

## Inland Lake & Wetland Adverse Resource Impact Assessment

### **Background**

The Great Lakes Compact requires prevention of adverse resource impacts (ARI's) to water-dependent natural resources. Michigan's Part 327 large-quantity water withdrawal laws represent an implementation of the requirements of the Great Lakes Compact. Michigan developed a scientific framework for evaluating and predicting potential ARI's to streams and rivers, and the statute defined what ARI's are in regards to that framework (i.e., it defined certain amounts of change in river fish populations as the thresholds of ARI's). However, it was not feasible at the time of adopting the GL Compact of Part 327 to develop a framework for evaluating and predicting ARI's in terms appropriate for inland lakes or wetlands. Since then, previous iterations of the Water Use Advisory Council have attempted to pursue development of frameworks that would accomplish these charges. The findings of previous WUAC's have helped to identify numerous data needs and obstacles preventing the development of these framework's, but have also concluded that it was not readily available to create those at the times of each reporting.

There were many recommendations relevant to these charges adopted by the previous WUAC report in 2014. Most of these recommendations are not relevant until a beginning conceptual framework for how to accomplish these charges is developed. One recommendation pertaining to the better acquisition of lake bathymetry data is being implemented by EGLE at this time.

### **Current Work & Findings**

As part of the work of this current WUAC, a subcommittee of the Data Committee was formed to continue exploring this issue. The subcommittee sought to engage several recognized experts on inland lakes, many of whom had been formerly engaged in the efforts of past WUAC's on this topic. New strides in relevant data collection and modeling were reviewed to assess whether this charge had become readily practical to develop at this time. The subcommittee found that such new modeling or data support frameworks are still not readily available for our use within this program today. EGLE is in the process of working with Michigan agencies and universities to further develop a system for the better collection of lake bathymetry data, as follow up to the previous WUAC 2014 recommendation IL 1.1.

In the future, in order to make progress on the development of ARI assessment platforms for inland lakes or wetlands, it will be necessary to identify appropriate mechanisms for how water withdrawals and groundwater contributions to these water bodies affect certain metrics of inland lakes or wetlands. Once acceptable mechanisms and metrics are identified, a classification of these waterbodies based on their sensitivities to impacts will need to be further developed and refined, and this will likely require the acquisition of additional data to support its eventual use. In essence, it is possible to accomplish these charges, but considerable new work still needs to be accomplished, along

with future data collection to support it. Much work remains to be done in order to accomplish this charge. While we find that it is still not readily available to us today, focused attention should continue to be given to these charges in the future.

**Recommendation**

The WUAC finds that development of ARI assessment frameworks for inland lakes and wetlands is still not feasible today. We therefore are not at this time, recommending specific financial investment towards its development. Results of the initial inland lake bathymetry mapping pilot project will be available by the end of 2012, and recommendations following it are anticipated in the next WUAC report. We do recommend now, that the WUAC through its committees, continue work in developing a conceptual framework for how this could be achieved, through the future work of the WUAC.

**Proposed Current Investment Need:** none

**Relevant Previous WUAC Recommendations (2014):** IL1.1 2.2a; all other IL recommendations are dependent on these being accomplished first.