



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF NATURAL RESOURCES  
LANSING



SHANNON LOTT  
ACTING DIRECTOR

September 1, 2023

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

Dear Secretary Bose:

**SUBJECT: MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
SUPPLEMENTAL FILING – REQUEST FOR INVESTIGATION OF  
COMPLIANCE UNDER ARTICLE 405 FOR FOOTE (P-2436), MIO (P-  
2448), COOKE (P-2450), ALCONA (P-2447), FIVE CHANNELS (P-2453),  
LOUD (P-2449), CROTON (P-2468), HARDY (P-2452), TIPPY (P-2580),  
AND HODENPYL (P-2599)**

The Michigan Department of Natural Resources (MDNR) is requesting that that the Federal Energy Regulatory Commission (FERC) investigate compliance with water quality standards for the Consumers Energy Corporation's (CEC) projects on the Manistee, Muskegon, and Au Sable rivers and pursue license changes as needed to ensure compliance and environmental protection (e.g., as discussed in Evaluation of Mitigation Effectiveness at Hydropower Projects: Water Quality p4 20030514-0076). As a result of CEC's recent announcement to develop a request for proposals for potential sale of their hydropower fleet, a determination on water quality compliance is urgent so prospective buyers understand potential risks associated with acquiring these projects. With this letter, the MDNR is providing additional information after reviewing Michigan Hydro Relicensing Coalition's (MHRC) March 31, 2023 filing, CEC's June 15, 2023 filing, and Michigan Department of Environment, Great Lakes, and Energy's (EGLE) August 23, 2023 filing.

While CEC did attempt to address water quality issues related to warming temperatures from hydroelectric projects on the Manistee, Muskegon, and Au Sable rivers by installing upwelling systems, these attempts resulted in very limited success. Water temperatures remain largely outside of the limitations of the license and water quality agreements. The MDNR is providing additional information related to water temperature and fisheries in the these river systems to highlight the negative resource effects of these facilities and the continued concerns with water quality.

## Water Temperature

Recent analysis of historical data shows long-term degradation of water quality near these CEC projects. Water quality data is publicly available for United States Geological Survey stream gages via the url: <https://waterdata.usgs.gov/mi/nwis/rt> and through the Water Quality Portal hosted by United States Environmental Protection Agency. In a letter filed on March 31, 2023, the MHRC provided an analysis which shows a concerning trend of exceedances of Section 401 Water Quality Certification (Certification) conditions and therefore Michigan's Part 401 Water Quality Standards (WQS) for both water temperature and dissolved oxygen concentration at Consumers projects on the Manistee, Muskegon, and Au Sable Rivers. Additionally, conditions in CEC's Certification are not consistently being met, even after attempts were made to remediate water quality through use of engineering solutions at select projects.

Michigan's WQS have three relevant rules regarding numeric water quality criteria. The first is Rule 100 which designates and protects stream reaches for coldwater fisheries. The second, Rule 75(1) of the WQS states the following:

*Rivers, streams, and impoundments naturally capable of supporting coldwater fish shall not receive a heat load which would do either of the following: (a) Increase the temperature of the receiving waters at the edge of the mixing zone more than 2 degrees Fahrenheit above the existing natural water temperature. (b) Increase the temperature of the receiving waters at the edge of the mixing zone to temperatures greater than the following monthly maximum temperatures:*

J	F	M	A	M	J	J	A	S	O	N	D
38	38	43	54	65	68	68	68	63	56	48	40

For coldwater designated stream reaches, water temperatures should not exceed these listed values. Additionally, a river may not be warmed more than two degrees Fahrenheit above the upstream natural water temperature, or another temperature as determined by EGLE.

Lastly, Rule 64(1) specifies a minimum of seven milligrams per liter of dissolved oxygen be maintained in inland waters designated for coldwater fisheries protection, and five milligrams per liter for all other waters except for inland lakes.

As stated in EGLE's letter filed on August 23, 2023, "Water quality limits set forth in Article 405 are consistently exceeded, despite efforts to improve water quality using engineering solutions on the Mio, Tippy, Hodenpyl, and Croton Dams."

## Effects on Fisheries

Figures 1 and 2 in Appendix A represent trout populations as biomass in pounds per acre of both Brown Trout and Rainbow Trout at two sites in the Au Sable River system,

one upstream of Mio Dam (Stephan Bridge) and the other directly downstream of Mio Dam. For all years, both trout species population levels, represented by biomass, are lower downstream of the dam even with MDNR fish stocking efforts. While other factors can influence trout biomass such as food availability, predator populations, sediment, or habitat availability, it is clear that warm water temperatures negatively affect trout populations downstream of Mio Dam.

Although comparable fish population data for other hydropower projects is not as readily available, similar patterns likely exist for other CEC projects on the Manistee, Muskegon, and Au Sable rivers with warming temperatures limiting trout populations (Tonello 2004a,b). Stressors on populations of thermally sensitive species like trout, such as reduced dissolved oxygen and higher temperatures, can have detrimental population level effects (Louhi et al. 2023).

Currently, MDNR spends over \$900,000 annually on fish stocking downstream of CEC hydroelectric projects. Much of this stocking effort is necessary to maintain the recreational coldwater fishery that would otherwise naturally occur but for the negative effects these projects have on riverine water quality and habitat; however, even with supplemental stocking, fish biomass rarely if ever exceeds what occurs naturally upstream of impounded waters. Simply put, without the negative effects of CEC projects on water quality, these river systems would support naturally sustaining coldwater fisheries.

If you need further information or assistance, please contact me at 231-285-1042 or [castled1@michigan.gov](mailto:castled1@michigan.gov).

Sincerely,



Dana Castle, Fisheries Biologist  
Fisheries Division

cc: Adam Monroe CEC  
Bob Stuber, MHRC  
Scott Hicks, FWS  
Andrea Ania, USFS  
Douglas Bridges, EGLE  
Patrick Ertel, MDNR

### Appendix A: Trout Biomass Estimates Above and Below Mio Dam

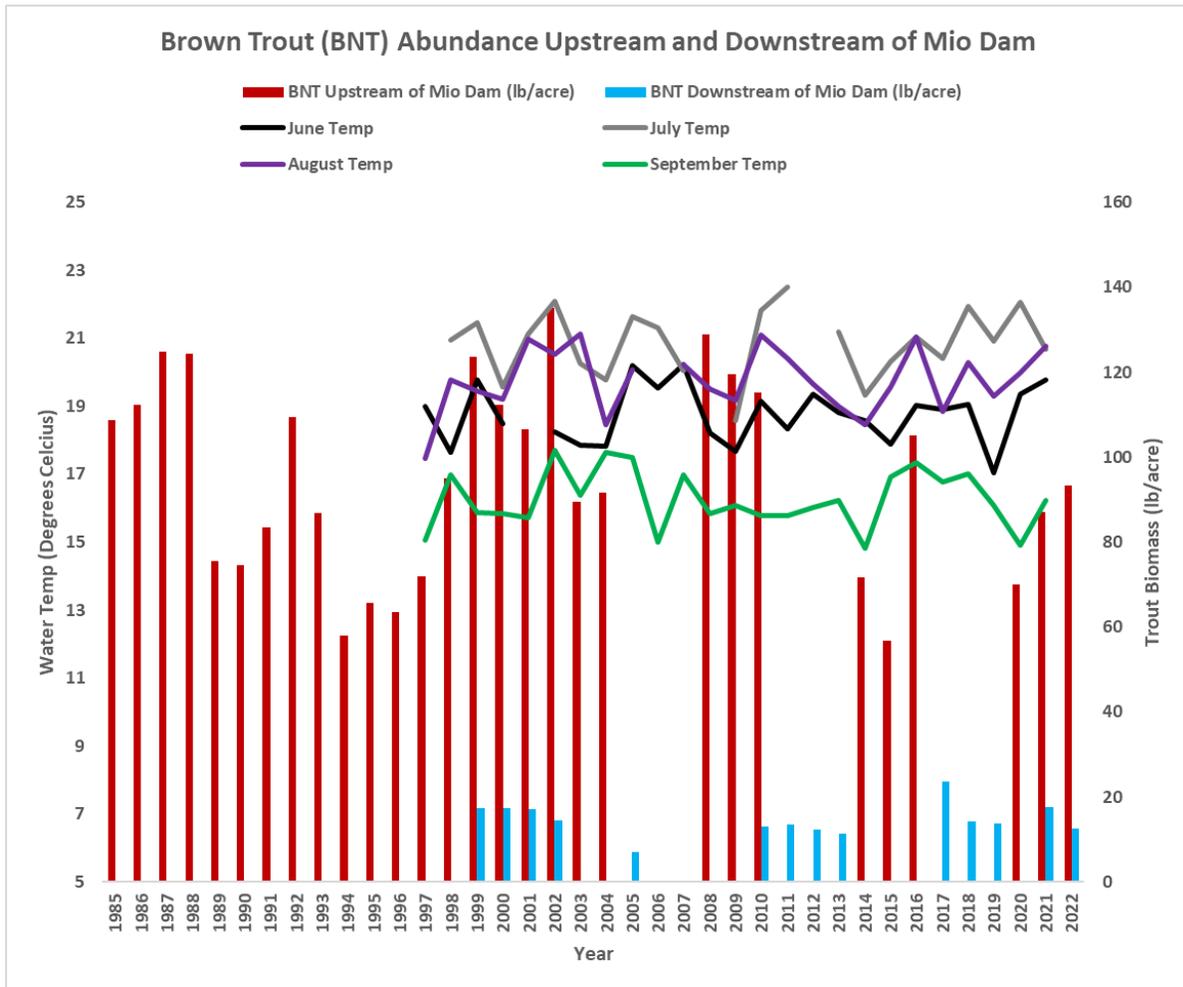


Figure 1: Brown Trout biomass measured in pounds per acre upstream of Mio Dam at Stephan Bridge and directly downstream of Mio Dam. This data was acquired from Status and Trends surveys conducted by MDNR

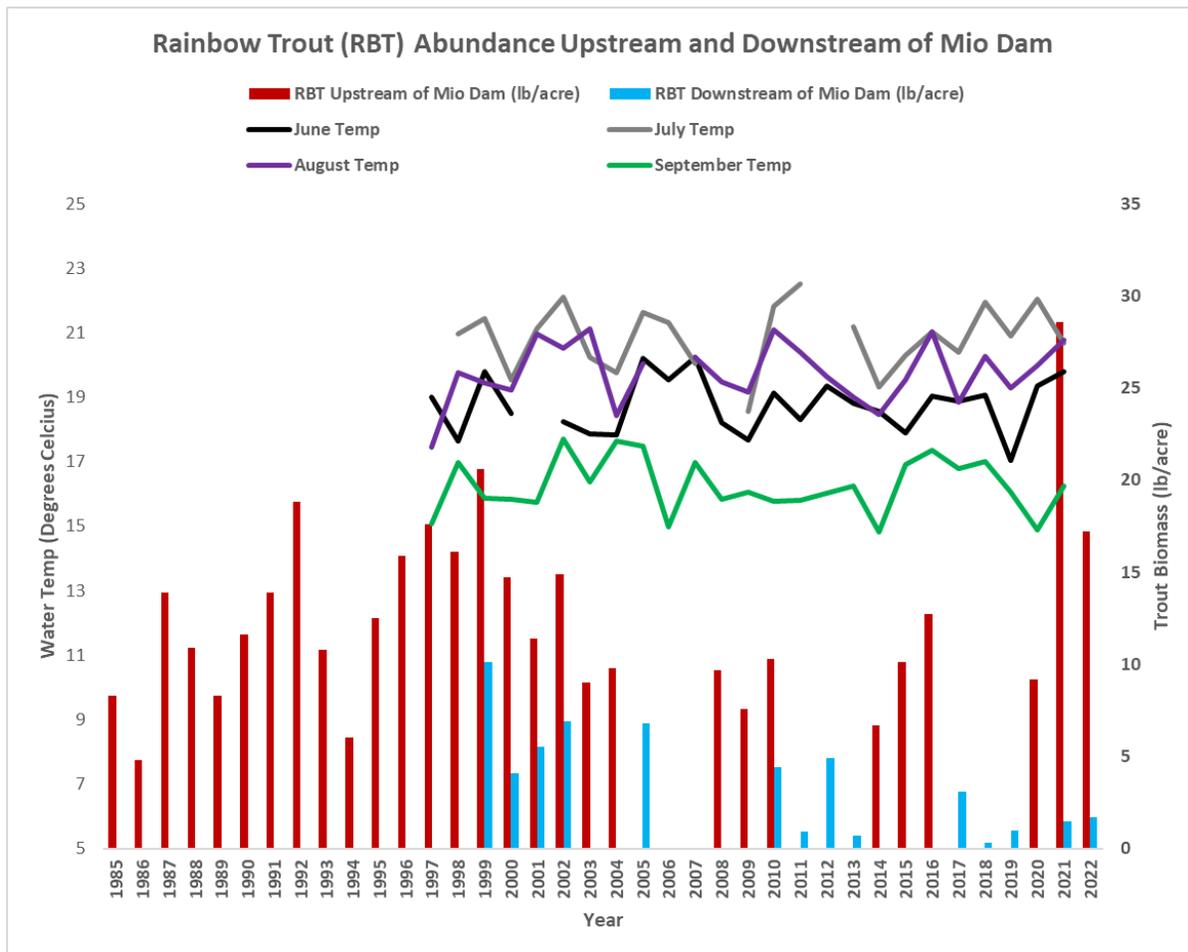


Figure 2: Rainbow Trout biomass measured in pounds per acre upstream of Mio Dam at Stephan Bridge and directly downstream of Mio Dam. This data was acquired from MDNR Status and Trends survey program.

**References:**

Louhi, P., L. Pettinau, L. S. Härkönen, K. Anttila, and A. Huusko. 2023. Carryover Effects of Environmental Stressors Influence the Life Performance of Brown Trout. *Ecosphere* 14(1):e4361. <https://doi.org/10.1002/ecs2.4361>

Tonello, M.A. 2004a. [Manistee River Below Tippy Dam](#). Michigan Department of Natural Resources, Status of the Fishery Resource Report No. 2004-4.

Tonello, M.A. 2004b. [Manistee River Hodenpyl Dam to Red Bridge](#). Michigan Department of Natural Resources, Status of the Fishery Resource Report No. 2004-2.