	▲	▲						●	●	●	●	
St. Joseph River (Upstream of Constantine, St. Joseph Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▼	▼	●	●	●	●	●	●	●	◆	◆
	Channel Catfish	PCBs				▲	▲	▲	▲	▲	▲				▼	▼	▼	▼	▼	▼
	Walleye	PCBs					▲	▲	▲	▲	▲					▼	▼	▼	▼	▼
St. Joseph River (Upstream of Sturgis Impoundment, St. Joseph Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▼	▼	▲	▲	▲	▲	▲	▲	▲	◆	◆
	Largemouth Bass	Mercury				▲	▲	▼	▼	▼	▼				▼	▼	●	●	●	●
Stanley Lake* (Iron Co.)	Walleye	Mercury					▲	▲	▲	▲	▲					▲	▲	▲	▲	▲
Thornapple River (Barry, Kent & Eaton Co.)	Carp	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	●	●
Torch Lake* (Antrim Co.)	Brown Trout	PCBs			▲	▲	▲	▲	▲	▲	▲			▼	▼	▼	●	●	●	●
	Lake Trout	Mercury, PCBs, Chlordane					▲	▲	▼	◆	◆			▼	▼	●	●	●	◆	◆
	Lake Whitefish	PCBs, Dioxins	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	◆	◆	◆	◆
	Smallmouth Bass	Mercury, PCBs					▼	▼	▼	▼						●	●	●	●	
	Yellow Perch	Mercury	▲	▲	▲	▼	▼					▲	▲	▲	●	●				
Union Lake* (St. Joseph R., Branch Co.)	Carp, Channel Catfish	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Unnamed Lake* aka Aligan Lake (Baraga Co., T49N, R31W, S35)	Northern Pike	Mercury							◆	◆	◆							◆	◆	◆
	Walleye	Mercury					▼	▼	◆	◆	◆					●	●	◆	◆	◆
	Yellow Perch	Mercury	▲	▼	◆	◆	◆					▲	●	◆	◆	◆				
Van Auken Lake* (VanBuren Co.)	Northern Pike	Mercury							▲	▼	▼							▼	●	●

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Michigan Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Walloon Lake* (Charlevoix Co.)	Rock Bass		▲	▲	▲	▲	▲					▲	▲	▲	▲	▲				
	Walleye	Mercury					▲	▲	▼	▼	▼					▲	▲	▼	▼	▼
	Yellow Perch		▲	▲	▲	▲	▲					▲	▲	▲	▲	▲				
West Branch Lakes, SE and SW* (Alger Co., T48N, R14W, S31)	Northern Pike	Mercury							◆	◆	◆							◆	◆	◆
	Walleye	Mercury					▼	▼	◆	◆						●	●	◆	◆	
	Yellow Perch	Mercury	▲	▼	◆	◆	◆					▲	●	◆	◆	◆				
White Lake* (Muskegon Co.)	Carp	PCBs	▼	▼	▼	▼	▼	▼	▼	▼	▼	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Northern Pike	Mercury, PCBs							▼	▼	▼							●	●	●
	Smallmouth Bass	Mercury, PCBs					▲	▼	▼	▼						●	●	●	●	
	Walleye	Mercury, PCBs					▲	▲	▲	▼	▼					▼	▼	▼	●	●
***All inland lakes, reservoirs, and impoundments** (mercury adviosry)	Crappie	Mercury	▲	▼	▼	▼	▼	▼				▲	●	●	●	●	●			
	Largemouth and Smallmouth Bass	Mercury					▼	▼	▼	▼						●	●	●	●	
	Muskellunge	Mercury									▼									●
	Northern Pike	Mercury							▼	▼	▼							●	●	●
	Rock Bass	Mercury	▲	▼	▼	▼	▼					▲	●	●	●	●				
	Walleye	Mercury					▼	▼	▼	▼	▼					●	●	●	●	●
	Yellow Perch	Mercury	▲	▼	▼	▼	▼					▲	●	●	●	●				

* See Mercury Advisory on page 5.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Superior Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Lake Superior #	Brown Trout	PCBs			▲	▲	▲	▲	▲	▲	▲			▼	▼	▼	▼	▼	▼	▼
	Burbot	Mercury	▲	▲	▲	▲	▲	▲	▼	▼	▼	▲	▲	▲	▲	▲	▲	●	●	●
	Chinook Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			●	●	●	●	●	●	●
	Coho Salmon	PCBs			▲	▲	▲	▲	▲	▲	▲			▼	▼	▼	▼	▼	▼	▼
	Lake Herring	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
	Lake Trout	PCBs, Chlordane, Mercury					▲	▲	▲	▲	▼					▼	▼	▼	●	◆
	Rainbow Trout	PCBs			▲	▲	▲	▲	▲	▲	▲			▲	▲	▲	▲	▲	▼	▼
	Siscowet	Chlordane, PCBs, Dioxins					▲	◆	◆	◆	◆					●	◆	◆	◆	◆
	Suckers	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
	Walleye	Mercury					▲	▲	▼	▼	▼					▲	▲	●	●	●
	Whitefish	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Au Train Lake* (Alger Co.)	Northern Pike	Mercury							▲	▲	▼							▲	▲	●
	Yellow Perch	Mercury	▲	▲	▲	▼	▼					▲	▲	▲	▼	▼				
Boston Pond* (Houghton Co.)	Yellow Perch		▲	▲	▲	▲	▲					▲	▲	▲	▲	▲				
Carp Creek (Upstream of Deer Lake, Marquette Co.)	Brook Trout	Mercury	▲	▲	▼	▼	▼	▼	▼	▼		▲	▲	●	●	●	●	●	●	
	Suckers	Mercury	▲	▲	◆	◆	◆	◆	◆	◆	◆	▲	▲	◆	◆	◆	◆	◆	◆	◆
	All other species	Mercury	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Carp River (Downstream of Deer Lake, Marquette Co.)	Brook Trout		▲	▲	▲	▲	▲	▲	▲	▲		▲	▲	▲	▲	▲	▲	▲	▲	
	Northern Pike	Mercury							▼	▼	▼							●	●	●
	Suckers		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
	All other species	Mercury	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Chaney Lake* (Gogebic Co.)	Northern Pike	Mercury							▼	◆	◆							●	◆	◆
	Yellow Perch	Mercury	▲	▲	▲	▲	▲					▲	▲	▲	▲	▲				
Cisco Lake Chain*	Walleye						▲	▲	▲	▲	▲					▲	▲	▲	▲	▲

* See Mercury Advisory on page 5.
# Also applies to connecting rivers where fish may be caught.

▲ No eating restrictions.
● One meal per month.
▼ One meal per week.
■ Six meals per year.
◆ Do not eat these fish.

Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Superior Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
Deer Lake* (Alger Co.)	Northern Pike	Mercury							▼	◆	◆							●	◆	◆
Deer Lake (Marquette Co.)	All species	Mercury	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Duck Lake* (Gogebic Co.)	Walleye	Mercury					▲	▼	▼	▼	▼					▲	●	●	●	●
Lake Gogebic* (Gogebic Co.)	Walleye	Mercury					▲	▼	▼	▼	▼					▲	●	●	●	●
Lake Independence* (Marquette Co.)	Northern Pike	Mercury							▲	▲	▼							▲	▲	●
Lake Le Vasseur* (Marquette Co.)	Northern Pike	Mercury							▼	◆	◆							●	◆	◆
Langford Lake* (Gogebic Co.)	Walleye	Mercury					▲	▲	◆	◆	◆					▲	▲	◆	◆	◆
Pomeroy Lake* (Gogebic Co.)	Walleye	Mercury					▲	▼	▼	▼	▼					▲	●	●	●	●
Portage Lake* (Houghton Co.)	Brown Trout	PCBs			▲	▲	▲	▲	▲	▲	▲			▲	▲	▼	▼	●	●	●
	Walleye	Mercury, PCBs					▲	▲	▼	▼	▼					▲	▲	●	●	●
Silver Lead Creek (Marquette Co.)	Brook Trout	PCBs	▲	▲	▲	▲	▲	▲	▲	▲		▼	▼	▼	▼	▼	▼	▼	▼	
Siskiwit Lake* (Isle Royale)	Lake Trout	PCBs			▲	▲	▲	▲	▲	▲	▲			▲	▲	▲	▲	▼	▼	▼
	Lake Whitefish	PCBs	▲	▲	▲	▲	▲	▲	▲	▲	▲	▼	▼	▼	▼	▼	▼	▼	▼	▼
Tahquamenon River (Luce Co.)	Walleye	Mercury					▼	▼	▼	▼	▼					●	●	●	●	●
Teal Lake* (Marquette Co.)	Smallmouth Bass	Mercury					▲	▼	▼	▼						▼	●	●	●	
	Walleye	Mercury					▲	▼	▼	▼	▼					▼	●	●	●	●
Thousand Island Lake* (Gogebic Co.)	Walleye	Mercury					▲	▼	▼	▼	▼					▲	●	●	●	●
Torch Lake* (Houghton Co.)	Northern Pike	Mercury, PCBs							▲	▲	▼							▼	▼	●
	Smallmouth Bass	Mercury, PCBs					▲	▼	▼	▼						▼	●	●	●	
	Walleye	Mercury, PCBs					▲	▲	◆	◆	◆					▼	▼	◆	◆	◆

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▼ One meal per week.
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Water body	Type of fish	Chemical(s)	General Population — Length (inches)									Women & Children — Length (inches)								
			6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +	6-8	8-10	10-12	12-14	14-18	18-22	22-26	26-30	30 +
Lake Superior Watershed For water bodies that are not listed, read the Mercury Advisory on page 5.																				
***All inland lakes, reservoirs, and impoundments** (mercury advisory)	Crappie	Mercury	▲	▼	▼	▼	▼	▼				▲	●	●	●	●	●			
	Largemouth and Smallmouth Bass	Mercury					▼	▼	▼	▼						●	●	●	●	
	Muskellunge	Mercury									▼									●
	Northern Pike	Mercury							▼	▼	▼							●	●	●
	Rock Bass	Mercury	▲	▼	▼	▼	▼					▲	●	●	●	●				
	Walleye	Mercury					▼	▼	▼	▼	▼					●	●	●	●	●
	Yellow Perch	Mercury	▲	▼	▼	▼	▼					▲	●	●	●	●				

Also applies to connecting rivers where fish may be caught.

* See Mercury Advisory on page 5.

Updated June 2009. This Guide will be updated when information is received that results in changes to the fish advisories. For more information,contact the **Michigan Department of Community Health at 1-800-648-6942.**

* See Mercury Advisory on page 5.

Michigan Department of Community Health

MDCH

Jennifer M. Granholm, Governor
Janet Olszewski, Director

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CLEAN BOATS CLEAN WATERS

Guidelines for Clean Boats, Clean Waters

MICHIGAN'S AQUATIC INVASIVE SPECIES VOLUNTEER PROGRAM

2006 EDITION

ACKNOWLEDGMENTS

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CLEAN BOATS CLEAN WATERS

Welcome to the Clean Boats, Clean Waters Aquatic Invasives Volunteer Program!

Michigan's greatest natural asset, one of its clearly defining characteristics, is its abundant water resources—3,300 miles of shoreline on four of the five Great Lakes, 35,000 miles of navigable streams, more than 11,000 inland lakes and thousands of square miles of wetlands. No wonder the state has been known worldwide for many years as a "water wonderland." These watery wonders are home to hundreds of species of fish, waterfowl, plants and many other forms of life. The Clean Boats, Clean Waters: Aquatic Invasives Volunteer Program is for people who care about Michigan's waterways and who have a vision for their future.

Aquatic invasive species have long been recognized as a serious threat to the United States. According to Cornell University research, introduced species of animals, plants, and microbes cost the U.S. economy at least $148 billion a year. Invasive aquatic plants and animals jeopardize the future of Michigan waters.

With the arrival of aquatic invasive species, volunteers are needed now more than ever to help preserve and protect Michigan waters. Dozens of organizations, hundreds of teachers and thousands of students have participated in the Purple Loosestrife Project, inoculating infested Michigan wetlands with *Galerucella* beetles. Native plants have now returned to many of these wetlands. Fishing enthusiasts have joined Michigan's Angler Monitoring Network, reporting invasive species they find in the state's waters. Interested, alert Michigan citizens have helped track the spread of zebra mussels to more than 200 inland lakes.

The Clean Boats, Clean Waters program is an opportunity for volunteers to help stop the spread of aquatic invasive species across the state. Through this program, volunteers are trained to organize and conduct a watercraft inspection demonstration and education program in their community.

The mission of this program is to promote water resource stewardship by actively involving individuals in preventing the spread of harmful aquatic invasive species. To accomplish this goal, the program sponsors statewide training workshops and has developed resource handbooks, tool kits, and educational information. A statewide coordinator now organizes volunteer efforts.

Michigan realizes that volunteers are the keys to reaching hundreds of people recreating on the state's waters. Volunteers who instruct boaters on how to perform watercraft inspections can help prevent new invasions and help to maintain Michigan's valuable water resources. Thank you for taking the time to learn, act, and protect Michigan's waters from invasive species.

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Section 1:
What is the program all about?

PREVENTION AND CONTROL OF AQUATIC INVASIVE SPECIES IN MICHIGAN

Michigan's vast water resources are at great risk from invasion by nonindigenous species of plants and animals. Most of the state's rivers and streams, ponds and lakes, shorelines and wetlands provide hospitable habitat for native and invasive species alike. They are attractive and accessible for many human uses, making it all too easy for people to introduce an invasive species inadvertently as they enjoy the recreational opportunities of the water wonderland.

Invasive species can disrupt food webs, foul infrastructure and recreational equipment, spoil tourism and recreational experiences, devalue waterfront property, create public health hazards and wreak havoc for water-based businesses. The now infamous zebra mussel is an example; it has infested more than 225 of Michigan's inland lakes. Depending on the characteristics of the lake, zebra mussel infestation means it may now be more susceptible to blooms of blue green algae with toxic properties. Its native clams may be destroyed. Boaters' recreational equipment may be more easily damaged.

Aquatic invasive species are costly to control once they're in place and have established reproducing populations. Riparians have spent as much as $1,000 an acre in an attempt to keep Eurasian water-milfoil under control in the state's largest inland lake. Such species have so many ways of reproducing that they are virtually impossible to eradicate once they are well established in an environment that meets their requirements for food and shelter.

Prevention is Key

Therefore, the best defense for Michigan's aquatic ecosystems is a good preventive offense. Taking steps to protect them will also protect people's valuable property, whether it's an expensive watercraft or a waterfront home with a spectacular view.

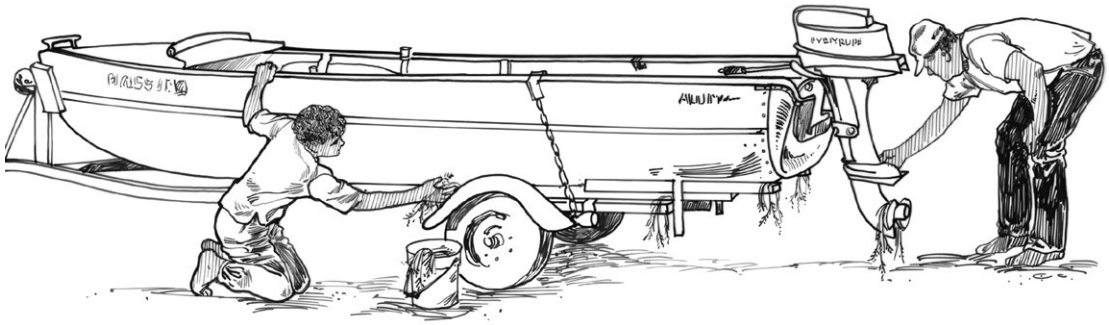
Preventing the introduction of invasive species may seem overwhelming, even impossible, because of the multitudes of potentially invasive plants and animals and the vast array of potentially affected resources. However, as political philosopher Edmund Burke is credited with saying, "No one could make a greater mistake than he who did nothing because he could only do a little," and most people can do a little. In this situation, the consequences of one careless action can be enormously destructive, and the consequences of one preventive action can be enormously constructive.

What can prevent new introductions of invasive species?

Fortunately, some of the best preventive, protective measures are simple, inexpensive and involve just a little time, energy, readily available materials and elbow grease. For example, if every boater spent a few minutes inspecting critical components of a watercraft and trailer and a little effort cleaning and drying the boat, that pathway of introduction would be significantly reduced.

Fortunately, research indicates that most of the owners of Michigan's 900,000+ licensed boats have some awareness of invasive species. The study also suggests that most boaters want to take the appropriate action, but may not do so because they're uncertain what to do and how to do it.

So the obvious solution is to educate boaters about the steps they can take to prevent damage to the ecosystem and to their valuable equipment. That's the purpose of Clean Boats, Clean Waters – to educate boaters about the steps they can take to prevent the introduction of invasive species and to protect their boats.



THE CLEAN BOATS, CLEAN WATERS AQUATIC INVASIVE SPECIES VOLUNTEER PROGRAM VISION

The Clean Boats, Clean Waters Aquatic Invasive Species Volunteer Program promotes healthy ecosystems and a healthy economy by actively involving individuals in preventing the spread of harmful aquatic invasive species that threaten Michigan's ecosystems. Citizen involvement in demonstrating watercraft inspections will increase public awareness about the threats of aquatic invasive species. Volunteers will serve to inform and educate the public about how people can help prevent the spread of invasive species by inspecting their watercraft and removing aquatic plants and animals from their boats and equipment before leaving an access site.

To accomplish these objectives, the volunteer program supports:

- Watercraft inspection demonstrations for aquatic invasive species.
- Communication with the public about the laws and issues surrounding the existence, spread, and effects of invasive species to Michigan's waters.
- Distribution of print materials such as watercraft checkpoint cards and Stop Aquatic Hitchhiker™ stickers.
- Collection of data to evaluate the potential spread of invasive species, public awareness of invasive species issues, and the effectiveness of the invasive species program.
- Response to technical inquiries from the public concerning invasive species.

FOUR REASONS TO CARE ABOUT AQUATIC INVASIVE SPECIES:

1. **Economics** – The costs of controlling invasive species in the United States increase every year. A typical consumer absorbs these costs through higher water and electric bills. A Cornell University study reports that invasive species on land and water already cost the United States $148 billion annually. The Great Lakes sport and commercial fishing industry, valued at almost $4.5 billion annually, is at risk due to the growing numbers of invaders such as the zebra mussel, spiny water flea, sea lamprey, ruffe, and round goby that prey on invertebrates of all sizes, top predator fish, as well as fish eggs and small fish. Large water users in the Great Lakes, including municipalities and industries, spent about $120 million from 1989 to 1994 to combat the spread of zebra mussels.

2. **Health** – Some invasive species may cause significant health problems. For example, a South American strain of human cholera bacteria was found in ballast water tanks of ships in the port of Mobile, Alabama, in 1991. Cholera strains also were found in oyster and fin/fish samples in Mobile Bay, resulting in a public health advisory to avoid handling or eating raw oysters or seafood. Temporary bans on commercial harvest may be put into effect when health concerns exist.

3. **Ecological** – The rapid spread of zebra mussels in the Great Lakes shows how profoundly an invasive species can alter the aquatic environment. These tiny mussels reproduce rapidly. Coupled with consumption of microscopic plants and animals, zebra mussels affect the aquatic food web, decimate native mussel/clam populations, and place valuable ecological communities' resources at risk.

4. **Recreational** – Invading species such as the sea lamprey, ruffe, and round goby can harm native fish such as lake trout, walleye, yellow perch and catfish. They threaten a national sport and commercial fishing industry that supports 81,000 jobs in the Great Lakes. Aquatic invasive plant species such as purple loosestrife and Eurasian water-milfoil quickly established themselves and have, in some cases, replaced native plants. The proliferation of these invasive plants impairs boating, swimming and fishing, navigation and flood control, and degrades water quality, as well as fish and wildlife habitat.

(List adapted from the Aquatic Nuisance Species Task Force and the Great Lakes Panel on Aquatic Nuisance Species.)

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Section 2:
Who are the people involved?

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Section 3:
What do volunteers need to know about aquatic invasive species management in Michigan?

MICHIGAN AQUATIC INVASIVE SPECIES

The species in the following table are present in Michigan waters and are considered invasive. Folders of resource material and references about eight of these are included in the back of this guide.

PLANTS

Common name	Latin name	Habitat	Information Resources
Curly-leaf pondweed	*Potamogeton crispus*	Aquatic	
Eurasian water-milfoil	*Myriophyllum spicatum*	Aquatic	Resource material in back of guide
European frogbit	*Hydrocharis morsus-ranae*	Aquatic	
Flowering rush	*Butomus umbellatus*	Aquatic, wetlands	
Phragmites	*Phragmites Australis*	Aquatic, wetlands	
Purple loosestrife	*Lythrum salicaria*	Aquatic, wetlands	Resource material in back of guide
Yellow water flag	*Iris pseudacorus*	Aquatic, wetlands	

ANIMALS

Common name	Latin name	Habitat	Information Resources
Alewife	*Alosa pseudoharengus*	Aquatic	
Grass carp	*Ctenopharyngodon idella*	Aquatic	
Silver carp	*Hypophthalmichthys molitrix*	Aquatic	
Bighead carp	*Hypophthalmichthys nobilis*	Aquatic	
Black carp	*Mylopharyngodon piceus*	Aquatic	
Fishhook waterflea	*Cercopagis pengoi*	Aquatic	Resource material in back of guide
Quagga mussel	*Dreissena bugensis*	Aquatic	
Rainbow smelt	*Osmerus mordax*	Aquatic	
Round goby	*Neogobius melanostomus*	Aquatic	Resource material in back of guide
Ruffe	*Gymnocephalus cernuus*	Aquatic	Resource material in back of guide
Rusty crayfish	*Orconectes rusticus*	Aquatic	Resource material in back of guide
Sea lamprey	*Petromyzon marinus*	Aquatic	
Spiny waterflea	*Bythotrephes cederstoemi*	Aquatic	Resource material in back of guide
Swimmer's itch[1]	*Schistosoma spp.*	Aquatic	
White perch	*Morone americana*	Aquatic	
Yellow perch parasite	*Heterosporis sp.*	Fish parasite	
Zebra mussel	*Dreissena polymorpha*	Aquatic	Resource material in back of guide

1 Native nuisance species.

MICHIGAN'S AQUATIC NUISANCE SPECIES STATE MANAGEMENT PLAN

Prevention and Control in Michigan Waters — Updated 2002

Michigan's waters are under assault from aquatic invasive species (AIS). AIS have long been recognized as a major problem in the Great Lakes. In 1996, Michigan was the second state in the United States to develop a state management plan to address AIS prevention and control – *Nonindigenous Aquatic Nuisance Species State Management Plan*.

In 2002, the Office of the Great Lakes convened an Aquatic Nuisance Species (ANS) Action Team, including the directors of the departments of Environmental Quality, Natural Resources and Agriculture, as well as representatives of other government agencies, academic institutions and stakeholder organizations, to update the existing plan and to coordinate responses to the problems associated with AIS. For a copy of the complete plan, visit www.deq.state.mi.us/documents/deq-ogl-ANSPlan2002.pdf. One recommendation of the ANS Action Team was the creation of an ANS Council, which was formed in 2002 to coordinate implementation of the updated plan.

This plan focuses on prevention as the key strategy for limiting the impacts of aquatic invasive species by controlling the initial introduction and subsequent transfer from one water body to another. However, prevention techniques alone are inadequate for limiting the negative impacts caused by aquatic invasive plants and animals. This plan also suggests that early detection, rapid response, control, mitigation, or eradication strategies must be considered. It incorporates information and education/outreach activities, research needs and policy and legislative initiatives as key components of the overall program. Prevention strategies rely heavily on information, education, and communication. Therefore, this plan includes the full range of those activities in order to implement an effective prevention program. The plan identifies four goals for information, education and communication.

- **Information and Education Goal I:** The prevention of the unintentional introduction and dispersal of aquatic nuisance species into, within and from Great Lakes waters through implementation of information/education (I/E) activities.
- **Information and Education Goal II:** Statewide coordination of information dissemination regarding aquatic nuisance species programs involving prevention, control, monitoring, research, education, policy and other related activities.
- **Information and Education Goal III:** The active involvement of Great Lakes regional policymakers and user groups in the promotion of aquatic nuisance prevention and control programs.
- **Information and Education Goal IV:** Provide adequate resources to implement Michigan's Information/Education Strategy for Aquatic Nuisance Prevention and Control.

The first objective of the plan's Information and Education Goal I is to "Ensure that all recreational boaters take action to prevent the introduction and dispersal of aquatic nuisance species."

The Plan recommends:

"Implement regional boat-wash demonstrations and/or inspections to show boaters how to prevent the spread of aquatic nuisance species on their boats. To impede the spread to inland waters, target areas where there is high traffic between Great Lakes basin and inland waters. Demonstrations should be conducted at public accesses or infested waters."

As Michigan moves ahead with implementation of actions to prevent and control aquatic invasive species, extra care to prevent new introductions is necessary. With a more robust global economy, it is anticipated that, without a new prevention program, new introductions are highly likely. For that reason, prevention actions at the national and regional level, as well as at the individual jurisdictional level, are critical. The growth potential of certain species in a new place, uninhibited by natural predation or disease, can be explosive and cause changes in Michigan's waters that are quick, permanent, and seriously detrimental to human, ecological, or economic health.

The highest prevention priority is the control of ballast water discharges. Ships practicing good ballast water management can greatly reduce the number of species traveling in ballast water from world ports. Barriers placed in tributaries can make it difficult for invasive species to enter the Great Lakes via natural dispersal. Actions such as checking and cleaning boats and fishing equipment can dramatically reduce the likelihood of lake-to-lake transfer of invasive species.

Several other potential transport mechanisms could also result in releases of AIS into the Great Lakes and inland state waters. Some of these vectors are: the transportation and rearing systems related to the aquaculture industry and commercial barge traffic; inter-Great Lake boating associated with research or management activities; scuba diving; the sale and distribution of fishing bait; the transfer and disposal of nonindigenous pets; plant nurseries; fish stocking activities and individual releases by anglers. Taking action at all levels to stop the introduction and spread of invasive species by all potential pathways will ultimately protect Michigan waters from further economic and environmental degradation.

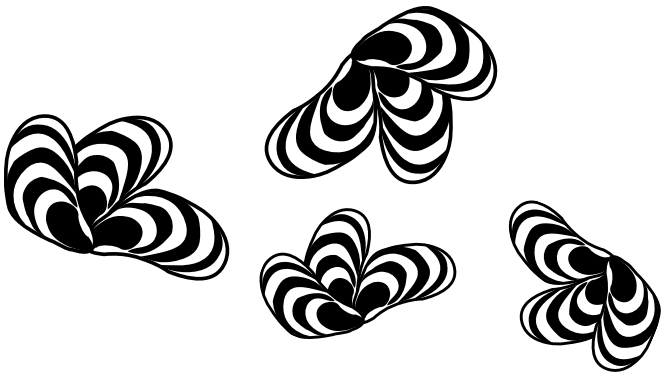
AQUATIC INVASIVE SPECIES LAWS

Federal Legislation

One important piece of national aquatic invasive species legislation is the National Invasive Species Act (NISA). For a summary of NISA, visit www.nemw.org/nisa_summary.htm. A great deal of national and international focus has been placed on ballast water because of its implication in numerous aquatic invasive species introductions worldwide. The U.S. Coast Guard is responsible for regulating ballast water management under NISA. Visit the Coast Guard Office of Operating and Environmental Standards Web site at www.uscg.mil/hq/g-m/mso/ans.htm for information on regulations and links to specific ballast water programs.

Also important are the federal noxious weed regulations that define noxious weeds and establish rules restricting their movement. The Federal Noxious Weed list includes aquatic species such as hydrilla, as well as a number of terrestrial species, but does not include the well-known Michigan invaders Eurasian water-milfoil and purple loosestrife. Listed species cannot be moved into or through the United States without a permit. To view the complete list and associated regulations, visit the Animal and Plant Health Inspection Service (APHIS) Web site at www.aphis.usda.gov/ppq/weeds.

The Lacey Act of 1990, later amended in 1998, prohibits importation of a list of designated species and other vertebrates, mollusks, and crustacea that are "injurious to human beings, to the interests of agriculture, horticulture, forestry, or to wildlife or the wildlife resources of the United States. The act declares importation or transportation of any live wildlife as injurious and prohibited, except as provided under the act. The zebra mussel is listed under this act. To view the act, visit www.fws.gov/invasives/Index.Lacey Act.html.



Michigan Laws

In 2005, Michigan established several invasive species laws creating lists of restricted and prohibited species, rules of possession, penalties for intentional introduction and releases, and a permit program. The new laws also established an Invasive Species Advisory Council including the directors of the departments of Natural Resources (DNR), Environmental Quality (DEQ) and Agriculture (MDA). The council is responsible for reviewing and updating these lists, as well as several other duties. The lists and rules of possession are included at the end of this section and can also be found on the Internet at www.legislature.mi.gov/documents/2005-2006/publicact/pdf/2005-PA-0077.pdf.

The DNR is responsible for enforcement for plants and animals. The Department of Agriculture is responsible for enforcement related to insects. Michigan's rules of possession and penalties apply to those who intentionally or knowingly introduce a prohibited or restricted species. To view the description of penalties, visit www.legislature.mi.gov/documents/2005-2006/publicact/pdf/2005-PA-0076.pdf.

Michigan also has laws and rules pertaining to aquatic plant control. A permit from the Department of Environmental Quality is required for the application of chemicals to any plant that is growing in standing water at the time of the application. Manual removal of Eurasian water-milfoil, curly leaf pondweed, purple loosestrife or other invasive aquatic plants does not require a permit. In addition, anyone cutting plants of any species must remove them. A permit is not required for the use of biological control such as Eurasian water-milfoil weevils.

Local Ordinances

Local weed ordinances may also exist. Contact your local municipality or government to find out more information for your area.

Michigan Aquatic Invasive Species Laws

Michigan Public Acts 70–74 of 2005 define the following as prohibited and restricted aquatic fish and plant species and describe the rules of possession:

Prohibited and Restricted Species

"Prohibited fish species" means any of the following or the eggs thereof:

- Bighead carp *(Hypophthalmichthys nobilis)* or a hybrid or genetically engineered variant thereof.
- Bitterling *(Rhodeus sericeus)* or a hybrid or genetically engineered variant thereof.
- Black carp *(Mylopharyngodon piceus)* or a hybrid or genetically engineered variant thereof.
- Grass carp *(Ctenopharyngodon idellus)* or a hybrid or genetically engineered variant thereof.
- Ide *(Leuciscus idus)* or a hybrid or genetically engineered variant thereof.
- Japanese weatherfish *(Misgurnus anguillicaudatus)* or a hybrid or genetically engineered variant thereof.
- Rudd *(Scardinius erythrophthalamus)* or a hybrid or genetically engineered variant thereof.
- Silver carp *(Hypophthalmichthys molitrix)* or a hybrid or genetically engineered variant thereof.
- A fish of the snakehead family (family *Channidae*) or a genetically engineered variant thereof.
- Tench *(Tinca tinca)* or a hybrid or genetically engineered variant thereof.

"Prohibited aquatic plant species" means any of the following or fragments or seeds thereof:

- African oxygen weed *(Lagarosiphon major)* or a hybrid or genetically engineered variant thereof.
- Brazilian elodea *(Egeria densa)* or a hybrid or genetically engineered variant thereof.
- European frogbit *(Hydrocharis morsus-ranae)* or a hybrid or genetically engineered variant thereof.
- Giant hogweed *(Heracleum mantegazzianum)* or a hybrid or genetically engineered variant thereof.
- Giant salvinia *(Salvinia molesta, auriculata, biloba,* or *herzogii)* or a hybrid or genetically engineered variant thereof.
- Hydrilla *(Hydrilla verticillata)* or a hybrid or genetically engineered variant thereof.
- Japanese knotweed *(Fallopia japonica)* or a hybrid or genetically engineered variant thereof.
- Parrot's feather *(Myriophyllum aquaticum)* or a hybrid or genetically engineered variant thereof.
- Water chestnut *(Trapa natans)* or a hybrid or genetically engineered variant thereof.
- Yellow flag iris *(Iris pseudacorus)* or a hybrid or genetically engineered variant thereof.
- Yellow floating heart *(Nymphoides peltata)* or a hybrid or genetically engineered variant thereof.

"Restricted aquatic plant species" means any of the following or fragments or seeds thereof:

- Curly leaf pondweed *(Potamogeton crispus)* or a hybrid or genetically engineered variant thereof.
- Eurasian water-milfoil *(Myriophyllum spicatum)* or a hybrid or genetically engineered variant thereof.
- Flowering rush *(Butomus umbellatus)* or a hybrid or genetically engineered variant thereof.
- Phragmites or common reed *(Phragmites australis)* or a hybrid or genetically engineered variant thereof.
- Purple loosestrife *(Lythrum salicaria)* or a hybrid or genetically engineered variant thereof, except for cultivars developed and recognized to be sterile and approved by the director of agriculture under section 16a of the insect pest and plant disease act, 1931 PA 189, MCL 286.216a.

Rules of Possession

(1) A person shall not knowingly possess a live organism if the organism is a prohibited species or restricted species, except under one or more of the following circumstances:

(a) The person intends to present a specimen of the prohibited species or restricted species, for identification or similar purposes, to a person who is a certified applicator or registered applicator under part 83, to a public or private institution of higher education, or to the department or any other state, local, or federal agency with responsibility for the environment or natural resources.

(b) The person has been presented with a specimen of a prohibited species or restricted species for identification or similar purposes under subdivision (a).

(c) The person possesses the prohibited species or restricted species in conjunction with otherwise lawful activity to eradicate or control the prohibited species or restricted species.

(d) If the prohibited species or restricted species is not an insect species, the possession is pursuant to a permit issued for education or research purposes by the department under section 41306. If the prohibited species or restricted species is an insect species, the possession is pursuant to a permit issued for education or research purposes by the Department of Agriculture under section 41306 or by the United States Department of Agriculture.

(2) A person described in subsection (1)(b) or (c) shall notify the Department of Natural Resources, the Department of Agriculture, or the Department of Environmental Quality if the prohibited species or restricted species was found at a location where it was not previously known to be present.

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Section 4:
Where are the invasives?

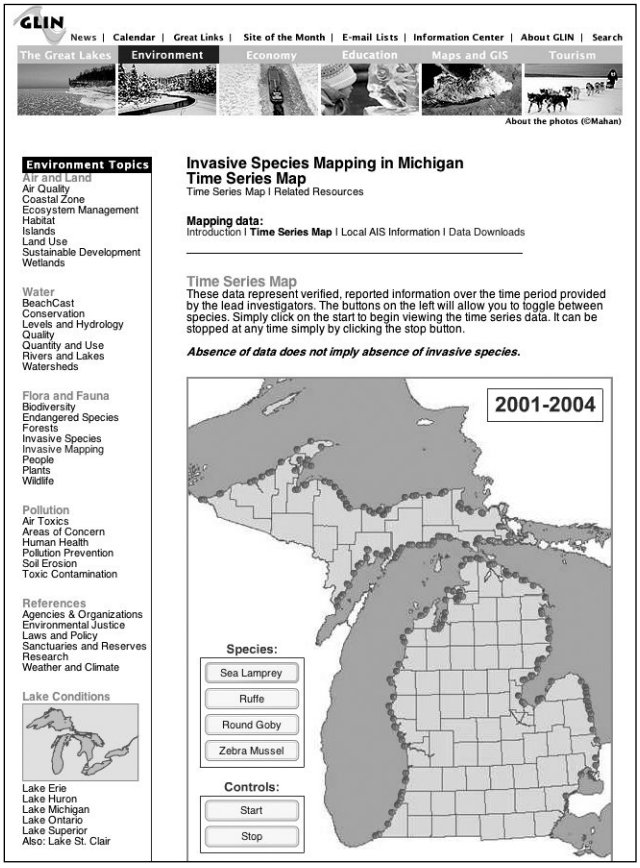
Tracking infestations of aquatic invasive species is an enormous undertaking, especially with limited financial resources. A few of Michigan's invasions have been documented by scientific research or government agencies, but most infestations are reported by informed, concerned volunteers. In this section you'll find the infestation information that was available when this handbook was published.

ONLINE DATABASE OF AIS IN MICHIGAN

In 2004, the Great Lakes Commission produced a spatial database of key aquatic invasive species (AIS) invasions within the state of Michigan, presented on a series of web pages at www.great-lakes.net/envt/flora-fauna/invasive/mapping.html

The webpages:

- Portray infestations of the following species in Michigan:
  - Sea lamprey
  - Round goby
  - Ruffe
  - Purple loosestrife
  - Zebra mussel
- Provide time series maps of sea lamprey, ruffe, round goby and zebra mussel infestations between 2001 and 2004.
- Show county and watershed infestation information about sea lamprey, ruffe, round goby, zebra mussel, quagga mussel and purple loosestrife.
- Present species data for the previously mentioned species and abstracts for spiny waterflea and Eurasian water-milfoil.



www.great-lakes.net/envt/flora-fauna/invasive/timeseries.html

ZEBRA MUSSEL PRESENCE IN MICHIGAN'S INLAND LAKES

Michigan Sea Grant collects reports of zebra mussel infestation in the state's inland lakes and makes them accessible online. The list is updated at the end of each calendar year. If you find zebra mussels in a previously unreported lake, please note the location and take/send an alcohol-preserved specimen to the nearest Sea Grant Extension office (see Section 2) for confirmation. See: www.miseagrant.umich.edu/ais/lakes.html

COUNTY	LAKE NAME	COUNTY	LAKE NAME	COUNTY	LAKE NAME
Alcona	Alcona Pond	Cass	Christianna	Grand Traverse	Green
Alcona	Cedar	Cass	Diamond	Grand Traverse	Silver
Allegan	Allegan	Cass	Donnell	Grand Traverse	Spider
Allegan	Hutchins	Cass	Eagle	Hillsdale	Baw Beese
Allegan	Green	Cass	Finch	Hillsdale	Bird
Allegan	Miller	Cass	Fish	Hillsdale	Hemlock
Alpena	Beaver	Cass	Indian	Hillsdale	Long
Alpena	Four Mile	Cass	Juno	Ingham	Lansing
Alpena	Long	Cass	Long	Ionia	Morrison
Alpena	Seven Mile	Cass	Magician	Iosco	Cooke
Antrim	Bellaire	Cass	Twin North	Iosco	Foote
Antrim	Birch	Cass	Twin South	Iosco	Long
Antrim	Clam	Charlevoix	Marion	Iosco	Van Ettan
Antrim	Six Mile	Charlevoix	Walloon	Iron	Fortune Pond
Antrim	Torch	Cheboygan	Burt	Jackson	Ackerson
Barry	Gun	Cheboygan	Douglas	Jackson	Big Portage
Barry	Payne	Cheboygan	Mullet	Jackson	Clark
Benzie	Bass	Clare	Crooked	Jackson	Columbia
Benzie	Crystal	Clare	Long	Jackson	Lime
Benzie	Herring	Clare	Sand	Jackson	Pleasant
Benzie	Loon	Clare	Windover	Jackson	Vineyard
Benzie	Otter	Crawford	Margarethe	Jackson	Wampler
Benzie	Platte	Dickinson	Antoine	Kalamazoo	Gull
Berrien	Paw Paw	Eaton	Mud	Kalamazoo	Indian
Branch	Coldwater	Emmett	Crooked	Kalamazoo	Long
Branch	Craig	Emmett	Paradise	Kalkaska	Pickerel
Branch	Lake of the Woods	Emmett	Pickerel	Kent	Blue
Branch	Marble	Genesee	Fenton	Kent	Dean
Branch	Matteson	Genesee	Holloway	Kent	Lincoln
Branch	Messenger	Genesee	Mott	Lapeer	Nepessing
Branch	Morrison	Genesee	Ponemah	Lenawee	Devil's
Branch	North	Genesee	Silver	Lenawee	Evans
Branch	Randall	Gladwin	Pratt	Lenawee	Sand
Branch	South	Gladwin	Secord (Titta)	Livingston	Bruin
Branch	Union	Gladwin	Smallwood (Titta)	Livingston	Blind
Calhoun	Duck	Gladwin	Wixom	Livingston	Chemung
Cass	Baldwin	Grand Traverse	Arbutus	Livingston	East Crooked
Cass	Big Fish	Grand Traverse	Duck	Livingston	Halfmoon
Cass	Birch	Grand Traverse	Fife	Livingston	Orr

Zebra Mussel Presence in Michigan's Inland Lakes (Continued)

COUNTY	LAKE NAME
Livingston	Patterson
Livingston	Runyan
Livingston	Rush
Livingston	Sandy Bottom
Livingston	School
Livingston	Strawberry
Livingston	Watson
Livingston	Zukey
Luce	Twin Lake
Manistee	Bear
Manistee	Tippy
Mason	Ford
Mason	Gunn
Mason	Hackert
Mason	Hamlin
Mecosta	Bergess
Mecosta	Blue
Mecosta	Horsehead
Mecosta	Mecosta
Mecosta	Round
Midland	Sanford (Titta)
Montcalm	Derby
Montcalm	Spring
Montcalm	Turk
Montcalm	Whitefish
Montcalm	West
Montmorency	Ess
Muskegon	Big Blue
Oakland	Angelus
Oakland	Bald Eagle
Oakland	Big
Oakland	Brendle
Oakland	Bush
Oakland	Cass
Oakland	Cedar (Stringy)
Oakland	Cedar Island
Oakland	Clear (Stringy)
Oakland	Commerce
Oakland	Crescent
Oakland	Crystal
Oakland	Duck
Oakland	Elizabeth
Oakland	Green
Oakland	Greens
Oakland	Highland
Oakland	Kent
Oakland	Lakeville
Oakland	Long (Stringy)
Oakland	Loon
Oakland	Lotus
Oakland	Lower Pettibone
Oakland	Lower Straits
Oakland	Lower Trout
Oakland	Maceday
Oakland	Middle Straits
Oakland	Moore
Oakland	Oakland
Oakland	Orchard
Oakland	Orion
Oakland	Otter
Oakland	Oxbow
Oakland	Pine
Oakland	Pettibone
Oakland	Pontiac
Oakland	Proud
Oakland	Schoolhouse
Oakland	Silver
Oakland	Squaw (Stringy)
Oakland	Stony Creek Imp
Oakland	Sylvan
Oakland	Tan (Stringy)
Oakland	Union
Oakland	Upper Straits
Oakland	VanNorman
Oakland	Voorheis
Oakland	Walled
Oakland	Walnut
Oakland	Watkins
Oakland	Whipple
Oakland	White
Oakland	Wolverine
Oakland	Woodhull
Oceana	McLaren
Oceana	Silver
Osceola	Big
Otsego	Bradford
Presque Isle	Esau
Presque Isle	Grand
Roscommon	Higgins
Roscommon	Houghton
Roscommon	St. Helen
St. Joseph	Corey
St. Joseph	Fisher
St. Joseph	Klinger
St. Joseph	Palmer
St. Joseph	Prairie River
St. Joseph	Sturgeon
St. Joseph	Wahbememe
Van Buren	Bear
Van Buren	Banksons
Van Buren	Cedar
Van Buren	Gravel
Van Buren	Lake of the Woods
Van Buren	Saddle
Washtenaw	Barton Pond
Washtenaw	Base Line
Washtenaw	Ford
Washtenaw	Gallagher
Washtenaw	Halfmoon
Washtenaw	Independence
Washtenaw	Portage
Washtenaw	Whitmore
Washtenaw	Strawberry
Washtenaw	Tamarack
Washtenaw	Whiteford
Wayne	Belleville

MICHIGAN LAKES INFESTED WITH EURASIAN WATER-MILFOIL 2006

As of early 2007, the following lakes were reported as infested with Eurasian water-milfoil:

COUNTY	LAKE NAME	COUNTY	LAKE NAME	COUNTY	LAKE NAME
Alcona	Cedar Lake	Cheboygan	Mullett Lake	Genesee	Lake Ponemah
Alcona	Vaughn Lake	Clare	Arnold Lake	Genesee	Lake Shinanguag
Allegan	Grebe Lake	Clare	Bertha Lake	Genesee	Softwater Lake
Allegan	Hutchins Lake	Clare	Blue Gill Lake	Genesee	Squaw Lake
Allegan	Lower Scott Lake	Clare	Budd Lake	Gladwin	Lake Contos
Allegan	Miner Lake	Clare	Cranberry Lake	Gladwin	Lake Lancelot
Allegan	Minkler Lake	Clare	Crooked Lake	Gladwin	Lake Lander
Allegan	Monterey Lake	Clare	Eight Point Lake	Gladwin	Lake Lochbrae
Allegan	Osterhout Lake	Clare	Five Lakes	Gladwin	Pratt Lake
Allegan	Selkirk Lake	Clare	Lake George	Gladwin	Secord Lake
Antrim	Bass Lake	Clare	Lake of the Pines	Gladwin	Smallwood Lake
Barry	Algonquin Lake	Clare	Lily Lake	Gladwin	Lake Twenty
Barry	Barlow Lake	Clare	Little Long Lake	Gladwin	Wiggins Lake
Barry	Bristol Lake	Clare	Long Lake	Gladwin	Wixom Lake
Barry	Cobb Lake	Clare	Perch Lake	Gogebic	Bass Lake
Barry	Duncan Lake	Clare	Shamrock Lake	Gogebic	Clearwater Lake
Barry	Fawn Lake	Clare	Shingle Lake	Gogebic	Duck Lake
Barry	Fine Lake	Clare	Springwood Lakes	Gogebic	Langford Lake
Barry	Guernsey Lake	Clare	Sutherland Lake	Gogebic	Pomeroy Lake
Barry	Gun Lake	Clinton	Lake Geneva	Grand Traverse	Arbutus Lake
Barry	Jordan Lake	Clinton	Park Lake	Grand Traverse	Fife Lake
Barry	Payne Lake	Clinton	Lake Victoria	Grand Traverse	Long Lake
Barry	Pine Lake	Crawford	Lake Margrethe	Hillsdale	Lake Bel Air
Barry	Podunk Lake	Dickinson	Lake Antoine	Hillsdale	Boot Lake
Barry	Stewart Lake	Dickinson	Bass Lake	Hillsdale	Crystal Lake
Barry	Turner Lake	Dickinson	Browns Lake	Hillsdale	Fourth Lake
Barry	Upper Crooked Lake	Dickinson	Carney Lake	Hillsdale	Lake Leann
Barry	Wall Lake	Dickinson	Cowboy Lake	Hillsdale	Perch Lake
Branch	Coldwater Lake	Dickinson	Gene's Pond	Hillsdale	Lake Somerset
Branch	Lake George	Dickinson	Hamilton Lake	Ingham	Hawk Island Lake
Branch	Lake Lavine	Dickinson	Hanbury Lake	Ingham	Lake of the Hills
Branch	Marble Lake	Dickinson	Lake Mary	Ingham	Lake Lansing
Branch	Messenger/Hodunk Chain of Lakes	Dickinson	Norway Lake	Ionia	Long Lake
Branch	Union Lake	Dickinson	Sawyer Lake	Ionia	Morrison Lake
Calhoun	Beacon Lake	Eaton	Pine Lake	Ionia	Woodard Lake
Calhoun	Goguac Lake	Genesee	Byram Lake	Iosco	Little Long Lake
Calhoun	Laird Lake	Genesee	Crooked Lake	Iosco	Loon Lake
Calhoun	Lyon Lake	Genesee	Lake Fenton	Iosco	Van Etten Lake
Calhoun	St. Marys Lake	Genesee	Griffin Lake	Iosco	West Londo Lake
Cass	Dewey Lake	Genesee	Lobdell Lake	Iron	Ice Lake
Cass	Little Fish Lake	Genesee	Loon Lake	Isabella	Camelot Lake
Cass	Pleasant Lake	Genesee	Mckane Lake	Isabella	Halls Lake
Charlevoix	Lake Charlevoix	Genesee	Myers Lake	Isabella	Lake of the Hills
Cheboygan	Burt Lake	Genesee	Pine Lake	Isabella	Ojibwa Lakes

Eurasian Water-milfoil in Michigan Lakes (Continued)

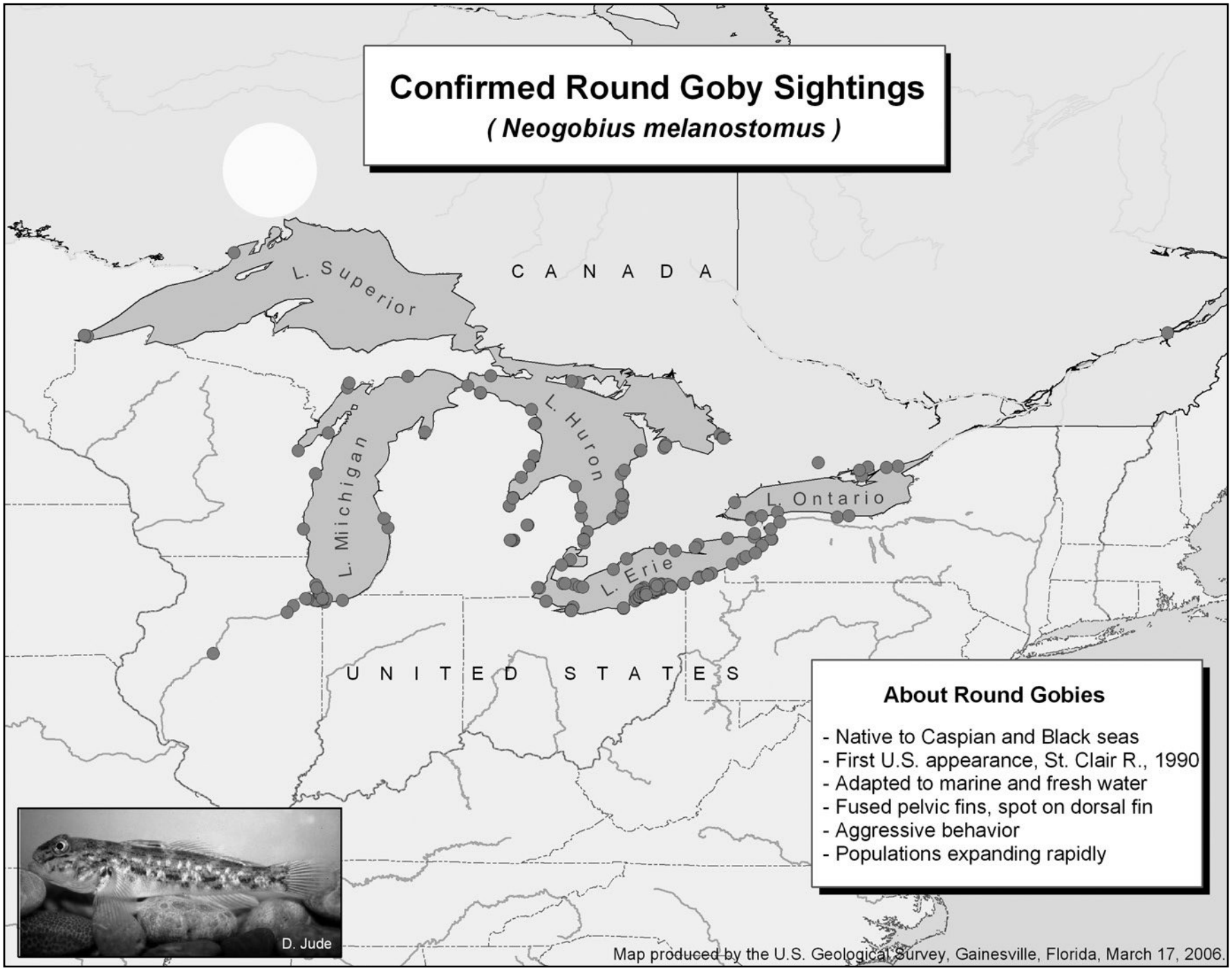
COUNTY	LAKE NAME
Jackson	Clear Lake
Jackson	Lake Columbia
Jackson	Crispell Lake
Jackson	Michigan Center Lake
Jackson	Mirror Lake
Jackson	Round Lake
Kalamazoo	Eagle Lake
Kalamazoo	Gourdneck Lake
Kalamazoo	Indian Lake
Kalamazoo	Little Asylum Lake
Kalamazoo	Long Lake
Kalamazoo	Sherman Lake
Kalamazoo	Sunset Lake
Kalamazoo	West Lake
Kalkaska	Manistee Lake
Kalkaska	Price Lake
Kent	Bass Lake
Kent	Lake Bella Vista
Kent	Big Brower Lake
Kent	Big Crooked Lake
Kent	Big Myers Lake
Kent	Big Pine Island Lake
Kent	Bostwick Lake
Kent	Camp Lake
Kent	Campau / Kettle Lakes
Kent	Cowan Lake
Kent	Degraaf Pond
Kent	Echo Lake
Kent	Fisk Lake
Kent	Green Ridge Ponds
Kent	Little Brower Lake
Kent	Little Myers Lake
Kent	Little Pine Island Lake
Kent	Mead Lake
Kent	Middleboro Lake
Kent	Millennium Park Lakes
Kent	Perch Lake
Kent	Pine Lake
Kent	Porter Lake
Kent	Reeds Lake
Kent	Round Lake
Kent	Silver Lake
Kent	Tall Pines Lake
Kent	Westboro Lake
Kent	Woodbeck Chain of Lakes
Lake	Big Star Lake
Lake	Harper Lake
Lake	Idlewild Lake
Lapeer	Barnes Lake
Lapeer	D-Bar-A Scout Ranch Lakes
Lapeer	Hemingway Lake
Lapeer	Merritt Lake
Lapeer	Lake Metamora
Lenawee	Dewey Lake
Livingston	Baseline Lake
Livingston	Beach Lake
Livingston	Bennett Lake
Livingston	Bitten Lake
Livingston	Brighton Lake
Livingston	Brophy Lake and Ponds
Livingston	Bullard Lake
Livingston	Cedar Lake
Livingston	Lake Chemung
Livingston	Clark Lake
Livingston	Coon Lake
Livingston	Earl Lake
Livingston	Faussett Lake
Livingston	Fonda Lake
Livingston	Grand Beach Lake
Livingston	Hiland / Mickey Carl Lakes
Livingston	Lake of the Pines
Livingston	Little Crooked Lake
Livingston	Long Lake
Livingston	Lake Moraine
Livingston	Pardee Lake
Livingston	Pleasant Lake
Livingston	Portage Lake
Livingston	Putnam Lake
Livingston	Round Lake
Livingston	Runyan Lake
Livingston	Rush Lake
Livingston	Ryan Lake
Livingston	Lake Serene
Livingston	Lake Shannon
Livingston	Silver Fox Lake
Livingston	Strawberry Lake
Livingston	Thompson Lake
Livingston	Lake Tyrone
Livingston	Whitmore Lake
Livingston	Winans Lake
Livingston	Woodland Lake
Livingston	Zukey Lake
Mackinac	Millecoquins Lake
Macomb	Shelby Lake
Macomb	Spring Lake
Macomb	Stony Creek Lake
Macomb	Lake Tranquility
Manistee	Bear Lake
Manistee	Manistee Lake
Mason	Bass Lake
Mason	Hamlin Lake
Mason	Long Lake
Mason	Pleiness Lake
Mecosta	Brady Lake
Mecosta	Chippewa Lake
Mecosta	Morley Mill Pond
Mecosta	Round / Blue / Mecosta Lakes
Mecosta	School Section Lake
Midland	Sanford Lake
Missaukee	Crooked Lake
Missaukee	Lake Missaukee
Missaukee	Sapphire Lake
Montcalm	Baldwin Lake
Montcalm	Big Whitefish Lake
Montcalm	Clifford Lake
Montcalm	Como Lake
Montcalm	Cowden Lake
Montcalm	Derby Lake
Montcalm	Dickerson Lake
Montcalm	Duck Lake
Montcalm	Fourth Lake
Montcalm	Indian Lake
Montcalm	Little Whitefish Lake
Montcalm	Montcalm Lake
Montcalm	Muskellunge Lake
Montcalm	Rainbow / Middle Lakes
Montcalm	Rock Lake
Montcalm	Lake Stanton
Montcalm	Townline Lake
Montcalm	Winfield Lake
Muskegon	Bear Lake
Muskegon	Big Blue Lake
Muskegon	Middle Lake
Muskegon	Mona Lake
Muskegon	Muskegon Lake
Muskegon	North Lake
Muskegon	West Lake
Muskegon	White Lake
Newaygo	Baptist Lake
Newaygo	Brooks Lake
Newaygo	Crystal Lake

Eurasian water-milfoil in Michigan Lakes (Continued)

COUNTY	LAKE NAME
Newaygo	Diamond Lake
Newaygo	Emerald-Sylvan Lake
Newaygo	Englewright Lake
Newaygo	Hess Lake
Newaygo	Kimball / Pickerel Lakes
Newaygo	Ryerson Lake
Newaygo	Sand Lake
Oakland	Andover and Dutton Ponds
Oakland	Big Lake
Oakland	Lake Braemar
Oakland	Brendel / Neva Lakes
Oakland	Bridle Lake
Oakland	Buckhorn Lake
Oakland	Carroll Lake
Oakland	Cass Lake
Oakland	Clarkston Mill Ponds
Oakland	Cedar Island Lake
Oakland	Chalmers Lake
Oakland	Charlick Lake
Oakland	Childs Lake
Oakland	Clark Lake
Oakland	Cranberry Lake
Oakland	Davisburg Mill Pond
Oakland	Dixie Lake
Oakland	Duck Lake
Oakland	Eagle Lake
Oakland	Echo Lake
Oakland	Eliza Lake
Oakland	Fish Lake
Oakland	Flanders Lake
Oakland	Gilbert Lake
Oakland	Green / Grass Lake
Oakland	Green Lake
Oakland	Greens Lake
Oakland	Hawthorne Lake
Oakland	Highland Lake
Oakland	Holiday Lake
Oakland	Huntoon Lake
Oakland	Indianwood Lake
Oakland	Island Lake
Oakland	Kellogg Lake
Oakland	Kent Lake
Oakland	Knoblock Lake
Oakland	Little Walters Lake
Oakland	Loon Lake
Oakland	Lotus Lake
Oakland	Lake Louise
Oakland	Manitou Lake
Oakland	Lake Marion
Oakland	Meadow Lake
Oakland	Lake Mickelson
Oakland	Miller Lake
Oakland	Mirror Lake
Oakland	Moore Lake
Oakland	Morgan Lake
Oakland	Lake Oakland
Oakland	Lake Ona
Oakland	Lakeville
Oakland	Orange Lake
Oakland	Orchard Lake
Oakland	Lake Orion
Oakland	Oxbow Lake
Oakland	Perry Lake
Oakland	Pine Lake
Oakland	Pleasant Lake
Oakland	Pontiac Lake
Oakland	Round Lake
Oakland	Schoolhouse Lake
Oakland	Sears Lake
Oakland	Lake Sherwood
Oakland	Shore Hill Lake
Oakland	Silver Lake
Oakland	Simpson Lake
Oakland	South Commerce Lake
Oakland	Square Lake
Oakland	Susin Lake
Oakland	Sylvan & Otter Lakes
Oakland	Taggett Lake
Oakland	Tipsico Lake
Oakland	Tull Lakes
Oakland	Turtle Lake
Oakland	Upper Lake Sherwood
Oakland	Upper Long Lake
Oakland	Van Norman Lake
Oakland	Voorheis Lake
Oakland	Wabeek Lake
Oakland	Walled Lake
Oakland	Walnut Lake
Oakland	Walters Lake
Oakland	Waumegah Lake
Oakland	White Lake
Oakland	Williams Lake
Oakland	Willow Lake
Oakland	Wing Lake
Oakland	Wolverine Lake
Oakland	Woodhull Lake
Oakland	Woodpecker Lake
Oakland	Woodruff Lake
Oceana	Pentwater Lake
Oceana	Silver Lake
Oceana	Upper Silver Lake
Ogemaw	Bush Lake
Ogemaw	Clear Lake
Ogemaw	Hardwood Lake
Ogemaw	North Dease Lake
Ogemaw	Lake Ogemaw
Ogemaw	Rose Lake
Ogemaw	South Dease Lake
Osceola	Hicks Lake
Osceola	Hogback Lake
Osceola	Lake Miramichi
Osceola	Rose Lake
Osceola	Saddlebag Lake
Osceola	Tiff Lake
Otsego	Long Lake
Otsego	Lake Louise
Ottawa	Pigeon Lake
Ottawa	Spencer Lake
Ottawa	Spring Lake
Presque Isle	Lake Nettie
Roscommon	Higgins Lake
Roscommon	Houghton Lake
Roscommon	Lake James
Roscommon	Lake St. Helen
Saginaw	Haithco Lake
Saint Joseph	Clear Lake
Saint Joseph	Fish Lake
Saint Joseph	Klinger Lake
Saint Joseph	Omena Lake
Saint Joseph	Palmer & Long Lakes
Saint Joseph	Lake Templene
Shiawassee	Scenic Lake
Tuscola	Lake Evergreen
Van Buren	Ackley Lake
Van Buren	Bankson Lake
Van Buren	Big Crooked Lake
Van Buren	Brownwood Lake
Van Buren	Cedar Lake
Van Buren	Lake Cora
Van Buren	Gravel Lake
Van Buren	Keeler Lake
Van Buren	Little Crooked Lake
Van Buren	Maple Lake
Van Buren	Mill Lake
Van Buren	Muskrat Lake
Van Buren	North Lake
Van Buren	Reynolds Lake
Van Buren	Round Lake
Van Buren	Saddle Lake
Van Buren	School Section Lake
Van Buren	Three Legged Lake
Washtenaw	Horseshoe Lake
Washtenaw	North Lake
Washtenaw	Stonevalley Lake
Washtenaw	Sugar Loaf Lake
Washtenaw	Sunset Lake
Washtenaw	Sutton Lake / Pond
Wayne	Belle Isle Lakes / Canals
Wexford	Lake Gitchegumee
Wexford	Lake Mitchell

Confirmed Round Goby Sightings

(Neogobius melanostomus)



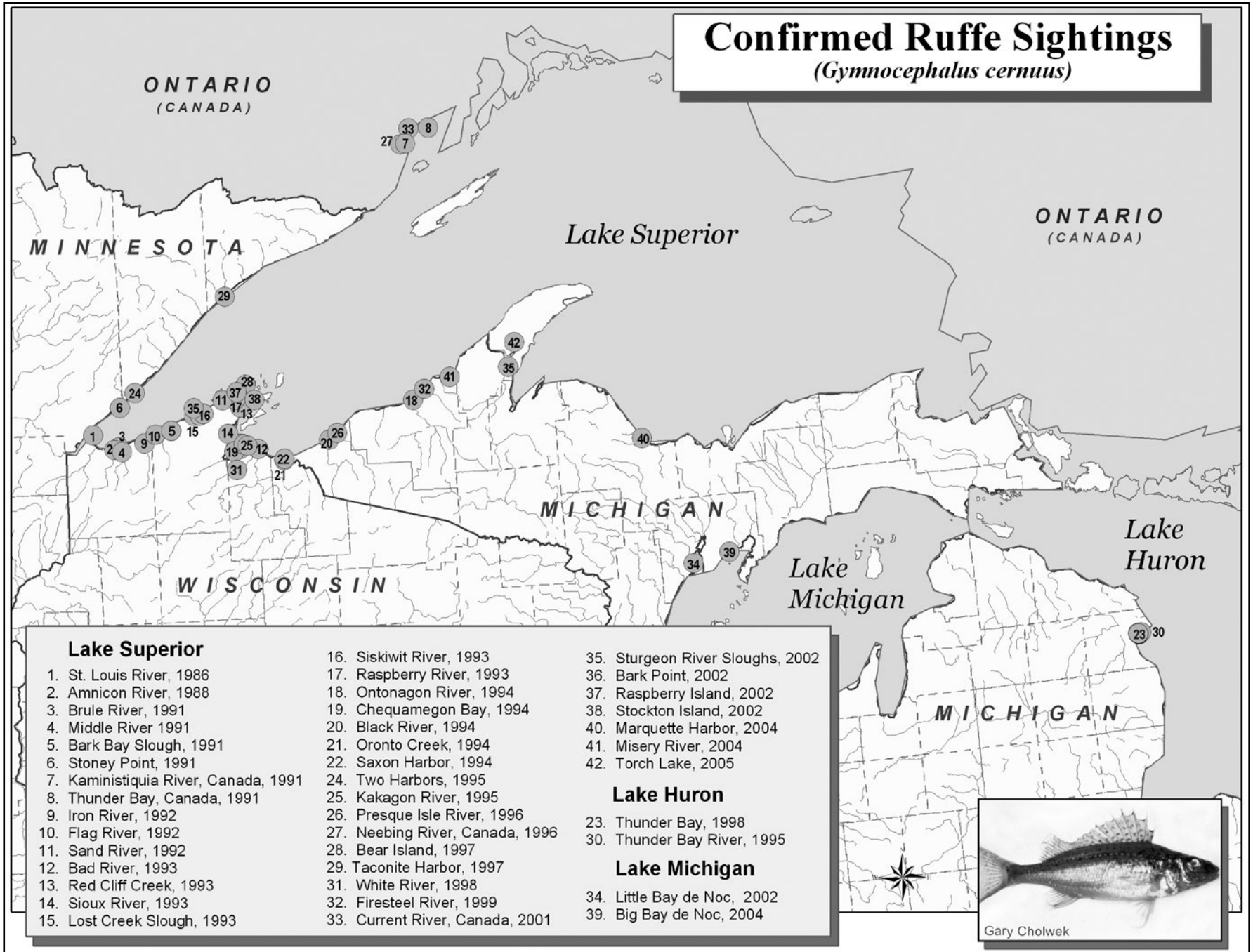
About Round Gobies

- Native to Caspian and Black seas
- First U.S. appearance, St. Clair R., 1990
- Adapted to marine and fresh water
- Fused pelvic fins, spot on dorsal fin
- Aggressive behavior
- Populations expanding rapidly

Map produced by the U.S. Geological Survey, Gainesville, Florida, March 17, 2006.

Confirmed Ruffe Sightings

(Gymnocephalus cernuus)



Lake Superior

1. St. Louis River, 1986
2. Amnicon River, 1988
3. Brule River, 1991
4. Middle River 1991
5. Bark Bay Slough, 1991
6. Stoney Point, 1991
7. Kaministiquia River, Canada, 1991
8. Thunder Bay, Canada, 1991
9. Iron River, 1992
10. Flag River, 1992
11. Sand River, 1992
12. Bad River, 1993
13. Red Cliff Creek, 1993
14. Sioux River, 1993
15. Lost Creek Slough, 1993
16. Siskiwit River, 1993
17. Raspberry River, 1993
18. Ontonagon River, 1994
19. Chequamegon Bay, 1994
20. Black River, 1994
21. Oronto Creek, 1994
22. Saxon Harbor, 1994
24. Two Harbors, 1995
25. Kakagon River, 1995
26. Presque Isle River, 1996
27. Neebing River, Canada, 1996
28. Bear Island, 1997
29. Taconite Harbor, 1997
31. White River, 1998
32. Firesteel River, 1999
33. Current River, Canada, 2001
35. Sturgeon River Sloughs, 2002
36. Bark Point, 2002
37. Raspberry Island, 2002
38. Stockton Island, 2002
40. Marquette Harbor, 2004
41. Misery River, 2004
42. Torch Lake, 2005

Lake Huron

23. Thunder Bay, 1998
30. Thunder Bay River, 1995

Lake Michigan

34. Little Bay de Noc, 2002
39. Big Bay de Noc, 2004

Data Source: U.S. Fish and Wildlife Service. Map produced by the U.S Geological Survey, Nonindigenous Aquatic Species Database, February 10, 2006.

CLEAN BOATS CLEAN WATERS

Section 5:
How can volunteers organize an AIS watercraft education program?

The Clean Boats, Clean Waters program is an opportunity for volunteers to assist in the management and control of invasive species. Through Clean Boats, Clean Waters, volunteers are trained to organize and conduct watercraft inspection demonstrations. Trained volunteers educate boaters about how and where invasive species are most likely to hitch a ride into bodies of water and cause damage to their equipment. By showing boaters how to perform boat and trailer checks and distributing informational material, volunteers can make a difference in helping prevent the spread of invasive species and damage to recreational equipment.

This volunteer program demonstrates that people are willing to go beyond what is required if they understand the needs and benefits, and that they can be applied close to home.

GETTING STARTED

Recreational boating can be a significant corridor for the spread of invasive species between bodies of water in Michigan. This pathway is a concern because of the more than 900,000 registered boaters moving around Michigan's 11,000 lakes. Watercraft inspection demonstrations at boat landings are designed to increase public awareness about invasive species and to assist boaters in taking preventive steps to avoid further spreading of troublesome species and damage to their equipment.

Attending a Clean Boats, Clean Waters training workshop provides you with all the tools you need to start such a volunteer watercraft inspection demonstration program in your community. Developing an effective program requires patience, time, and an eye for organizing a working schedule.

A group that consists of a volunteer coordinator and a committee of several people is the best way to distribute the tasks equally and prevent volunteer burnout. When planning a volunteer watercraft program, consider these five Ws:

WHOM will you recruit for the watercraft education team?

Adult and youth volunteers can be recruited through lake association newsletters, local schools, 4-H, or scouting groups. Many service organizations are looking for community involvement opportunities. We recommend at least two people at the landing. Ideally, an adult should work with a youth volunteer. Boaters are very cooperative when a young person is giving the message: "Clean Boats, Clean Waters, please."

WHAT are the duties of a watercraft educator?

Before you organize a team, decide what skills and tasks volunteers need for effective interaction with the public at boat landings. Generally, educators perform three duties:

1. demonstrate how to visually check boats and recreational equipment for any hitchhiking plants or animals;
2. demonstrate where and how to clean recreational equipment and other prevention steps boaters need to take every time they leave the water;
3. distribute educational materials.

Additional duties may include recording data on the Watercraft Information Report (see Section 6) or keeping track of supplies.

Here are some specific skills to consider:

A Clean Boats, Clean Waters volunteer is…

- caring – wants people to enjoy water recreation and wants Michigan to be free of aquatic invasive species;
- congenial – interested in meeting new people and helping them;
- informed – understands the problems caused by aquatic invasive species;
- a good communicator – able to explain the problem and demonstrate inspection and cleaning techniques;
- flexible – willing to volunteer on some weekends and holidays;
- physically able to inspect watercraft and trailers;
- reliable – ready, willing and able to make and keep a commitment to the program during boating season;
- accurate – able to record information for program organizers.

To identify the watercraft education team at a boat landing, all volunteers should wear Clean Boats, Clean Waters T-shirts. Volunteers need to wear this T-shirt to signify that they are working on a specific program-Clean Boats, Clean Waters- and not harassing boaters at the landings. Two T-shirts are included in each of the resource kits.

In addition, 20 Clean Boats, Clean Waters logo stickers are included in the resource kit to use when the weather is inclement and short-sleeve T-shirts just won't work. Just peel off the protective backing on the logo, and place the sticker on your sweatshirt or coat. No matter what the weather, boaters will be able to identify the watercraft education team at a glance.

WHEN is the best time to volunteer at a boat landing?

When recruiting volunteers, be specific about the amount of time you want them to work. A volunteer is more likely to agree to a three-hour shift once or twice a month rather than an open invitation to volunteer all summer on weekends and holidays. Volunteers will readily step up if they know the expectations and how much time is realistically needed.

To get the most "bang for your buck," become acquainted with the activity on your lake and when the lake is the busiest. Are the weekends a flurry of activity from Friday night at 4 p.m. until 8 p.m. Sunday? Or is Saturday morning from 6 a.m. until 10 a.m. the active time at the landings? Usually, holiday weekends during the summer are the busiest times at launch sites. Anglers are usually up and on the lake by dawn and always out on opening day of fishing season. Recreational boaters usually use the lake in the afternoon, and sunny, warm days draw lots of people to the lake! Become aware of fishing tournaments and special lake events that draw many boats to the landings. Remember, the boat landing is often the first place an aquatic invasive species enters the system.

WHERE will the watercraft inspection demonstrations take place?

It is important to find out who owns the boat landing before you begin to schedule work shifts for your volunteers. The landing may be owned and maintained by one of several entities: the federal government, state, township, lake association, or a private business or individual. To check ownership, you might need to contact several organizations.

Department of Natural Resources (DNR)-owned and leased boat landings are identified on the DNR Web site at www.mcgi.state.mi.us/MRBIS/findlocation.asp. County zoning offices, township and city halls are other potential sources.

You may need to obtain a permit for your event/activity (see Section 7). If you are thinking about installing signage or posting material, find out what the owner requires. If you have limited volunteer resources and many public landings, determine which landings receive the most boat traffic. Think about which landing is most likely to be the first place a hitchhiking invasive will appear.

WHY is this volunteer program necessary?

Be prepared to answer this question. Often lake owners are frustrated with the public trust doctrine that mandates public use of all waters in Michigan. Lake owners feel it is unfair that they bear the brunt of the cost of managing aquatic invasive species. However, any proactive steps in preventing an infestation are more cost-effective than waiting for an infestation to occur.

Many lakefront property owners have been or are investing in control options at their own expense. Educating boaters can help to prevent the reintroduction of invasive species such as Eurasian water-milfoil into the lake. Preventing aquatic invasive species is a better management option than the expensive alternatives. For example, treating Eurasian water milfoil infestations with chemicals costs an average of $325 to $450 per acre per treatment. Eurasian water milfoil can grow two inches per day and can fragment into hundreds of new plants within hours, so it would not take long for Eurasian water-milfoil to cover hundreds of acres. If this does not impress you, contact members of a lake organization struggling with an invasive species. They can tell you firsthand the tremendous impact that one invasive species caused in their community. Remember, a little prevention is worth a lot of cure.

MATERIALS

Developing a Clean Boats, Clean Waters volunteer watercraft education program does not require a lot of money. By attending a training workshop, you will receive all that you need to start: educational materials, data collection forms, and two T-shirts. Boat landings can be very busy during the summer, and you may need more materials. Please refer to the Aquatic Invasive Species Publication List in Section 8 of this handbook. This list explains what publications are available, how to order more publications, and how to print some information from Web site links.

Resource Kit Contents

Amount	Item
1	Stop Exotics, Clean Your Boat DVD
2	Clean Boats, Clean Waters T-shirts
20	Clean Boats, Clean Waters stickers
100	Stop Aquatic Hitchhikers™ stickers
100	Watercraft checkpoint stickers
100	Eurasian water-milfoil cards
50	Round goby cards
100	Zebra mussel cards
50	Spiny waterflea and fishhook waterflea cards
50	Ruffe cards
50	Rusty crayfish cards
50	Hydrilla Hunt cards
50	The Facts on Eurasian Water-milfoil fact sheet

Materials to Have When Working at a Boat Launch:

You don't need to take all your materials to the boat landing. It's better to sort through the materials and decide what educational information is best suited for your area. The Clean Boats, Clean Waters program provides one plastic container in which to store all the educational materials in the resource kit. We recommend one resource kit for every landing you are monitoring. By using multiple plastic resource kits, each volunteer team can have all the materials they need and have them protected from the weather.

Key items to distribute to all boaters are the Watercraft Checkpoints card and Stop Aquatic Hitchhiker™ sticker. These will guide you and the boater in inspecting the appropriate places and describe the prevention steps that boaters need to take every time they leave the water.

Select other materials to take to the boat launch based on which aquatic invasive is most threatening in your area. Perhaps Eurasian water-milfoil is really a pressing issue for your lake; then it makes sense to give boaters *The Facts on Eurasian Water-milfoil* fact sheet and an identification card.

Resist the temptation to give the boater one of every card in the resource kit, because boaters will often discard them. It's best to start by handing out a little information and have additional material available if the boaters want to learn more about a particular invasive species.

Additional boat launch items to consider:

- Clipboard and pencil.
- Copy of the boat landing script (see Section 5).
- Watercraft Information Report (see Section 6 and the pocket of the handbook)
- Check Points Illustration (see Section 5 and the handbook pocket).
- Listing of lakes infested with zebra mussels and EWM
- Stop Aquatic Hitchhikers stickers.
- Selected watch cards and brochures (see Section 8).
- Cell phone and local contact phone numbers for emergencies.
- Digital camera.

WATERCRAFT INSPECTION DEMONSTRATION TIPS

An effective volunteer watercraft team is prepared to raise boater awareness and to encourage and demonstrate the steps necessary to avoid spreading invasive species and damage to recreational equipment. On very rare occasions, you may be uncomfortable about a situation or person. **Always** back away from a potentially dangerous or violent situation. **Never** encourage confrontation, no matter how strongly you might feel about the subject. Remember, volunteers are not enforcers of rules and should never jeopardize their own safety. If you are suspicious of someone (for example, a loiterer or someone who is not intending to go boating), do not hesitate to leave the launch site. You are better to be safe than sorry. If you feel that a boat launch site is unsafe in any way, please notify the organization you are working for. Use the following DO and DON'T lists to prepare your boat landing message.

The DO List

- Wear the Clean Boats, Clean Waters T-shirt to promote the message. This message gives credibility to the program and to the efforts that volunteers are making across the state.
- Always introduce yourself and mention the organization you are working for and why you are at the landing.
- Approach boat owners only before they are on the ramp.
- Always ask if the boater would mind answering a few questions.
- Be polite and courteous to all boaters you encounter.
- Listen to a boater's concerns. Remember that you are encouraging boaters to become interested in invasive species.
- Make sure boaters know that they can make a difference!

The DON'T List

- Don't begin asking questions upon approaching boaters, because they might be confused about who you are and why they should give you their time.
- Don't delay boaters or cause a backup.
- Never preach to a boater; your mission is to educate, not alienate.
- If the boater is reluctant to cooperate, hand out educational material and record whatever information you can.

BOAT LANDING MESSAGE

Getting out and speaking to the public can be intimidating. Volunteers can feel a little anxious and nervous. The following prepared script will help volunteers practice and role-play before their first boater shows up at the landing. Practicing with other folks will give volunteers the confidence it takes to greet a boater. If volunteers really want to watch a "pro," they just need to ask a few kids to get involved. Are kids intimidated? Usually not!

The following prepared script is only one sample of the many methods of addressing boaters at landings and performing watercraft inspection demonstrations. Each volunteer should develop his or her own style and learn how to adapt in a variety of boat landing experiences. Approach boaters only before they are on the ramp, and use the Watercraft Information Report to record the information about the boat and boater (see Section 6). At times you may have only 30 seconds to talk to the boater; other times, long lines at landings may provide you with lots of time to talk. Remember, if the boater is not interested, just hand out a checkpoint card and sticker and record whatever information you can.

No matter what style you use to approach boaters, any watercraft inspection demonstration process should include these points:

1. Tell them who you are, who you represent, and why you are there.
2. Ask if they have a short time to answer some questions.
3. Collect information on the Watercraft Information Report form.
4. Ask if they are familiar with Eurasian water-milfoil or zebra mussels. Briefly explain about these invasive species.
5. Ask if they will let you demonstrate how to inspect their boat and equipment.
6. Talk while inspecting, and point out watercraft checkpoints. If they do not want to assist you in the inspection, continue to talk about invasive species as you inspect.
7. Give your final message, the prevention steps:
   - Inspect and remove any visible mud, plants, fish, or animals before transporting equipment.
   - Drain water from equipment before transporting.
   - Dispose of unwanted bait in the trash, not in the water.
   - Spray, rinse, or dry equipment to remove or kill invasive species.
8. Give them the watercraft checkpoint card, a Stop Aquatic Hitchhikers™ sticker and other appropriate educational materials.
9. Thank them for their time and cooperation.

Sample Script

As the vehicle approaches, write down the state the vehicle is from and type of watercraft. Introduce yourself:

Good Morning/Afternoon. I am from _____. We are working with state agencies and local groups to talk with boaters about invasive species and help them check their boats for Eurasian water-milfoil and zebra mussels. We are trying to keep Eurasian water-milfoil, zebra mussels and other harmful invasive species from spreading from lake to lake. We also want to help boaters prevent damage that invasive species can cause their recreational equipment. I have a few quick questions I would like to ask you, and then I would like to walk around your watercraft with you and point out a few places where these species can attach to boats and trailers.

Hand out informational brochures or watch cards.

Ask the questions and record on the Watercraft Information Report:

1. What was the last body of water your boat was on? Print the name in the blank.
2. Did you use your boat during the past 5 days?
3. Did you take prevention steps (clean boat, trailer, and equipment)?
4. Have you ever heard of Eurasian water-milfoil, zebra mussels or other invasive species?

   If YES, check all categories from which they got information.

   ___ PSA ___ Publication

   ___ Newspaper/Media ___ Signs

   ___ Presentation or Display ___ Other

   If NO, explain that invasive plants and animals overtake the lake's ecological community and that state agencies are attempting to prevent their spread from lake to lake. Always explain to the boater that invasives are the reason that volunteers are out at the launches, trying to raise public awareness about how invasives spread and why they are so terrible for Michigan lakes and rivers.

5. Are you familiar with the problems caused by Eurasian water-milfoil?

   Eurasian water-milfoil grows in dense surface mats that shade out native plants, block fish movement, entangle boat motor propellers, and interfere with swimming and many other types of water recreation. Eurasian water-milfoil out-competes native vegetation needed by fish and wildlife. This underwater plant can grow very rapidly—up to 2" per day—and can reach lengths of 20 feet. Refer to pamphlets, brochures, and other handouts for more information to provide on EWM.

   If you know that the lake has zebra mussels or Eurasian water-milfoil, share this information with boaters.

6. Are you familiar with the problems caused by zebra mussels?

   Zebra mussels compete with other aquatic organisms for food. They reduce the amount of plankton in the water that fish feed on; they kill native clams by colonizing on their shells; and they clog intake pipes at water utilities and industries. In addition, zebra mussels can attach in huge numbers to any hard surface, such as the bottom of your boat if it was moored in the lake and to piers and docks. They can also damage your boat's bilge and live well. They reproduce quickly—one female can produce up to one million eggs per summer.

   Refer to pamphlets, brochures and other handouts for more information to provide on zebra mussels.

   Perform a watercraft check, (using checkpoint illustration):

   If you would walk around your boat with me, I can show you some areas to look for invasive hitchhikers.

   Make sure you talk aloud as you inspect; it helps reinforce the Clean Boats, Clean Waters behavior. Talk to boaters about inspecting and cleaning their watercraft and about draining the water from their boat—such as the bilge, bait buckets and live wells—before they leave the access.

   Water is another way invasives can move from lake to lake so it is always a good idea to drain your water. Vegetation can be found on motor boats, the motor/prop, anchors, bunks, rollers, the trailer axle, lights/wiring; for jet skis, it can be found in the intake grate and propeller; and for sailboats, it can be found in the centerboards. Check your anchor and anchor line to see if any plants are clinging to it.

   Some aquatic invasives, such as zebra mussels, are also found on the motor/prop, on the sides and bottom of boat below the waterline, on the anchor, and clinging to vegetation. It is a good idea to drain water from the motor, live well, bait well, bait bucket, bilge, and transom wells. Always inspect the hull and sides of your boat for aquatic invasives; if it feels gritty or sandy, it may be that new zebra mussels are attached.

   An extra precaution that you can take to eliminate other aquatic invasives is to wash your boat with warm tap water or take your boat through a car wash or dry your boat and equipment in the sun for five days before entering another lake.

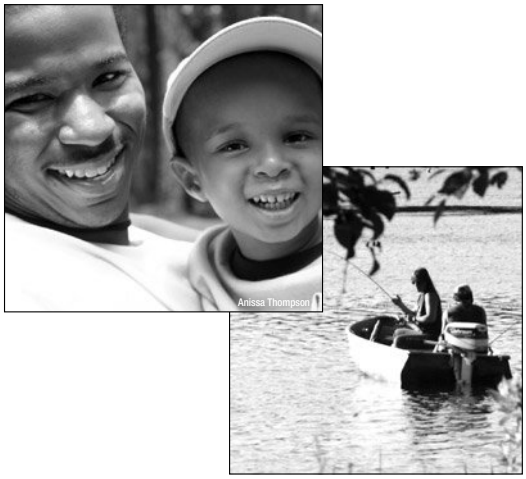
   Leave boaters with a final message: Clean Boats, Clean Waters

Please make it a habit to:

- Inspect and remove any visible mud, plants, fish, or animals before transporting equipment.
- Drain water from your equipment (boat, motor, trailer, live wells) before transporting.
- Dispose of unwanted bait in the trash, not in the water.
- Spray, rinse, or dry equipment to remove or kill invasive species.

Give boaters the Stop Aquatic Hitchhikers™ sticker and help them place it on the handle side of the trailer winch post. Remind boaters to follow the precautions listed on the Stop Aquatic Hitchhikers™ sticker every time they leave a body of water. Also give boaters the Watercraft Checkpoints card.

Thank the boaters for their time and cooperation.



POTENTIAL SCENARIOS AND QUESTIONS

"Why are you out here wasting resources when the plant is going to come anyway?"

Even the most educated people will ask this question. Just be prepared mentally for such viewpoints and think about why you are out there and what you will say in reply. Expect the unexpected. Here are some suggested responses:

Even if we cannot keep the plants out completely, we can prevent a lot of widespread damage. Prevention also gives us time to adopt new control methods as they are developed in the future. The longer we keep invasives out of a lake, the longer we put off the enormous costs of management and property devaluation.

If lakefront property owners are investing tens of thousands of dollars or more for control, boater education can help keep invasive plants and animals from being re-introduced into the lake.

"Aren't all plants bad anyway?"

It is important to clear up this misconception! This is what you can say:

Native plants are essential lifelines for an aquatic ecosystem, providing the basis for all life within it. The problem lies with invasive (non-native) plants that have no natural inhibitors and therefore out-compete native plants, lowering the water body's aquatic diversity.

"I don't have time for this... I know all about it already!"

This remark is fairly common. If boaters do not wish to help you with the survey, you must respect their rights and let them be. In such a situation, the suggested action would be to offer them a sticker and checkpoint card and wish them a nice day.

"Why did it take Michigan so long to do something about invasive species?"

There is no good answer to this question because it's a very good point. Here is how you can respond:

In the past, environmental problems have often become established and have sometimes reached a crisis before we did anything about them. In this case, we have learned from other states and are trying to take action before these species spread to more of our sensitive environments. Instead of focusing on what could have been done, we are trying to focus energies on the present and future. We have also become aware of species such as Hydrilla that could invade Michigan waterways and be very damaging to the ecology and economy of our state. We're trying to prevent their introduction and avoid those costs.

OH NO, YOU FOUND SOMETHING!

Aquatic invasive species can hide in the most mysterious places, and even the most diligent volunteer may not detect a hitchhiker. Catching the invasive on a watercraft before it enters a lake is the most effective means of preventing an explosion of the troublesome species. The following information provides you with specific instructions on how to collect a sample from a watercraft during the inspection process.

Submitting a sample from a watercraft inspection:

If you think you have found an invasive species on a watercraft, request a sample from the owner and follow the procedures. Ask the boater which body of water the boat was on last, and record that information on the Watercraft Information Report. Recommend that the boater take the boat to a car wash and have the watercraft washed down before it is launched.

Take a sample if:

- You think you have found an invasive species from a body of water that is not currently listed as infested.
- You think you have found an invasive species on a boat entering a body of water not known to be infested with that species.

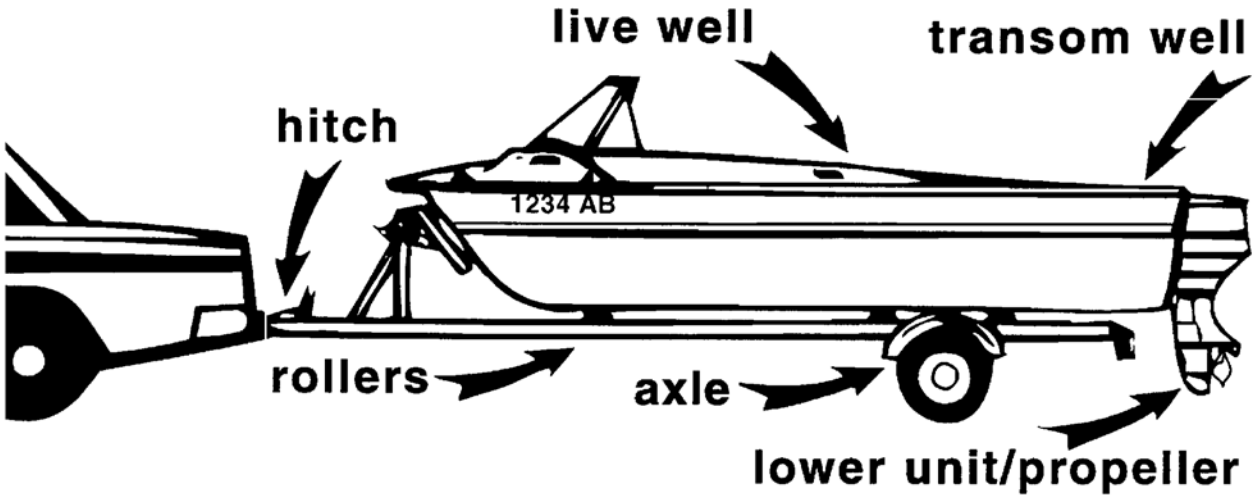
Steps to follow:

- Put the sample in a plastic bag and keep it in a cool place (a cooler in your car or refrigerator at home). Send the specimen to the local Sea Grant office for identification. See Section 2 of this handbook for locations and phone numbers.
- Use a permanent marker and record the following information on the plastic bag:
  a. Date
  b. Body of water
  c. Description of where the sample was found—on a boat, brought in by an angler caught on fishing line, etc. Be sure to provide the specific location on the lake where the specimen was found to assist in any follow-up work effort.

Remember if you find "something," don't give up; there are a variety of control and management options to address invasive species on your lake. Early detection is the key to controlling the situation!

CLEAN BOATS CLEAN WATERS

WATERCRAFT CHECK POINTS



- ☐ Anchor
- ☐ Axle
- ☐ Bait bucket
- ☐ Bunks
- ☐ Bow line
- ☐ Fishing line
- ☐ Floor
- ☐ Hull
- ☐ Intake pipe
- ☐ Ladder
- ☐ Landing net
- ☐ License plate
- ☐ Motor
- ☐ Wheels
- ☐ Live well
- ☐ Lights/wiring
- ☐ Rollers
- ☐ Prop
- ☐ Spare tire
- ☐ Tackle
- ☐ Tow rope
- ☐ Trailer
- ☐ Transducer
- ☐ Transom well
- ☐ Trolling motor

CLEAN BOATS
CLEAN **WATERS**

Section 6:
How can volunteers share their information?

KEEPING RECORDS

Volunteer watercraft education teams may wonder why it's important to keep track of the boaters who visit boat landings. Some teams may feel that their presence is all that is needed to assist boaters in checking their recreational equipment for invasive species.

The Clean Boats, Clean Waters program strongly encourages teams to use the reporting form in this section to record the following information:

- what state the visiting vehicle is from,
- what type of recreational watercraft is being used,
- what body of water the boat was on last and when,
- whether the boater has taken prevention steps,
- whether the boater allows inspection,
- whether plants or animals are on the boat entering or leaving the water body,
- whether the boater has prior knowledge of invasive species,
- whether the boater accepts informational material, and
- how many people listened to the message.

This information will be entered into a statewide database.

What are the advantages of keeping records about volunteer watercraft inspection education programs?

1. With limited state resources, it makes sense for each volunteer team to track its own data.
2. Collecting data helps the team discover traveling patterns of boaters who visit the lake.
3. The data could also be useful for local ordinance reviews that pertain to the boat landing or water body use.
4. Most importantly, by recording and sharing consistent information, the program can gain valuable insight about the public's knowledge of invasive species and the traveling patterns of aquatic invasives. In this way, volunteer teams assist lake managers with invasive species prevention and control and quantify the impacts that volunteers are having on invasive species. Having this information helps justify the continued need to support invasive species programs.

See: Watercraft Information Report Form on next page

Working with the Watercraft Information Report Form

The report form is fairly straightforward, but here are a few guidelines to assist you in collecting and recording the correct information.

- In the "Prevent" column, check whether or not the boater says they have taken preventive actions, such as power washing or drying the boat.
- In the "Inspect" column, check whether or not the boater allows you to inspect the watercraft.
- In the "AIS" section, check "W" if the boat or trailer has weeds hanging off it as the boaters are coming in or going out. Also note whether invasive animals are present and check "A" if they are. Record this information before you ask them to remove plants or animals. This information will help show whether boaters are removing vegetation before coming to new waters.
- The "Prior Knowledge" section allows you to indicate where boaters previously obtained information about aquatic invasives (if they have never heard about them, you don't have to check anything). If boaters have a Stop Aquatic Hitchhikers™ decal, you might want to ask them where they got it.
- Use the "Materials" column to check whether or not you gave informational/educational materials to the boater/user.
- The "Number of People Contacted" entry does not necessarily equal the number of people on the boat. Count only the people who actually listened to you. Also, you can use this section if you talk to people at the landing, anglers for example, who aren't boating. You won't have boat information from them, but you can still count them as contacts.

It's important to have one person collect and keep all of your team's reports for the season. By September 15, send all of the reports to the Clean Boats, Clean Waters coordinator:

Clean Boats, Clean Waters
c/o Michigan Sea Grant
334 Natural Resources Building
Michigan State University
East Lansing, MI 48824-1222

Best of luck in your watercraft inspection education program, and remember to make sure boaters know that they can make a difference!

Sharing Information and Networking Opportunities

Everyone who attends a Clean Boats, Clean Waters training workshop is entered into a volunteer database. Each participant's name, address, and contact information is collected during the workshop and used to facilitate future communication from program leaders to participants and among participants. Contact information provided will only be used for this program and will not be otherwise distributed.

CLEAN BOATS CLEAN WATERS

Clean Boats, Clean Waters

Watercraft Information Report

Notice: Information requested on this form will be used to track and evaluate public awareness and education efforts for watercraft inspection. Personal information, including names of staff or volunteers, is not intended to be used for other purposes but may be made available to requesters.

PLEASE PRINT

Team Name: Volunteer Name: (Last) (First)

Waterbody Name: Landing Location: (County) (Twp., City, Village)

Date	State		Watercraft Information									Boater Information														
										Last Used		Prevent		Inspect		AIS		Prior Knowledge						Mat'ls		Contacts
Time	MI	Other	PWC	Pontoon	Fishing	Pleasure	Sailboat	Kayak/ Canoe	Other	Date	Location	Y	N	Y	N	A	W	PSA	News	Display	Pub	Sign	Other	Y	N	
am																										
pm																										
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Comments, Notes:

Questions Boaters Ask: (use back of this page)

Questions: (517) 353-9723

CLEAN BOATS
CLEAN WATERS

Section 7:
How can volunteers take care of boat landings?

BOAT LANDING INVENTORY

The Clean Boats, Clean Waters program offers an excellent opportunity for volunteers to help care for boating access sites. Among the contributions volunteers can make are:

- inventory the site;
- report to the owner on its status;
- post a sign about invasive species;
- display information about invasive species;
- report to the CBCW program on site usage.

Use the information in this section to guide you in those activities.

Conduct an inventory of information about the landing(s) you plan to use. PLEASE PRINT

Water Body Name: _____

Boat Landing Location (Road, Street, Drive): _____

_____

County: _____

Township, City, Village: _____

Boat Landing Owner: _____

Ramp Type:

__ Concrete Slab
__ Concrete Plank
__ Other _____
__ Asphalt
__ Gravel
__ Dirt

Parking Lot Type:

__ Concrete
__ Asphalt
__ Gravel
__ Dirt
__ Other

Number of Parking Spaces: ____ Disability Spaces: _____

Type of Information Display:

__ Kiosk
__ Information Center (glass-enclosed)
__ Other
__ None

Place to leave brochures? ___ Yes ___ No

Is an Aquatic Invasive Species sign posted and visible from the landing?

__ Green and white
__ Yellow and black
__ Other

Sign's distance from the landing: _____
Overall facility condition: _____

After you have inventoried the site, decide which efforts are most needed at that location, and discuss them with the landing's owner. You should always get permission before making any changes at the landing site.

How can we share the findings from our inventory?

Contact the landing's owner and ask for some time to explain the Clean Boats, Clean Waters program and get the necessary permission to use the launch site for your team's work. (See the DNR Permit Application at the end of this section.) At that time, you can also discuss your findings and any ideas you have for improvements/changes. Also, please send a copy of the inventory to the Clean Boats, Clean Waters coordinator, along with the results of your discussion with the site's owner.

Boat Landing Ownership and Maintenance

Whoever owns or operates a boat landing is responsible for its maintenance.

How can I find out who owns the boat landing?

It is important to know who owns the landing and who to contact. Ownership of boat landings can be determined through a variety of methods. Plat maps are one useful source, as are searches at the register of deeds office for the county in which the landing is located. Department of Natural Resources (DNR)–owned and leased boat landings are identified on the DNR Web site – www.mcgi.state.mi.us/MRBIS/findlocation.asp

How are state, county, village, or city parks regulated?

State-owned parks with boat landings are regulated under Public Act 451 of 1994. County, village, and cities that own parks with boat landings usually operate such parks and boat landings under local ordinances or have agreements with the State of Michigan for operational standards (such as Grant-in-Aid or Michigan Natural Resources Trust Fund).

Boat Landing Sign

Michigan has developed this sign about invasive species for use at boating access sites. If you find one of these at the site you will be using, make a note of it on your inventory form. If you find another type of sign there, also note that in the appropriate place on the inventory. If the boat landing has no sign about invasive species, you can request one of these signs by contacting the Michigan Office of the Great Lakes at (517) 335-4056.

Displaying and Distributing Information

If the landing has a message board or kiosk, volunteers may be able to display and/or distribute information about invasive species and contact numbers to use if a questionable plant or animal is found. The boat landing may be the first opportunity for volunteers to educate boaters. The Clean Boats, Clean Waters team cannot be there for every boater, but it can often offer educational information at any time.

Launch Regulations

The Michigan Department of Natural Resources encourages free boat launching as part of its responsibility for public access to the state's waters. However, a reasonable launch fee may be charged under authority of Public Act 451 of 1994 for the purpose of operating and maintaining a boat access site owned or operated by DNR and other access providers. Excessive, unjustified, or unreasonable boat launching fees restrict or prohibit public boating access and use of navigable waters in the state.

What is the public trust doctrine?

The Michigan Constitution establishes a state-administered public trust for navigable waters of the state. Under the public trust doctrine, the state holds the water of navigable bodies of water in trust for all its citizens and has an obligation to protect public rights in navigable waters.

What is the relationship of the public trust doctrine to local regulations?

The public trust doctrine plays a substantial role in any decision relating to the public's access to and use of public waterways. The doctrine provides that the government holds all navigable waters in trust for the benefit of, and unrestricted use by, the public as a whole. This doctrine essentially creates a property right for the public as a whole in the waterways within a state. Access and use of waters may be restricted only under the police powers of the state for the protection and conservation of the public health, safety, and welfare, including environmental conservation and recreational purposes. Any regulation of the use of waterways must be reasonable in respect to the public interest being protected.

Local government units may not enact any ordinance or regulation that in any manner excludes any boat from the free use of the waters of this state or that pertains to the use, operation, or equipment of boats or that governs any activity regulated by the Michigan Waterways Commission.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

USE PERMIT

Issued under authority of Act 451, P.A. 1994 as amended. Subject to the provisions of the law and the conditions herein contained, permission is hereby granted to the person named to use State-owned land described for the purpose indicated.

ISSUING UNIT		PERMIT NUMBER
PARKS AND RECRATION BUREAU		04-01
PERMIT ISSUED	PERMIT EXPIRES	BUILDING INVENTORY NUMBER
6/1/2004		

NAME OF PERMITTEE	PERMITTEE'S TELEPHONE NUMBER	PERMITTEE'S S.S. / FEDERAL I.D. NUMBER
NAME OF VOLUNTEER GROUP	231 000 0000	

STREET ADDRESS	APPLICATION/REVIEW FEE	TOTAL CHARGES FOR LAND USE	PERFORMANCE BOND AMOUNT
P.O. BOX OR STREET ADDRESS	$	$	$

CITY	STATE	ZIP CODE	PAY IN INSTALLMENTS OF
CITY	MI	48999	$ per beginning

DESCRIPTION OF STATE OWNED LAND

Clam Lake BAS (north side), Lake Bellaire BAS (east Side); Torch Lake BAS at Eastport (north side)

AUTHORIZED LAND USE

Provide boat washing and public education regarding aquatic nuisance species at three DNR-owned boating access sites (BAS).

SPECIAL CONDITIONS AND/OR PENALTIES NOT CITED BELOW

1. Permittee is shall not impede public use of the ramp nor interfere with public use in any way.
2. Permittee will insure that wash water does not enter the lake.
3. Permittee understands that public participation is strictly voluntary and permittee will not "pressure" boaters to participate in the program.
4. Permittee will vacate the BAS is and when space is needed for recreational boater use and parking.
5. Violation of any conditions is cause of the revocation of this permit.

DEPARTMENT REPRESENTATIVE TO CONTACT RELATIVE TO OPERATIONS UNDER THIS PERMIT (*PAY ANY INSTALLMENTS AT THIS ADDRESS)*

NAME OF REPRESENTATIVE	DEPARTMENT LOCATION/OFFICE	TELEPHONE NUMBER
Harold Herta, PRD Resource Mgt. Section	Mason Building, Lansing	517 335 5695

STREET ADDRESS	CITY	STATE	ZIP CODE
P.O. Box 30257	LANSING	MI	48909 7757

THIS PERMIT IS SUBJECT TO THE FOLLOWING CONDITIONS AND REQUIREMENTS:

Hereinafter the Department of Natural Resources shall be referred to as Department.

1. Unless sooner terminated, this permit shall expire on the date indicated above.
2. Payment in the amount specified above shall be made prior to use of land indicated above or in installments as indicated above.
3. Permittee shall maintain the area under permit in a clean and sightly condition.
4. Requests for permit renewals should be made to the Department Representative 30 days prior to the expiration date of this permit. Such requests will be considered only when all stipulations in the original permit have been complied with.
5. The rights accruing under this permit shall not be assigned or transferred without the written consent of the Department Representative.
6. Permittee shall not commit, cause, or allow to be committed any waste of, or injury to, said premises or any part thereof, nor use the same except for the purpose indicated.
7. Temporary improvements necessary for the efficient utilization of the said premises may be made as indicated.
8. Improvements made by the permittee on said premises and not removed within 30 days after cancellation or expiration of this permit, and when such removal shall be requested by the Department Representative shall become attached and remain a part of the premises.
9. The Department reserves the right:
   a.) to dispose of any portion of the premises herein described during the term of this permit. If possible, proper notice of sale or disposition will be given permittee. However, failure to notify permittee will not affect this right.
   b.) to lease said premises for exploration and production of any or all minerals, including coal, gas, oil, sand, gravel, etc.
   c.) to grant rights-of-way and easements of any kind and nature over and across said premises, and to grant or exercise all other rights and privileges of every kind and nature not herein specifically granted.
10. LIABILITY. Grantee hereby releases, waives, discharges and covenants not to sue the State of Michigan, its departments, officers, employees and agents, from any and all liability to Grantee, its officers, employees and agents, for all losses, injury, death or damage, and any claims or demands thereto, on account of injury to person or property, or resulting in death of Grantee, its officers, employees or agents, in reference to the activities authorized by this permit.
11. INDEMNIFICATION. Grantee hereby covenants and agrees to indemnify and save harmless, the State of Michigan, its departments, officers, employees and agents, from any and all claims and demands, for all loss, injury, death or damage, that any person or entity may have or make, in any manner, arising out of any occurrence related to (1) issuance of this permit; (2) the activities authorized by this permit; and (3) the use or occupancy of the premises which are the subject of this permit by the Grantee, its employees, contractors, or its authorized representatives.
12. Permittee and occupants are responsible for the payment of all utility bills including water, electricity, gas, etc.
13. Permittee agrees to comply with all requirements herein, and, if for any reason permittee violates or neglects to fulfill such requirements, this permit shall terminate and permittee shall forfeit all rights and payments made hereunder. Should permittee remain in possession of said premises after cancellation or expiration of this permit, said permittee shall be considered as tenant or tenants holding over without permission and may be evicted from said premises.

I have read the terms and conditions contained in this permit. I agree to abide by same, and assume all the obligations contained herein.		Approved By	
Permittee's Signature	Date	Department Representative's Signature	Date

DISTRIBUTION: *Permittee & Lansing Office - 1 Signed Original Each*
Unit Manager, District, Field Hdqtrs. - 1 Signed Photocopy Each

PR 1138E (Rev. 11/03/2004)

CLEAN BOATS
CLEAN WATERS

Section 8:
Where can volunteers get more information and materials?

AQUATIC INVASIVE SPECIES WEB SITE LINKS

Aquatic Nuisance Species Task Force (ANSTF)
www.anstaskforce.gov

Aquatic Plant Management Society (APMS)
www.apms.org

Center for Aquatic Plants, University of Florida
http://aquat1.ifas.ufl.edu

Cornell University Department of Natural Resources: Biological Control of Non Indigenous Plant Species
www.invasiveplants.net

EPA Office of Water
www.epa.gov/water

Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW)
www.fws.gov/ficmnew

Great Lakes Indian Fish and Wildlife Commission's (GLIFWC) Exotic Plant Information Center
www.glifwc.org/invasives

Great Lakes Information Network (GLIN)
www.great-lakes.net

Invasive Plant Association of Wisconsin
www.ipaw.org

Listed Noxious Weeds and Invasive Non-Native plants - Eastern Region, USDA-Forest Service
www.fs.fed.us/r9/wildlife/range/weed/index.php

Maine Department of Environmental Protection Invasive Aquatic Species Program
www.state.me.us/dep/blwq/topic/invasives

Michigan Department of Environmental Quality
www.michigan.gov/deqaquaticinvasives

Michigan Department of Natural Resources
www.michigan.gov/dnr/0,1607,7-153-10364_18958-54177--,00.html

Michigan Invasive Plant Council
http://forestry.msu.edu/mipc

Michigan Sea Grant
www.miseagrant.umich.edu/ais

Minnesota Department of Natural Resources
www.dnr.state.mn.us/invasives

Minnesota Sea Grant
www.seagrant.umn.edu/exotics

National Sea Grant Network Exotic Species Graphics Library
www.sgnis.org/publicat/slide/catalog1.htm

North American Lake Management Society (NALMS)
www.nalms.org

Natural Resources Conservation Service, USDA
www.plants.usda.gov

Plant Conservation Alliance's Alien Plant Working Group
www.nps.gov/plants/alien

PLANTS Database Natural Resources Conservation Service, USDA
www.plants.usda.gov

Purple Loosestrife Project-Michigan State University
www.miseagrant.umich.edu/pp

Swimmer's itch
http://dnr.wi.gov/org/water/fhp/lakes/swimitch.htm

USDA National Invasive Species Information Center, Aquatic Species
www.invasivespeciesinfo.gov/aquatics/main.shtml

USGS Water Resources
http://water.usgs.gov

Washington State Department of Ecology
www.ecy.wa.gov/programs/eap/lakes/aquaticplants

WDNR Invasive Species
http://dnr.wi.gov/invasives

Wisconsin Sea Grant
www.seagrant.wisc.edu

Wildland Invasive Species Team
http://tncweeds.ucdavis.edu/esadocs.html

Wisconsin State Herbarium
www.botany.wisc.edu/herbarium

AQUATIC INVASIVE SPECIES PUBLICATIONS

When pdf files are indicated, feel free to download and print your own copy of the publications.

General Publications

Pub #	Title
MICHU 05-715	Clean Boats, Clean Waters AIS Volunteer Program (brochure)
MICHU 05-407	Great Lakes Unwanted Aquatic Invasive Species – Poster Series Presents key facts about aquatic invasive species in the Great Lakes. Colorful illustrations, photos and graphics help people understand why invasive species are a problem and what can be done. Individual 12" x 18" posters portray ruffe, goby, waterfleas, zebra mussel, sea lamprey, purple loosestrife and Eurasian water-milfoil, while a 24" x 31" poster presents all seven species.

Watch Cards

Sea Grant ID cards that include "What you can do" steps and contact information to report new sightings.

MICHU-98-500	Zebra Mussel Watch
MICHU-98-500	Ruffe Watch
MICHU-98-505	Round Goby Watch
MICHU-98-507	Purple Loosestrife Watch
MICHU-02-500	Eurasian Water-milfoil Watch
MICHU-04-500	Rusty Crayfish Watch
MICHU-03-501	Spiny and Fishhook Waterflea Watch
MICHU-03-500	European Frogbit Watch
MICHU-03-502	Bighead and Silver Carp Watch
MICHU-04-501	Hydrilla Hunt

You can order these cards from Michigan Sea Grant's bookstore at www.miseagrant.com

OTHER PUBLICATIONS

Many of the following publications are available from Web sites; links are provided below.

General Aquatic Invasive Species Information

Ballast Water Management: Preventing and Controlling the Spread of Aquatic Nuisance Species
www.uscg.mil/d1/units/msoprov/archive/bwm%20brochure.html

Stop Ballast Water Invasions
www.iisgcp.org/products/iisg0201.pdf

Aquatic Invasive Plants

The Facts on Eurasian Water-milfoil (fact sheet)

Heading Off Hydrilla
www.miseagrant.umich.edu/downloads/ais/hydrillafactsheet.pdf

Zebra Mussels

Zebra Mussels in North America: The Invasion and Its Implications
www.sgnis.org/publicat/snyder.htm

Boaters: Take Action against Zebra Mussels
www.seagrant.umn.edu/exotics/ZMBoaters.pdf

Zebra Mussels: Questions and Answers for Inland Lake Managers
www.iisgcp.org/products/iisg0120.pdf

Other Invasive Aquatic Animals

Round Gobies Invade North America
www.iisgcp.org/products/marsjude.pdf

Ruffe: A New Threat to Our Fisheries
www.seagrant.umn.edu/exotics/ruffe.html

Rusty Crayfish: A Nasty Invader
http://sgnis.org/publicat/gund1999.htm

Spiny Water Flea, *Bythotrephes cederstroemi:* Another Unwelcome Newcomer to the Great Lakes
www.sgnis.org/publicat/bergdj92.htm

Daphnia lumholtzi: The Next Great Lakes Exotic?
www.iisgcp.org/products/iisg9910.pdf