

Cass River Watershed Survey (2016)

The Department of Environment, Great Lakes, and Energy (EGLE) samples Michigan's lakes, streams, and rivers. Samples are taken to see if water quality standards are being met. Water quality standards help make sure rivers, streams, and lakes are safe for swimming, fishing, boating, farming, and industry. Water quality standards also protect aquatic and wildlife communities.

EGLE has Aquatic Biologists that sample aquatic animals in our rivers and streams. Aquatic macroinvertebrates are insects and other small animals that do not have backbones. They live in our streams and rivers and are excellent clues to how clean the water is. Many live in the water all year long. Some animals are more tolerant to pollution than others. In general, healthy streams have many different kinds of aquatic macroinvertebrates and more kinds that are sensitive to pollution. Biologists also sample the habitat of aquatic animals. Habitat includes the rocks, gravel, silt, and sand in the stream or river. It also includes the vegetation in the water or along the shore.

Additional information can be found on EGLE's Assessment of Michigan Waters website at: Michigan.gov/WaterQuality



Cass River

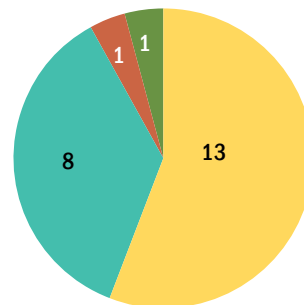
Routine sampling of the Cass River occurs every five years to check stream condition or health. Sampling last occurred in 2016 and will occur again in 2021. The aquatic macroinvertebrate community and habitat conditions found in 2016 are shown in the graphs to the right. A map on the last page depicts macroinvertebrate condition at specific stream locations. To request a copy of the full report, please contact EGLE. After sampling biologists identify the aquatic macroinvertebrates. They then score and rate the health of the biological community and habitat.

In the Cass River watershed most sampling sites were rated acceptable, marginal, or good (see pie charts). The south branch of the Cass River at Kelly Road had a poor macroinvertebrate score due to a lack of stable habitat caused in part by the stream being straightened and cleaned out for efficient water drainage.

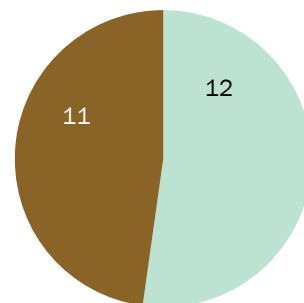
"A watershed is all of the land that drains into a river, lake, or stream."

Aquatic Bug and Habitat Health at 23 stations in the Cass River watershed (2016)

Aquatic Bug Community



Habitat Rating



- Excellent
- High Acceptable
- Good
- Marginal
- Low Acceptable
- Poor

Watershed	Natural	Developed	Cultivated Agriculture	Hay or Pasture	Other	Lost Wetlands
South Branch Cass River	24%	6%	52%	17%	0%	19%
White Creek-Cass River	45%	8%	31%	15%	1%	9%
Cass River	36%	11%	37%	15%	1%	1%



EGLE employee sampling a Michigan stream

Land Use

The use of the land in the watershed that drains to the Cass River influences the types of pollution that can enter the water. The land use in the Cass River watershed is dominated by agriculture. Because the soils are poorly drained, many fields in use have underground tile pipes for drainage. Wetlands and streams have been drained, dredged, and straightened (e.g., channelized), so that water moves quickly. This scours the stream banks and fills in stream bottoms with sediment and can degrade habitat for aquatic insects and fish. The Cass River has an average of 35% of natural forested and wetland areas, which have less runoff because water has more time to soak into and be filtered by the soil.

Water Quality Data

Water chemistry data have been collected as part of EGLE's Water Quality Monitoring Program (Michigan.gov/WaterQuality) and, to a limited degree with biological surveys (MCI.State.Mi.Us/MiSwims). Concentrations of metals found meet water quality standards with the exception of mercury, which is addressed by the statewide mercury reduction plan (Michigan.gov/TMDL). Other water bodies that are not meeting water quality standards due to habitat alterations include: Ryder Creek, Greenman Creek, Butternut Creek, and Moore Drain. Nutrient concentrations in the watershed as measured by total phosphorus are slightly lower in the Cass River watershed when compared to the average concentration found in other water bodies in the same ecoregion. Additional information is available upon request.

Fish Consumption Data

Murphy Lake, Saginaw Bay, the entire Cass River watershed, and other water bodies, have fish consumption advisories due to mercury, dioxin, and PCB levels in fish tissue. The Eat Safe Fish link has more information. Fish Consumption Advisory Details: Michigan.gov/EatSafeFish. EGLE is not responsible for fish stocking; please see the Michigan Department of Natural Resources for more information (Michigan.gov/DNRFishing).

E. coli Monitoring Data

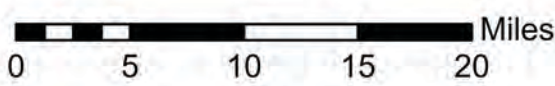
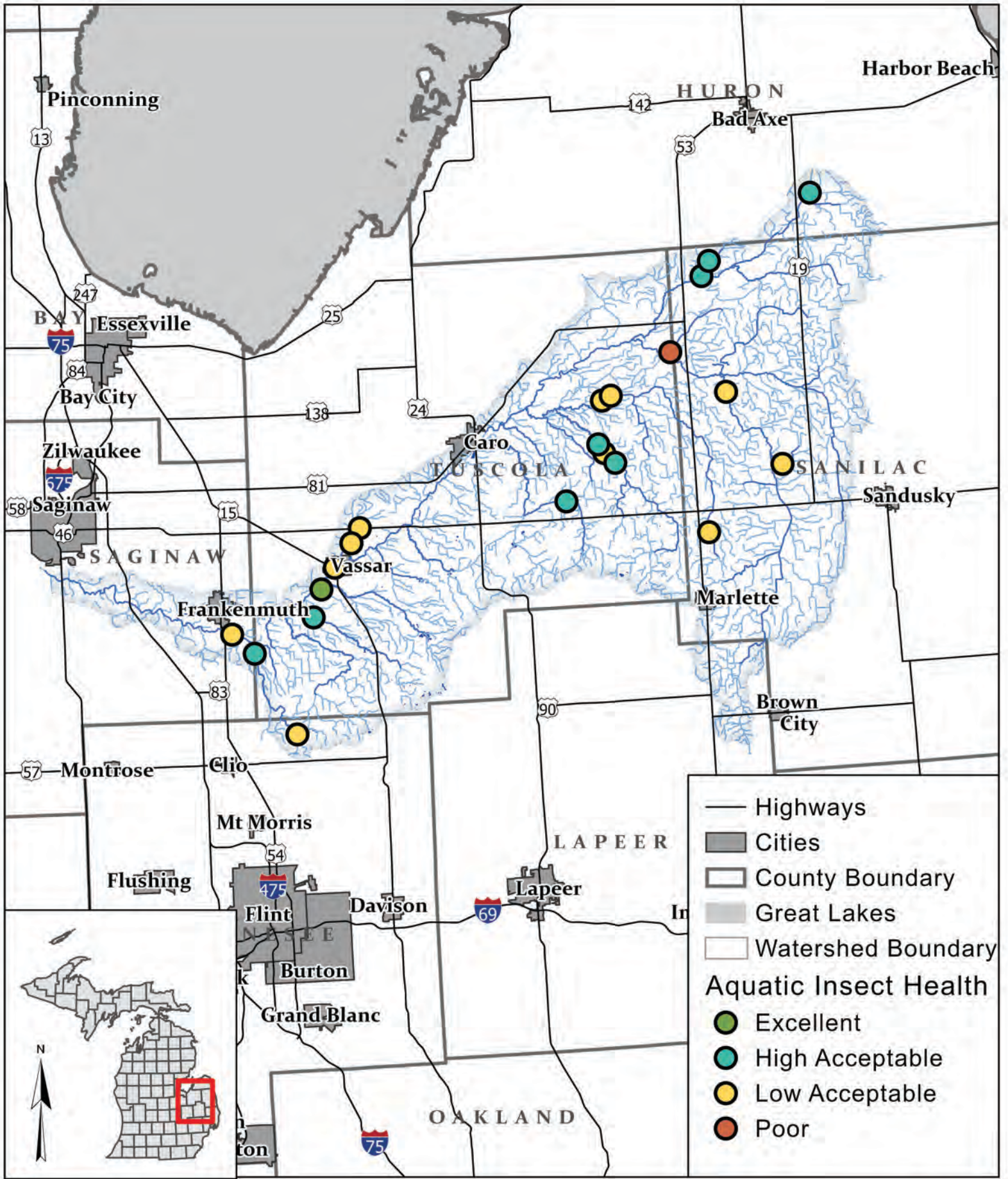
The entire Cass River watershed is not meeting water quality standards due to high bacteria levels at times. More information can be found at Michigan.gov/EGLEcoli. Public beaches in this watershed (including those on rivers or lakes) may at times be closed due to elevated levels of bacteria (including *E. coli*), especially after rain. Beach closing information is available online through BeachCast: glin.net/beachcast and through BeachGuard: EGLE.State.Mi.US/Beach/

Watershed Groups and Lake Associations

Cass River Greenway: CassRiver.org

Sampling Requests

If you have a water body that you would like EGLE to consider sampling, you can fill out a Monitoring Request Form (Michigan.gov/WaterQuality). Requests will be reviewed and completed based on staff availability, budget, and other monitoring needs.



Cass River Watershed Monitoring 2016
 Water Resources Division