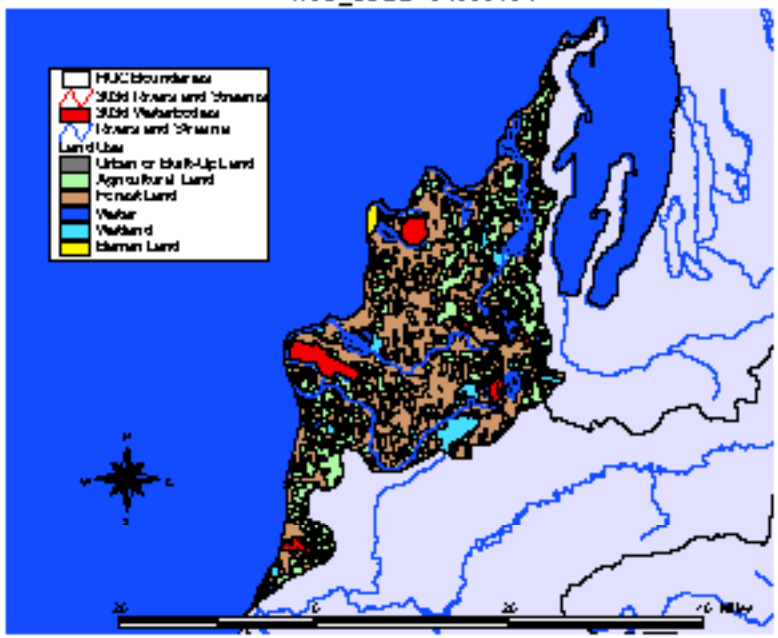
Betsie-Platte Watershed

Hydrologic Unit Code: 04060104

For more information, see the US EPA "Surf Your Watershed" website at http://cfpub.epa.gov/surf/huc.cfm?huc_code=04060104



Approved Watershed Management Plans

- Bear Creek (Benzie Co.) - Conservation Resource Alliance
- Betsie River - Conservation Resource Alliance
- Glen Lake/Crystal River - Glen Lake Association
- Lake Leelanau - Conservation Resource Alliance
- Platte River - Benzie Conservation District

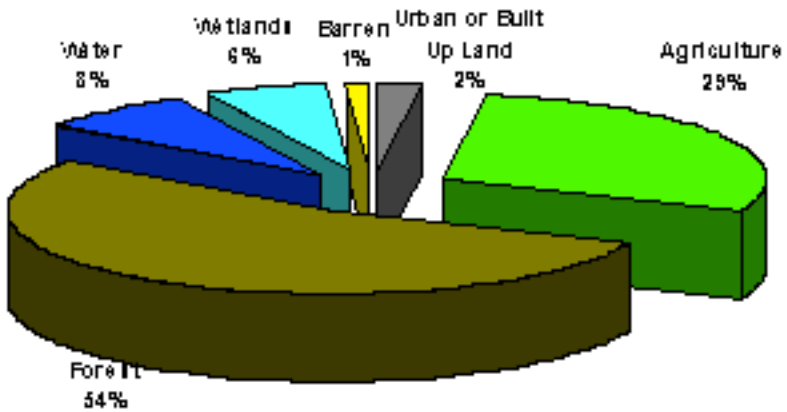
Watershed Groups

- Conservation Resource Alliance: www.rivercare.org
- The Leelanau Conservancy: http://www.theconservancy.com/
- Glen Lake Association
- Green Lake-Betsie River Association
- Grand Traverse Regional Land Conservancy http://www.gtrlc.org/
- Crystal Lake Watershed Fund: http://www.clwf.org/
- Benzie Conservation District: http://www.benziecd.org/

Watershed Overview / Ecology / Biodiversity

- The Betsie-Platte watershed, part of the Grand Traverse Bay area in northern Lake Michigan, covers 811.04 square miles with a shoreline that extends 87.96 miles. 193 miles of streams and rivers in the watershed flow year round.
- Inland lakes make up 62.62 square miles of the watershed.
- The counties in the watershed have a population of over 144,000.
- The watershed saw significant logging activities in the late 1800s and early 1900s.
- Attempts at farming the cut over land proved largely unsuccessful due to meager soils. This further limited settlement expansion in the watershed.
- The watershed remained relatively undeveloped during the past century, however, deep sand deposits in the River and creeks are legacies of the impact logging and road building has had. Increasing weed growth in many lakes is further indication of the changes which have occurred since the area was first settled.
- Much of the agricultural land reverted back to State ownership and additional land was acquired in succeeding decades to create the vast State forest and Federal parklands existing today.
- Native plant species in the area range from the extremely drought tolerant species Bearberry (Arctostaphylos uvaursi) and Stiff Coreopsis (Coreopsis palmata) to the wetland species of Blue Flag Iris (Iris veriscolor) and Buttonbush (Cephalanthus occidentalis). More unusual species include the Red Milkweed or Swamp Milkweed (Asclepias incarnata), desired by the Monarch Butterfly as the favorite food source for the larvae.

Land Use - Betsie Platte Watershed



Impaired (303d) Waters

Waterbody	Impairment	Anticipated TMDL Submittal
Bass Lake	Mercury Fish Consumption Advisory	2011
Crystal Lake	PCB Fish Consumption Advisory	2010
Glen Lake	Chlordane	2011
	Mercury	2011
	Mercury Fish Consumption Advisory	2009
Green Lake	Mercury	2011
Lake Ann	Mercury	2011
Portage Lake	Mercury	2011

Watershed Activities / Concerns / Priorities

- The Conservation Resource Alliance was recently awarded grants totaling $474,309 from the State's Clean Michigan Initiative (CMI) and $104,260 from the Michigan Department of Transportation's Enhancement Program to improve water quality and control erosion in the Betsie River Watershed. The Benzie County Road Commission and Betsie River Watershed Restoration Committee is repairing up to 5 eroding road/stream crossings on the Little Betsie and Dair Creek, and finish streambank stabilization at 12 sites on the mainstream up to Homestead Dam.

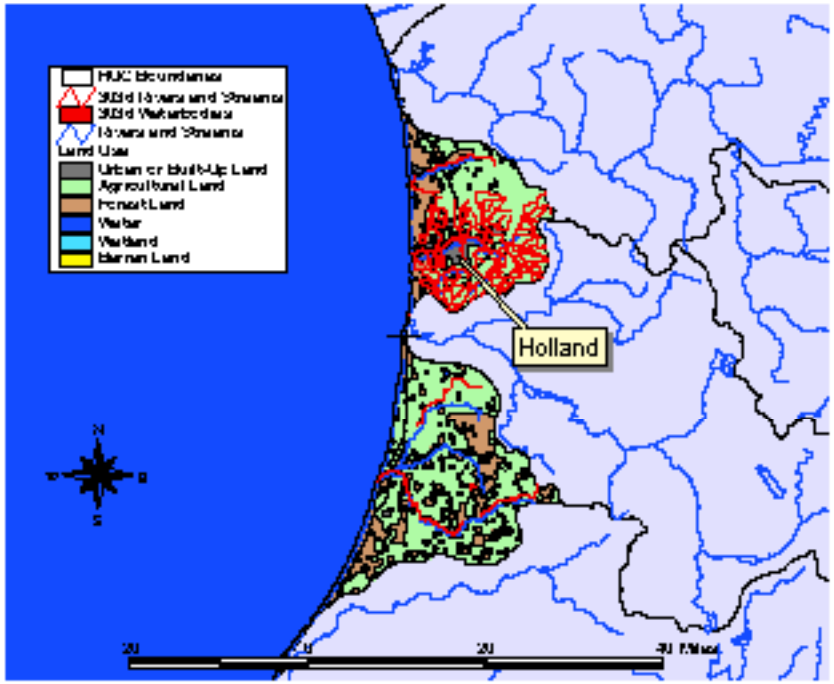
- The Michigan Department of Environmental Quality (DEQ) awarded $723,800 in matching funds to the Leelanau Conservancy as a part of the "Clean Michigan Initiative, Clean Water Fund." Funds provided by CMI must be matched by Conservancy land acquisition dollars to permanently protect wetlands and groundwater recharge areas in the Lake Leelanau watershed. The lake has an extremely important recreational fishery and high water quality. The health of the lake, and in particular the fishery, is dependent on healthy wetlands bordering the lake and its tributary streams. Having some funds to spend on the acquisition of conservation easements will help permanently protect some of the most critical areas.

- Identified Platte River impairments include fertilizers; human and animal waste; oils, toxic chemicals, and salt; sediment; heated runoff; altered stream; pesticides; bacteria; and channel flow.

- The Grand Traverse Band of Ottawa and Chippewa tribe has a water quality protection program for the reservation Leelanau County.

Black Macatawa Watershed

Hydrologic Unit Code: 04050002



Approved Watershed Management Plans

- Pigeon River - Timberland RC&D Council

For more information, see the USEPA "Surf Your Watershed" website at http://cfpub.epa.gov/surf/huc.cfm?huc_code=04050002

Watershed Overview / Ecology / Biodiversity

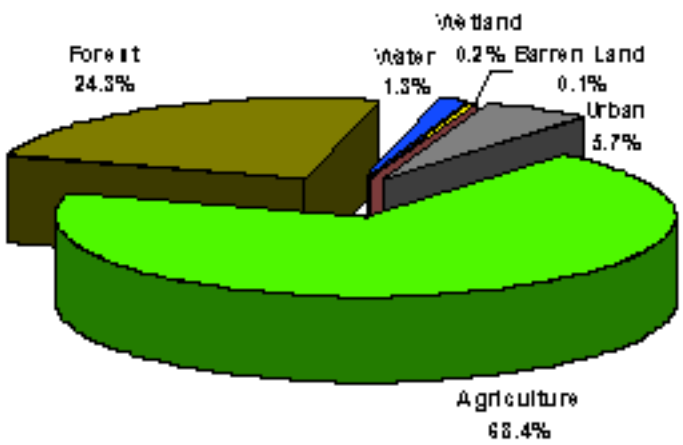
- The Black-Macatawa watershed covers 607.26 square miles
- It has 68.76 miles of Lake Michigan shoreline
- 151 miles of the rivers and streams flow year round.
- The inland lakes cover 4.09 square miles of the watershed.
- The Black-Macatawa watershed has eight listed impaired waters
- Holland and Benton Harbor, Michigan are the two urban areas in the watershed.
- The watershed includes 2 urban areas, Benton Harbor and Holland, Michigan.
- The counties located in the watershed have a population of over 594,000.
- 96 of the 151 miles of impaired waterways (or 64%) have been assessed
- Two and a half million visitors visit Holland, Michigan each year
- Saugatuck Dunes State Park offers 14 miles of hiking and cross-country ski trails. The park's 900-acre natural area contains a coastal dune system, as well as three endangered plant species and beautiful Lake Michigan waterfront.
- Ottawa County is rated as Michigan's most diverse agricultural county. Products grown include apples, asparagus, strawberries, cherries, annuals, perennials, pumpkins, squash, among others.
- TMDLs for phosphorus caused by algal blooms and nutrients in Lake Macatawa were approved in 2000.

Watershed Activities / Concerns / Priorities

- The Lake Macatawa Watershed includes all the land that drains to Lake Macatawa. Laketown, Filmore, Overisel, Holland, Park, Zeeland, Port Sheldon, Olive and Blendon Townships all have some land in the Macatawa Watershed, as well as the cities of Holland and Zeeland. Each year thousands of pounds of phosphorus are carried from this Watershed into Lake Macatawa when it rains. Too much phosphorus causes overgrowth in aquatic plants and algae blooms, which can lead to depleted oxygen in the water, fish kills, and overall poor water quality. The Macatawa Watershed Project goal is to reduce the amount of phosphorus that enters Lake Macatawa by rain runoff by 70% by 2009. The Watershed Project works with local units of government, farmers, homeowners, developers, educators, and other members of the community to increase awareness of how we all impact the watershed, and what we can do to help reduce phosphorus.

- The cities of Holland and Zeeland, and the Townships of Holland, Zeeland, Filmore, Laketown, and Park are included in this Lake Macatawa Phosphorus Reduction Loading Agreement.

Land Use - Black-Macatawa Watershed

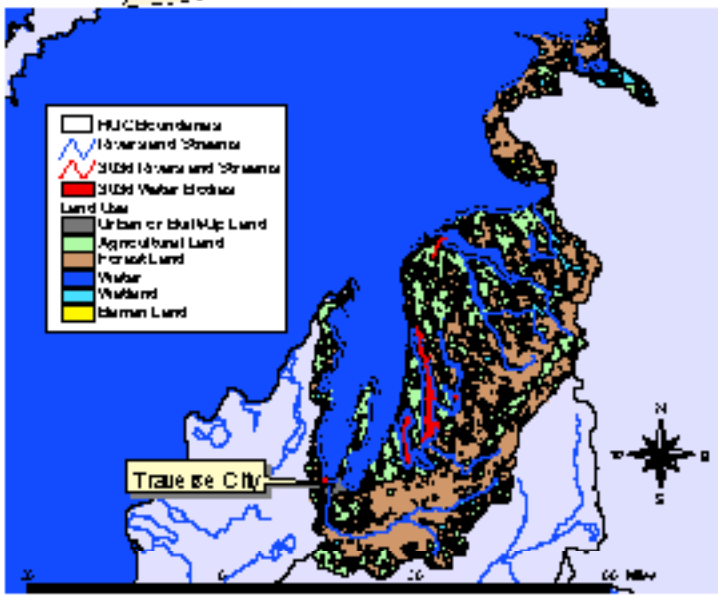


Impaired (303d) Waters

Waterbody	State Impairment	Anticipated TMDL Submittal
Black River (Main), S. Br. Black River	Chlordane	2000
	PCB Fish Consumption Advisory	2000
Black River Drain, N. Branch	Nutrients	2006
	Nuisance plant growths	2006
Haven-Max Lk. Dr./ Gr. Bear Lk./ Gr. Bear Lk. Dr.#'	Nutrients	2004
	Algae	2004
Pigeon River	Nutrients	2007
	Algae	2007
	Fish community rated poor	2007
	Macroinvertebrate community poor	2007
Pine Creek	Pathogens	2007
	Macroinvertebrate community poor	2007
Silver Lake Inlet	Macroinvertebrate community poor	2008
	Simazine	2008
Lake Macatawa Watershed	Chlordane	2009
	PCB Fish Consumption Advisory	2009
Ten Hagen Creek	Fish community rated poor	2006
	Macroinvertebrate community poor	2006

Boardman-Charlevoix Watershed

Hydrologic Unit Code: 04060105



Approved Watershed Management Plans

- Boardman River - Grand Traverse Conservation District
- Elk River Chain of Lakes - Antrim Conservation District
- Long Lake - Grand Traverse Drain Commission
- Mitchell Creek - Grand Traverse Drain Commission

Watershed Plans Under Development or Pending Approval

- Lake Charlevoix, Charlevoix Conservation District and Tip of the Mitt Watershed Council
- Elk River Chain of Lakes Watershed - Antrim Conservation District, Tip of the Mitt Watershed Council, Conservation Resource Alliance
- Little Traverse Bay - Tip of the Mitt Watershed Council, Ann Baughman
- Grand Traverse Bay (pending approval), Watershed Center Grand Traverse Bay

Watershed Overview / Ecology / Biodiversity

- The watershed, which is part of the Grand Traverse Bay area, covers over 1660 square miles.
- The Grand Traverse Bay watershed is one of the premier tourist and outdoor recreation regions in the State of Michigan.
- The watershed has over 217 miles of Lake Michigan shoreline.
- Over 529 miles of streams and rivers flow year-round.
- Traverse City, Michigan is the lone urban area in the watershed.
- Two of the three fastest growing counties in the state, Grand Traverse and Leelanau, are located within the watershed's boundaries.
- Major waterways in the basin include the Elk River, the Boardman River, Lake Charlevoix, Little Traverse Bay, and the Carp River.
- As a trout steam, the Boardman River ranks among Michigan's top 10 streams. It contains excellent populations of brook and brown trout, particularly above Boardman Dam.
- Traditional uses of watershed resources have included agriculture, tourism and recreation. Cherries and other fruit crops dominate agricultural production in the region, and are harvested for the global market.
- The watershed includes species of black bear, deer, great blue heron, lady slippers and trillium.
- The watershed boasts scenic bluffs, forests, nearly a hundred inland lakes, several hundred miles of stream (including 55 miles of blue ribbon trout streams), intact wetland systems and globally rare ecosystems.

For more information, see the US EPA "Surf Your Watershed" website at http://cfpub.epa.gov/surf/huc.cfm?huc_code=04060105

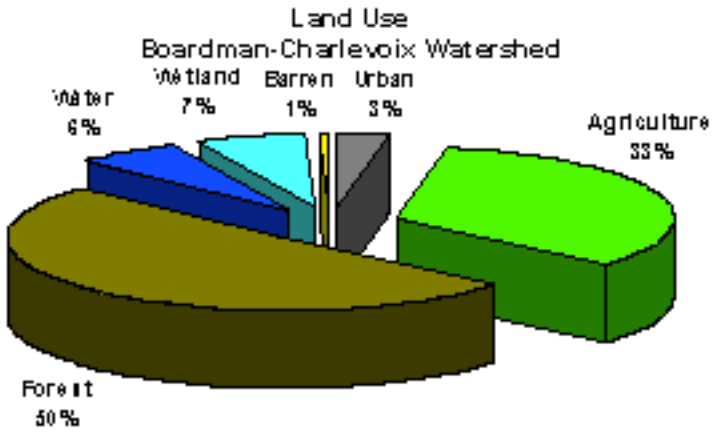
Watershed Activities / Concerns / Priorities

- None of the designated uses for the Grand Traverse Bay watershed are impaired on a watershed wide scale. However, in some cases, activities and resulting pollutants in the watershed may prove to be a threat to water quality and designated uses.

- Identified threats to the Grand Traverse Bay watershed include:
  1. Nutrients (for the Bay and its tributaries)
  2. Sediment for tributaries to the Bay
  3. Invasive species (emerging threat)

- Through the Boardman River Project and the Grand Traverse Conservation District (GTCD), eroded Boardman River banks, road crossings, utility line crossings, and other sources of sediment have been stabilized. These stabilization projects have prevented over 3,000 tons of sediment annually from entering the Boardman. In addition, more than 1,500 acres of land throughout the watershed have been permanently protected as nature reserves or with conservation easements. Many private landowners have also received technical assistance at their riverfront properties.

- Little Traverse Bay Bands of Odawa tribe has a water quality protection program.



Impaired (303d) Waters

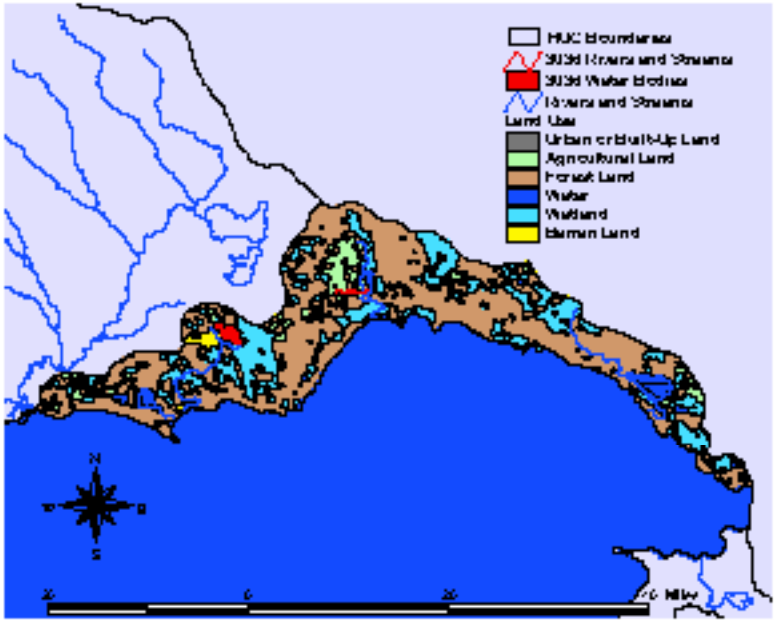
Waterbody Name	Impairment	Anticipated TMDL Submittal
Arbutus Lake	Mercury	2011
Elk Lake	Mercury	2011
	PCB Fish Consumption Advisory	2010
Kids Creek	Macroinvertebrate Community Rated Poor	2010
Lake Bellaire	Mercury	2011
Slover Creek	Macroinvertebrate Community Rated Poor	2008
Torch Lake	Chlordane	2011
	Mercury	2011
	PCB Fish Consumption Advisory	2009

Watershed Organizations

- Grand Traverse Conservation District
- Boardman River Project - www.boardmanriver.org/
- Grand Traverse Conservation District - www.gtcd.org/
- Grand Traverse Drain Commission - www.grandtraverse.org
- Antrim Conservation District - www.antrimcd.org/
- Charlevoix Conservation District -
- www.charlevoixcounty.org/cd.asp
- Tip of the Mitt Watershed Council - www.watershedcouncil.org
- Conservation Resource Alliance - www.rivercare.org
- Watershed Center Grand Traverse Bay - www.gtbay.org

Brevoort-Millecquins Watershed

Hydrologic Unit Code: 04060107

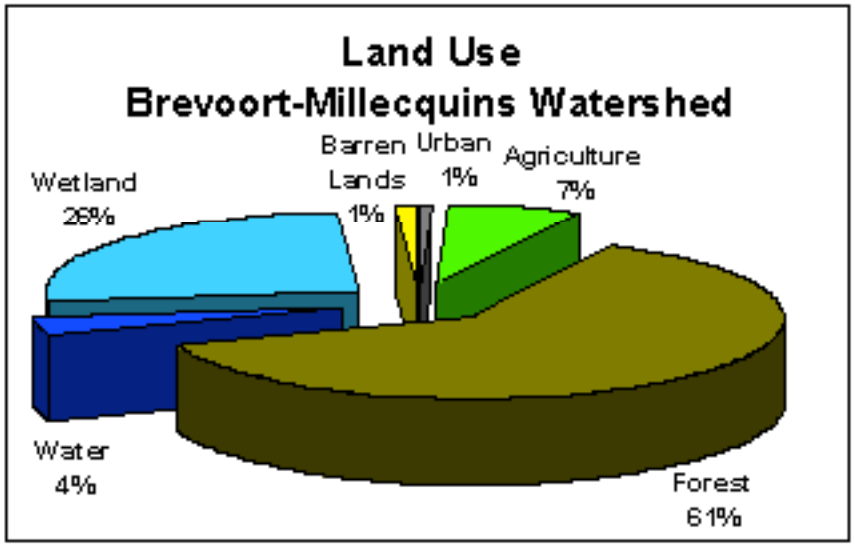


Watershed Overview

- The watershed is located at the southeastern portion of Michigan's Upper Peninsula
- The watershed covers 561.57 square miles.
- The watershed has 102.53 miles of Lake Michigan shoreline
- It has 19 square miles of inland lakes
- It has two listed impaired waters.
- Of the 248 river miles, 206 miles, or 83 percent have been assessed

Impaired (303d) Waters

Water Body	Impairment	Anticipated TMDL Submittal
Furlong Creek	Macroinvertebrate community rated poor	2006
Milakokia Lake	Mercury	2011



For more information, see the USEPA "Surf Your Watershed" website at http://cfpub.epa.gov/surf/huc.cfm?huc_code=04060107

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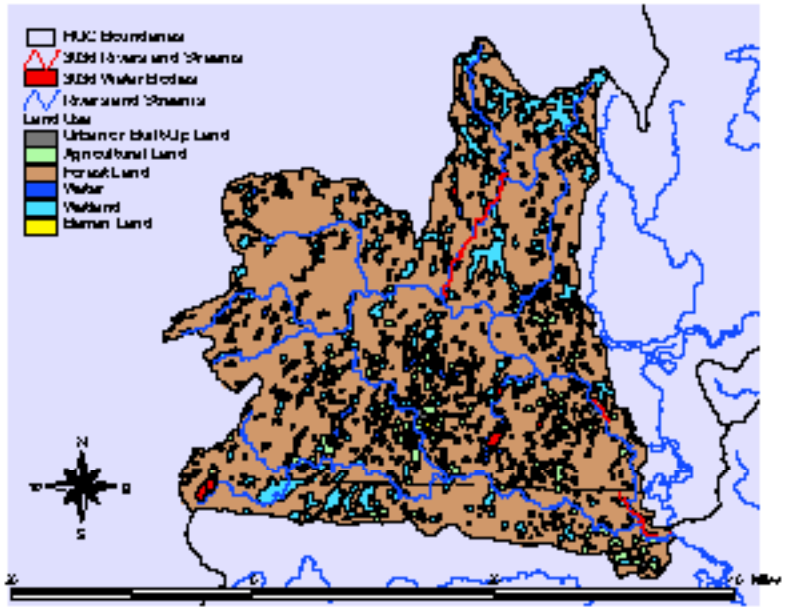
Brule River Watershed

Hydrologic Unit Code: 04030106

For more information, see the US EPA "Surf Your Watershed" website at http://cfpub.epa.gov/surf/huc.cfm?huc_code=04030106



Approved Watershed Management Plans

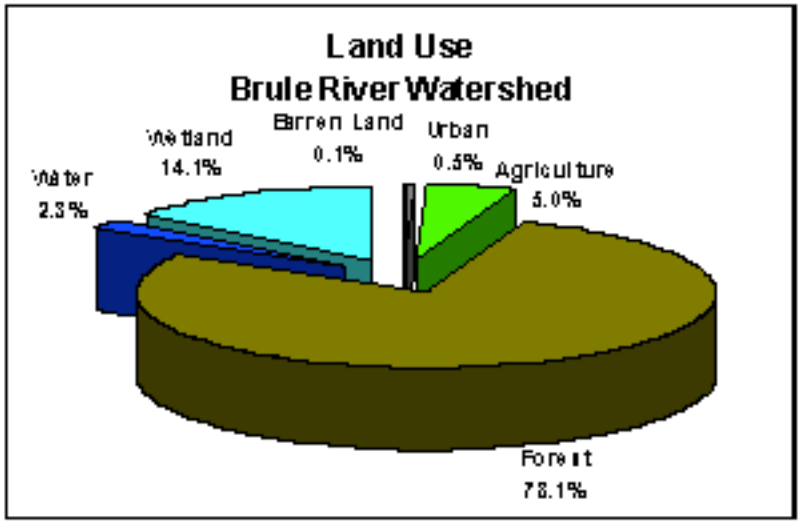
- Iron River Watershed - Iron Conservation District

Watershed Groups

- Iron River Conservation District

Watershed Overview / Ecology / Biodiversity

- The Brule River watershed covers 1057 square miles.
- It does not have any Lake Michigan shoreline and is upstream of the Menominee River watershed.
- The Brule watershed has 9 listed impaired waters.
- The Iron River in the watershed supports a naturally reproducing brook trout populations in the upper peninsula and is the source for brood stock for the Michigan Department of Natural Resources brook trout hatchery program.
- Of the approximately 40 miles of streams that constitute the Iron River watershed, 12 1/2 are classified as blue-ribbon trout water.



Watershed Activities / Concerns / Priorities

- The Iron County Conservation District was awarded a 319 planning grant in 1999 to begin development for a management plan for the Iron River Watershed. With the Watershed Council acting as a steering committee, an inventory of the watershed was conducted, an information and awareness campaign begun, and strategies to address sources of non-point pollution were developed. The initial planning grant resulted in the successful award of two subsequent grants which will fund implementation of activities through 2004.

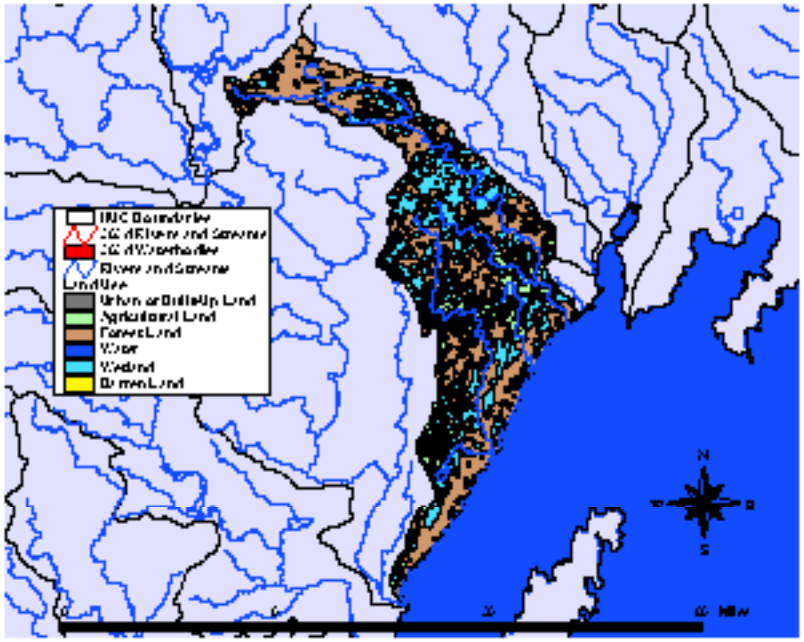
- One of the most damaging influences to the Iron River watershed came from the acid mine drainage from the Dober and Buck mines. In 1995, the Michigan Department of Environmental Quality filed a lawsuit against the Hanna Mining Company which sought retribution for the environmental degradation that occurred as a result of their mining practices. The parties agreed on a settlement in which the Hanna Mining Co. was made to apply remediation tactics to limit acid runoff as well as fined for $318,000.00 dollars in damages. This money was to be administered by the state, but managed by the newly formed watershed council. The award was earmarked specifically for activities to repair, enhance, or protect the Iron River, as well provide for increased public use.

Impaired (303d) Waters

Waterbody Name	Impairment	TMDL Cycle
Cable Lake (MI)	Mercury	2011
Chicagon Lake (MI)	Mercury	2011
Fortune Lake (Second	Mercury	2011
Lake Emily (MI)	Mercury	2011
Net River (MI)	Mercury Fish Consumption Ad-	2011
Ottawa River (MI)	Pesticides PCB Fish Consumption Adviso-	2007
Paint River (MI)	Pathogens	2009
Paint River Pond (MI)	Mercury Fish Consumption Ad-	2011
Kentuck Lake (WI)	Mercury Fish Consumption Ad-visories	None – Low Pri-ority

Cedar Ford Watershed

Hydrologic Unit Code: 04030109



Watershed Groups

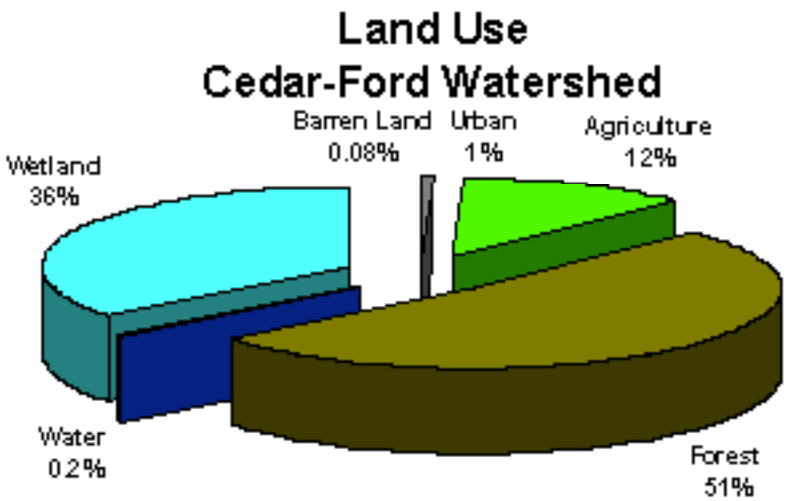
- Friends of the Cedar River
- Central Lake Superior Watershed Partnership - http://www.superiorwatersheds.org/shed.ford.asp

For more information, see the USEPA "Surf Your Watershed" website at http://cfpub.epa.gov/surf/huc.cfm?huc_code=04030109

Watershed Overview / Ecology / Biodiversity

The

- Cedar-Ford watershed covers 1028.1 square miles with almost 53 miles of Lake Michigan shoreline
- There are just over 2 square miles of inland lakes.
- The watershed has no listed impaired waters
- Fishing recreation, skiing, cross country skiing are some of the important basin recreational activities.



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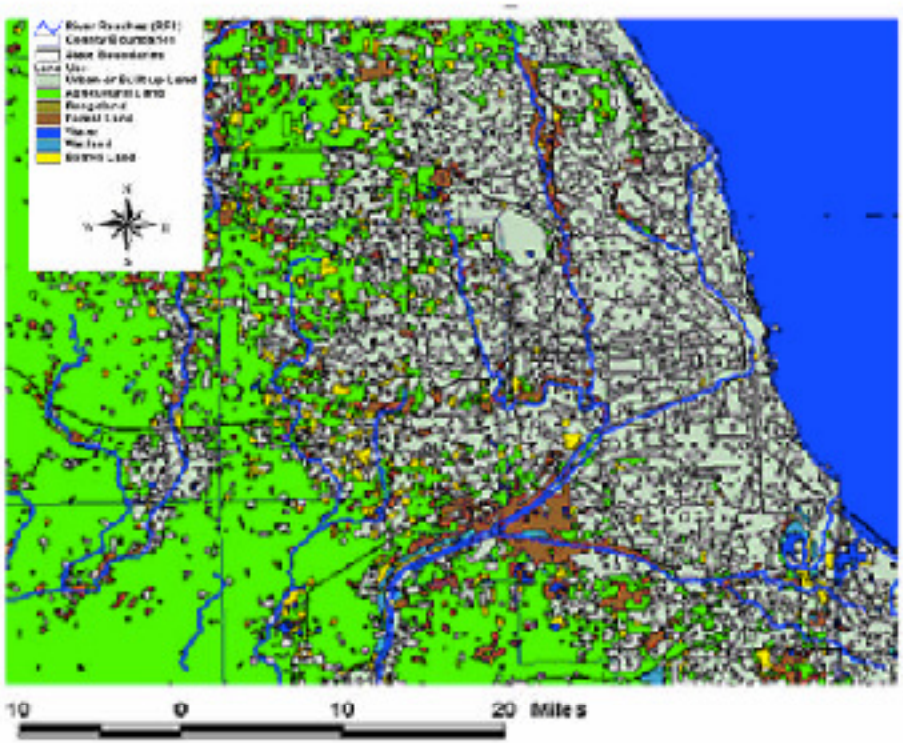
Chicago Waterway System



Water System Overview

- The Chicago River once flowed into Lake Michigan. To facilitate a reversal of the flow of the Chicago River to divert water from Lake Michigan to the CAWS, the Chicago Sanitary and Ship Canal, the Calumet-Sag Channel and the North Shore Channel were constructed over 100 years ago. The diversion and the artificial waterways facilitated navigation and protected the drinking water intakes in Lake Michigan from Chicago wastes. The Little Calumet River North Leg, the Chicago River, the South Branch of the Chicago River and North Branch of the Chicago River downstream from its confluence with the North Shore Channel are natural rivers that have been modified through channelization and widened and deepened.

- The Chicago Area Waterway System (CAWS) includes the Calumet River and Chicago River basin water bodies that are generally classified as Secondary Contact Recreation and Indigenous Aquatic Life. The CAWS also includes Lake Calumet and a variety of tributaries designated as General Use.

- Land use within the CAWS basin is generally urban with extensive industrial development. Basin stakeholders include the City of Chicago and 31 suburban municipalities. Flow in the CAWS is dominated by treated wastewater from 5 million residents and an additional industrial load of approximately 4.5 million population equivalents.

- Chicago's wastewater system was developed with a combined sewer system that accepted both storm water and sanitary waste. After rainstorms, the capacity of the sewer system became overwhelmed on a regular basis and combined sewer overflows (CSO) occurred. These CSOs are discharged into the CAWS and frequently from the river into Lake Michigan. To address this problem, the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) developed the Tunnel and Reservoir project (TARP), which included the construction of the Deep Tunnel project. The Deep Tunnel is a series of tunnels that lie 250 to 300 feet below the Chicago River and are located parallel to it. The first phase of the TARP project or "Deep Tunnel" project has been completed. During periods of heavy rainfall, the TARP project directs combined sanitary waste and infiltrating rainwater into massive tunnels and collection reservoirs where it can be withdrawn for treatment after the rain subsides.

- A comprehensive multi-year evaluation of current conditions in the Chicago Waterway System, and its potential for expanded uses, has been launched by the Illinois EPA. This evaluation, also called a Use Attainability Analysis (UAA), will be the first in-depth look at the system in nearly three decades. In mid-February, the Illinois Environmental Protection Agency announced plans for the project that involves the Chicago River, its two main branches (North Branch and South Branch), the Cal-Sag Channel, the Chicago Sanitary and Ship Canal, and tributaries in an area extending from the metropolitan Chicago area to the Lockport vicinity. The Chicago Waterway System makes up the surface drainage network serving the majority of the Greater Chicago metropolitan area. The system receives discharge from three of the largest municipal wastewater treatment plants in the nation as well as releases from more than 100 individual combined sewer outfalls.

- Since passage of the Clean Water Act in 1972, there have been major upgrades of treatment facilities along the Chicago Waterway. Under IEPA oversight, extensive pretreatment programs have begun, as well as treatment of industrial wastes before discharge. The first phase of the Tunnel and Reservoir (TARP) project or "Deep Tunnel" project has been completed.

- Recreational boating and other sports are on the rise within the system and improved fish populations and species diversity now support a modest recreational fishing use. These benefits indicate that the current use classification is outdated, making the planned study a

timely undertaking. Jointly, these efforts have significantly improved conditions and public interest in the waterway, resulting in increased efforts to restore abandoned areas and provide public open spaces along the banks. As part of the study, a stakeholders advisory group will be created and involved through the review process and the completed review will be posted for Internet viewing.

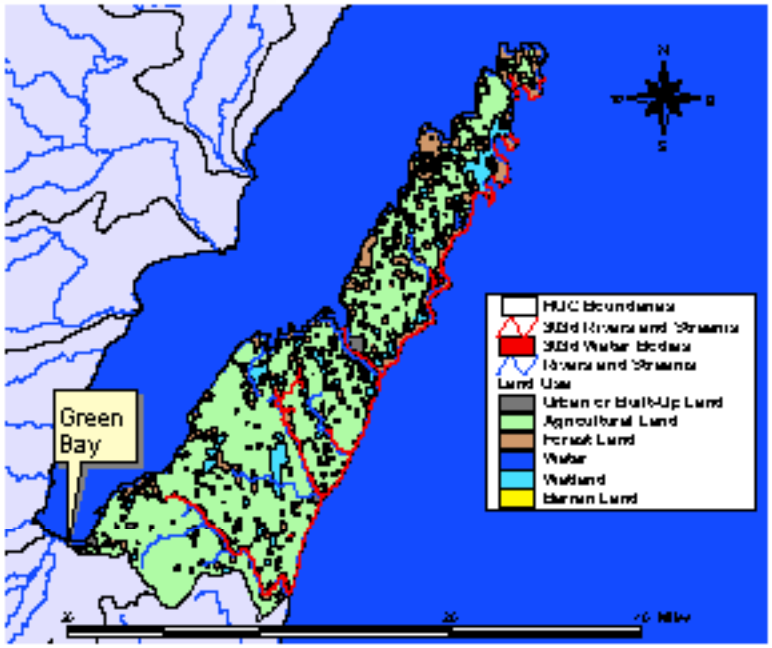
For more information, see the Chicago Waterways website at http://www.chicagoareawaterways.org/.

Impaired (303d) Waters

	Designated Uses		
Waterbody Name	Overall Use	Fish Consumption	Secondary Contact and Indigenous Aquatic Life
N. Shore Channel	Full support	Non support	Full support
N. Shore Channel	Full support	Non support	Full support
N. Shore Channel	Full support	Non support	Full support
S. Br. Chicago River	Full support	Non support	Full support
N. Br. Chicago River	Partial support	Non support	Partial support
Chicago San. & Ship Canal	Partial support	Non support	Full support
Chicago San. & Ship Canal	Full support	Non support	Full support
Chicago San. & Ship Canal	Full support	Non support	Full support
Chicago San. & Ship Canal	Full support	Non support	Full support
Chicago San. & Ship Canal	Full support	Non support	Full support
Cal-Sag Channel	Partial support	Non support	Partial support

Door Kewaunee Watershed

Hydrologic Unit Code: 04030102



Watershed Organizations

- 1000 Friends of Wisconsin - www.1kfriends.org
- Door Co. Environmental Council
- Door County Land Trust
- River Alliance of Wisconsin - www.wisconsinrivers.org
  Wisconsin's Environmental Decade - www.wienvdecade.org
- Lakeshore Natural Resources Partnership http://clean-water.uwex.edu/lakeshore/
- Doug Rossberg, Lakeshore Basin Water Team Leader - Doug.Rossberg@dnr.state.wi.us

Watershed Overview / Ecology / Biodiversity

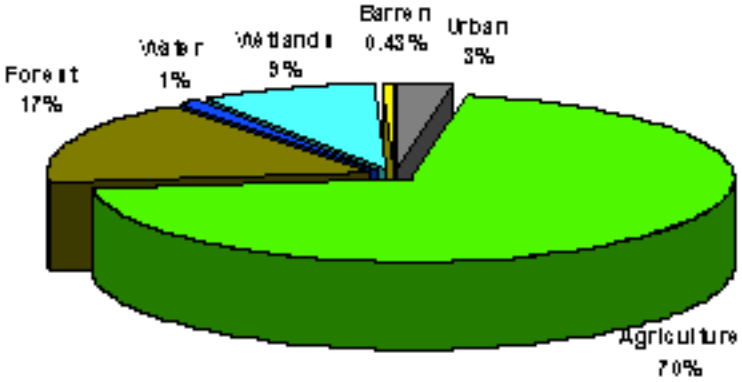
- Maple- basswood is the most common forest type, and the tree species with the greatest volume in the Lakeshore basin is ash followed by soft maple, aspen, basswood and beech.
- Recreational highlights include: hiking, birding, camping, rafting, canoeing, hunting, fishing, and boating on Lake Michigan and Green Bay.
- The diversity of islands, forests, wetlands, sand dunes, and ridge and swale topography provide habitat to an abundance of rare, threatened and endangered plants and animals.

Basin Ecology

- The Basin includes the Northern Lake Michigan Coastal and Southeast Glacial Plains Ecological Landscapes in the Northern Lake Michigan Coastal area, low sand dunes and beach ridges along the shoreline support unique plant species.
- Vegetation is maple- basswood- beach forests and wetlands. In the Southeast Glacial Plains area, former savanna (now farmed) and wetlands are predominant, along with kettle lakes and the Kettle Moraine landscape feature. This area's wetlands are highly productive for plants, insects, and invertebrates.
- Surface waters are a mix of lakes and cold and warm water streams with smallmouth bass, walleye, northern pike, panfish and trout. Great Lakes fisheries provide lake trout, lake whitefish, salmon and yellow perch.
- The basin's groundwater in Door County is underlain by Niagara Dolomite, or Karst (fractured limestone), which allows pollutants such as bacteria to move quickly and which makes this resource highly susceptible to contamination.
- Wildlife include white- tailed deer, turkey, ring- necked pheasant, ruffed grouse, waterfowl, geese, beaver, mink, otter, colonial waterbirds, trumpeter swans, eagle, osprey, northern goshawk, shorebirds
- Grasslands, which support over 105 bird species, are promoted through prescribed burns and mowing.

For more information, see the Wisconsin Department of Natural Resources' "Wisconsin's Basins" website at http://dnr.wi.gov/org/gmu/gmu.html and the USEPA "Surf Your Watershed" website at http://cfpub.epa.gov/surf/huc.cfm?huc_code=04030102

Land Use - Door-Kewaunee Watershed



Basin Priorities

In 2000 the Lakeshore Basin Partnership Team, which includes the Door-Kewaunee watershed, developed the following prioritized list of the most pressing issues impacting natural resources in the watershed management area.

1. Loss of riparian (stream and lakeside) buffers (streamside habitat)
2. Inadequate identification and protection of wetlands, wetland corridors, and groundwater recharge areas
3. Need for better land use Planning & improved local zoning
4. Inadequate management & protection of woodlots
5. Absence of stewardship ethic
6. Loss of small farms and/ or Conversion to large farms
7. Contamination of drinking water
8. Illegal dumping of toxins
9. Loss of biodiversity
10. Loss of shoreline habitat

Basin Social Concerns

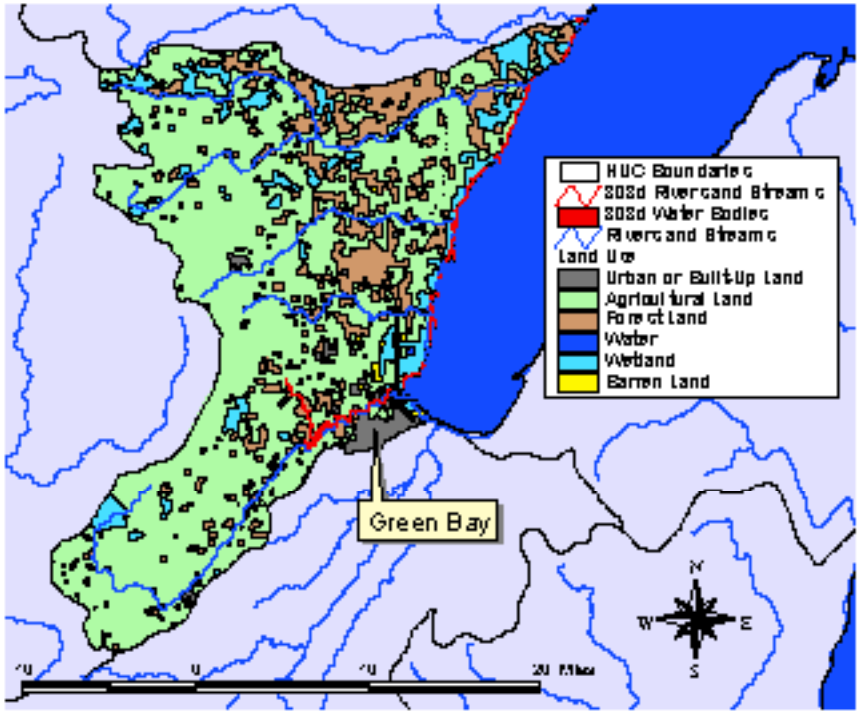
- Limit of aquatic habitat and open land to development, pollution threats to surface waters and contamination of drinking and groundwater.
- Address water quality problems from in-place pollutants, dams, urban and agricultural runoff.
- Preserve biodiversity and protect endangered and threatened species.
- Protect of large contiguous blocks of forestland, grassland and wetland that serve as habitat for mammals, birds, and amphibians, as well as providing a large self-sustaining forest ecosystem for all to enjoy.
- Exotic nuisance species, stocking issues, declining fishing opportunities, inadequate boat access.
- Monitoring of wildlife populations, water quality, and ecosystem function are needed to understand the status and trends of resources in the basin.

Impaired (303d) Waters

Waterbody Name	Impairment	Anticipated TMDL Submittal
Ahnapee River	PCB Fish Consumption Advisories	NA
Clark Lake	PCB Fish Consumption Advisories	NA
East Alaska Lake	Mercury Fish Consumption Advisories	NA
Kewaunee Harbor	Aquatic Toxicity	NA
	Fish Consumption Advisory	
Kewaunee River	PCB Fish Consumption Advisories	NA
Stony Creek	Loss Of Instream Habitat	NA
Sturgeon Bay, Ship Canal	Aquatic Toxicity	NA

Duck-Pensaukee Watershed

Hydrologic Unit Code: 04030103

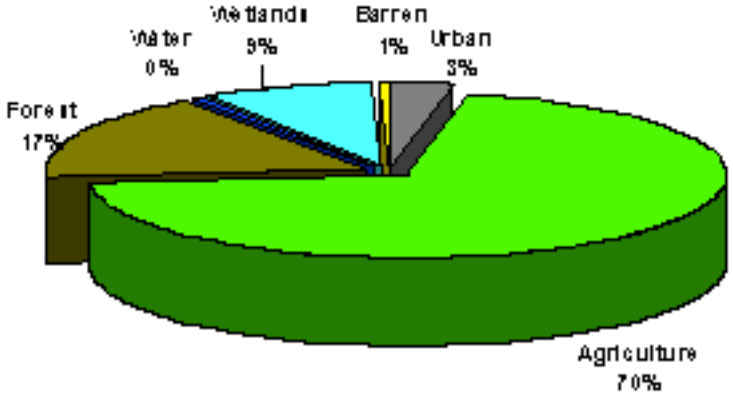


Watershed Overview / Ecology / Biodiversity

- The Duck-Pensaukee watershed covers approximately 490 square miles.
- There are approximately 35 miles of Lake Michigan shoreline.
- Green Bay is the sole urbanized area in the watershed.
- The watershed flows into the Green Bay.
- Just over 70 percent of the watershed is agricultural.
- Wildlife include black bear, white- tailed deer, turkey, ring- necked pheasant, ruffed grouse, waterfowl, geese, beaver, mink, otter, timber wolves, elk, colonial waterbirds, trumpeter swans, eagle, osprey, northern goshawk, shorebirds.
- Maple- basswood is the most common forest type and the tree species with the greatest volume in the basin is hard maple followed by aspen, white and red pine, soft maple and balsam fir.
- Coastal wetlands are an important feature of the watershed.
- Groundwater is the source of potable water for most residents within the Duck-Pensaukee watershed.
- Groundwater levels have dropped, causing suburban areas to seek direct withdrawals from Lake Michigan.

For more information, see the USEPA "Surf Your Watershed" website at http://cfpub.epa.gov/surf/huc.cfm?huc_code=04030103

Land Use - Duck-Pensaukee Watershed



Watershed Activities / Concerns / Priorities

- The Wisconsin Department of Natural Resources manages the Duck-Pensaukee watershed in two integrated management plans. The northern portion is managed as part of the Upper Green Bay Basin and the southern portion as part of a larger Lower Fox River basin.
- The following are objectives for the Upper Green Bay management Basin, which includes a significant portion of the Duck-Pensaukee watershed:
- Target the West Shore of Green Bay as a high priority for habitat protection
- Implement the DNR's 50 year Land Legacy Study, an acquisition plan for the state
- Protect shoreland habitat and water quality through water regulation and zoning
- Work with local communities in developing "smart growth" plans & promoting wise land use and zoning
- Complete a comprehensive fisheries plan for the basin, focusing on the Oconto, Menominee, and Peshtigo Rivers and Lake Michigan, including addressing invasive exotic species
- Complete the Master Plan for the Governor Tommy G. Thompson Centennial State Park
- Encourage sound forestry practices on public and private land and identify and manage terrestrial invasive exotic species
- Enhance educational activities for forestry, water quality, wildlife management, healthy ecosystem.
- The Oneida are leaders in the Duck Creek watershed, which runs through the reservation.

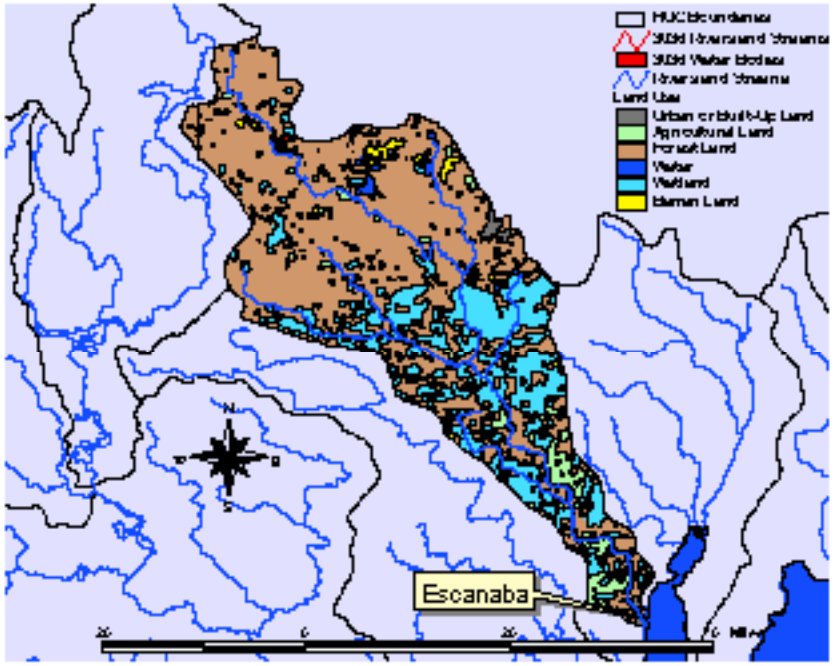
Impaired (303d) Waters

Waterbody Name	Impairment	Anticipated TMDL Submittal
Duck Creek * (1)	Nutrients	NA
	PCB Fish Consumption Advisory	
	Flow Alteration(s)	
	Loss Of Instream Habitat	
	Organic Enrichment/Low Dissolved Oxygen	
	Sediment	
Fond Du Lac River	Mercury Fish Consumption Advisory	NA
	PCB Fish Consumption Advisory	
	TOC	
Green Bay - South Of Marinette And Its Tribs Including The Menominee, Oconto, Fox & Peshtigo Rivers From Their Mouths To The First Dam	PCB Fish Consumption Advisory	NA
Trout Creek (2)	Nutrients	NA
	PCB Fish Consumption Advisory	
	Flow Alteration(s)	
	Loss Of Instream Habitat	
	Organic Enrichment/Low Dissolved Oxygen	
	Sediment	

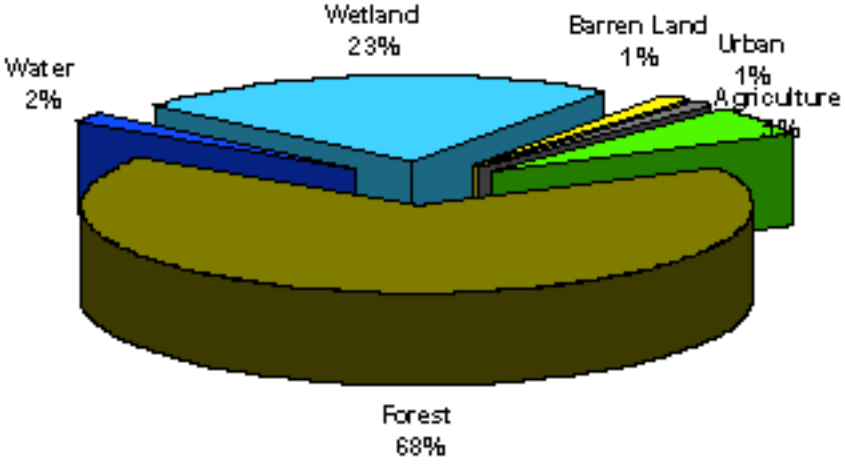
Escanaba River Watershed

Hydrologic Unit Code:
04030110

For more information, see the USEPA "Surf Your Watershed" website at http://cfpub.epa.gov/surf/huc.cfm?huc_code=04030110



Land Use
Escanaba River Watershed



Impaired Waters

Waterbody Name	Impairment	Anticipated TMDL Submittal
Greenwood Reservoir	Mercury	2011
Round Lake	Mercury Fish Consumption Advisory	2012
Schweitzer Reservoir	Mercury	2011

Watershed Overview / Ecology / Biodiversity

- The Escanaba River watershed covers over 920 square miles.
- Over 66 percent of the watershed is forested.
- Over 508 miles of the streams flow year-round.
- The Escanaba River watershed is one of the watersheds within which the Sault Ste. Marie Tribe of Chippewa Indians live.

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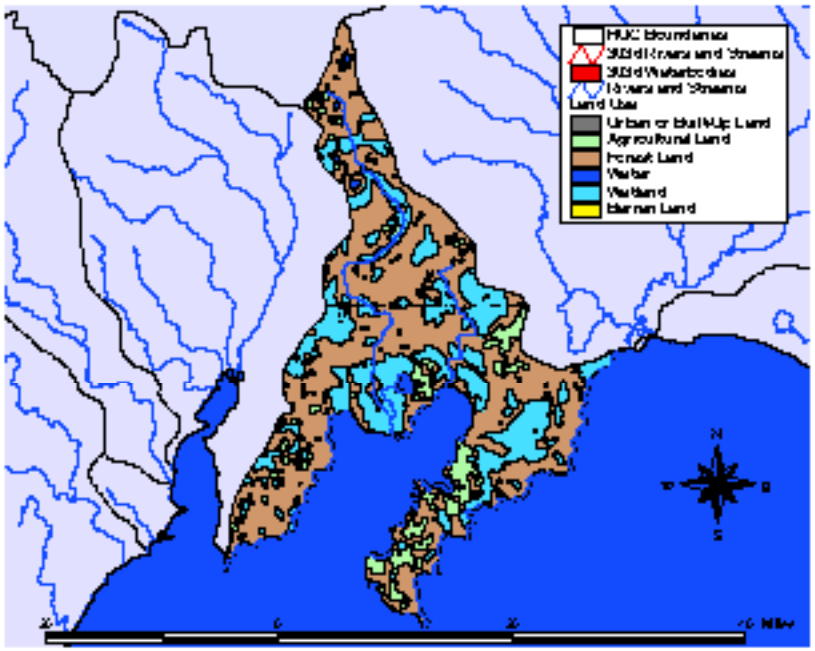
Fishdam-Sturgeon Watershed

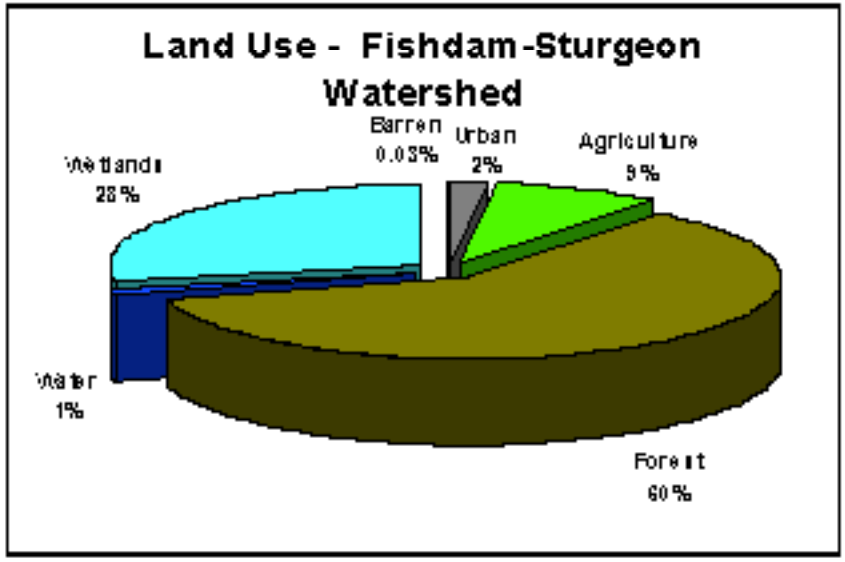
Hydrologic Unit Code: 04030112



For more information, see the USEPA "Surf Your Watershed" website at http://cfpub.epa.gov/surf/huc.cfm?huc_code=04030112

Watershed Overview / Ecology / Biodiversity

- The Fishdam-Sturgeon watershed is located in the upper peninsula of Michigan and covers approximately 559 square miles.
- The watershed has approximately 123 miles of Lake Michigan shoreline.
- The watershed is 60 percent forest and 28 percent wetland. Most of the wetlands are coastal wetlands.
- The watershed has 260 miles of rivers and streams.
- There are no impaired waters in the Fishdam-Sturgeon watershed.



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