



MINIMIZING THE EFFECTS OF CLIMATE CHANGE IN MICHIGAN'S GRAND TRAVERSE BAY

INTEGRATED ASSESSMENT

Great Lakes coastal communities are already experiencing the effects of climate change and climate variability. Communities across the Grand Traverse Bay watershed have witnessed changes in lake ice cover, seasonal precipitation, air and lake temperatures and storm severity. These changes have occurred while development and population in the watershed have continued to grow.

Climate and land use changes have independently and jointly altered the amount of water, sediment, nutrients, toxins and pathogens entering streams and coastal waters throughout the watershed. Forecasts predict that changes in temperature and precipitation patterns are likely to intensify into the next century. When added together, these factors have the potential to threaten the ecology and economy of the Grand Traverse Bay region.

PROJECT DESCRIPTION

The research team will address the following questions: What are the risks and vulnerabilities of the Grand Traverse Bay, its watershed and its coastal communities to climate and land use changes? What are potential adaptive strategies that would help preserve particular uses?

The project will consist of technical assessments by the research team and stakeholder involvement through workshops and community interaction. The research team will:

- Quantify historical changes in air and water temperature, precipitation, snowfall, lake ice cover, lake levels, stream flow and water quality.
- Qualitatively assess impacts of these changes on macrophytes and benthic algae, lake levels and shoreline alterations, and pathogens.
- Simulate the likely local and regional impacts of climate change on nutrient and pathogen loading, sedimentation in streams and coastal areas, and stormwater runoff from coastal communities.
- Assess the effectiveness and economic impacts of management strategies for preserving highly valued uses critical to local economy.
- Develop adaptive management strategies and an integrated report based on stakeholder recommendations.



EXPECTED OUTCOMES

This project brings together unique factors that will result in a comprehensive, integrated project that will serve as a model for other watershed communities in Michigan and the U.S.

The final project report will include options for adaptive management that could be implemented by resource managers and policy practitioners. The working group will provide input and guidance on a range of potential adaptive management plans. During this process, technical barriers to each of the adaptive management plans will be outlined and discussed to inform the feasibility of future implementation.

GET INVOLVED

The project team will host at least two meetings where they hope to solicit feedback from the public. The first will be held at the beginning, to introduce the project and to identify any key stakeholders that should be added to the Working Group. The second meeting will be held toward the end of the project with the main goal of providing a venue for public comment and feedback on the results of the research.

In addition to these meetings, the public will also be invited to join seminars and presentations by the technical team at the Working Group workshops. The research team will also present outcomes to elected and appointed officials in the region and invite the officials to participate in the workshops.

To get involved, contact Erin Dreelin. For more information on the project and for periodic updates, visit the research project website.



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