

PREPARING FOR CLIMATE CHANGE IN THE GREAT LAKES REGION

On June 27, 2008, forty representatives from Great Lakes foundations, non-governmental organizations, agencies, and universities, convened in Flint, MI for a one-day workshop titled “Preparing for Climate Change in the Great Lakes Region.” The workshop was sponsored by the Mott Foundation, Joyce Foundation, Kresge Foundation, Great Lakes Fishery Trust, and Michigan Sea Grant.

Workshop Objectives

- Identify policy changes that will enable Great Lakes communities to adapt to climate change and protect major ecosystems.
- Identify strategies for implementing those policy changes.

Summary of Events

Andy Buchsbaum, Director of the National Wildlife Federation’s Great Lakes Natural Resource Center, opened the plenary session. He presented the day’s agenda and reminded participants that the workshop’s focus was on adaptation, not mitigation, and that discussion should be focused on processes that connect climate change to the Great Lakes, including watershed impacts. Following Buchsbaum’s introductory comments, three presentations provided the background for the workshop.

Don Scavia, professor in the University of Michigan’s School of Natural Resources and director of Michigan Sea Grant, addressed current and future climate impacts. He emphasized that air and lake temperatures are increasing, winters are getting shorter, ice cover is decreasing, and precipitation patterns are moving toward more extreme events. Those trends are likely to continue, and most modeling efforts suggest lake levels will decline. These climate-driven changes are exacerbating most of the well-known stresses on Great Lakes ecosystems.

Tracy Mehan of the Cadmus Group Inc., discussed broad-scale policies that can influence adaptation. He pointed out that climate variability bolsters the case for implementing sustainable/sensible, long-term strategies that protect the Great Lakes ecosystem (“no regrets” activities and policies). But, he emphasized that under a changing climate our understanding of lake levels and the Great Lakes ecosystem varying around a long-term, fixed baseline is no longer true, and that realization requires planning for uncertainty through adaptive management implemented at watershed scales, involving stakeholders in the process, and tracking progress through continuous monitoring and review of resources.

The Great Lakes Commission’s Executive Director Tim Eder discussed climate change policy from a state and regional

perspective. He summarized examples of state and regional efforts that should be considering climate change adaptation in their policy analysis and suggested that even in the face of uncertainty, there is a need to develop and implement adaptation policies and practices today that will help manage future changes.

Panelists then reacted to the presentations and provided thoughts on policies and strategies that would advance adaptation efforts in the Great Lakes region. The conference then moved to breakout groups, charged with:

- Identifying new policies or policy changes to guide climate adaptation in the Great Lakes
- Prioritizing “low-hanging fruit policies,” which are those policies that are both most feasible and have the greatest impact

The breakout groups reconvened in plenary to report their findings, and the workshop concluded with an open discussion. Workshop participants identified guiding principles, priority issues, focus areas, and implementation approaches to guide climate change adaptation efforts.

Guiding principles for adapting to climate change

- Focus adaptation efforts on restoring and promoting ecosystem resiliency, which is the ability of an ecosystem to cope with disturbances without shifting to become a different system;
- Pursue no-regrets, low-hanging fruit policies, policies that achieve both mitigation and adaptation, and policies that achieve multiple benefits;
- Avoid reinventing the wheel – existing policies provide opportunities to address climate change adaptation, and we can incorporate adaptation efforts into work already being done;
- Target actions at the scale (local, state, national) where implementation is most feasible and will achieve highest impact;
- Support research that increases confidence in predictions of climate change impacts;
- Be careful about linking current issues to climate adaptation. Will linking it advance progress or could it hurt?
- Be cognizant that challenges may be more sociopolitical than technical. Increased understanding of climate change processes will help prepare decision makers.

Priority water resource issues

Targeting policy initiatives on the following water resource management issues will have the most impact on restoring and promoting ecosystem resiliency, thus increasing its capacity to adapt to a changing climate.

- Non-point source pollution, flooding, and combined sewer overflows (more precipitation, and heavier and more frequent storm events will increase runoff)
- Shoreline management (increased fluctuations of lake levels may increase erosion, periodically expose formerly submerged lands, and present navigation challenges)
- Shortages of Great Lakes water (regional and global supply/demand management presents myriad challenges)

Although these issues are not new, climate change will exacerbate them and force them to the forefront of the policy arena; addressing them will become more urgent than ever.

Recommended areas for policy change – The priority issues listed above can be addressed by focusing climate change adaptation strategy on policies in four key areas. For each area there are two recommended categories of action. The first is enforcing and strengthening policies that are already in motion to restore and protect ecosystem resiliency.

The second is to explicitly integrate climate change into existing and new policies, such as shoreline ownership and pollution permitting. Each area is listed below along with an example of a related policy initiative identified at the workshop.

1. **Fiscal policy** – Adapting to climate change will require a shift toward fiscal policies that discourage activities that reduce adaptive capacity, and provide incentives to those that promote ecosystem resiliency. The state-level fiscal setting (tax structure, subsidies, funding opportunities, etc.) could play an influential role in this shift by charging for actions that harm the Great Lakes, which would create a pool of funding for restoration and adaptation measures.

2. **Land use planning and community development** – Through their planning and zoning capacity, local governments present a powerful opportunity for increasing adaptive capacity. A policy initiative to promote low-impact development practices and green infrastructure at the local level is one way to take advantage of this opportunity.

3. **Water conservation and efficiency** – One of the simplest ways to expand adaptive capacity in the face of increased water demand is to use Great Lakes water more efficiently. An example of a policy initiative in this area is one aimed at removing subsidies so that the cost of supplying and conveying Great Lakes water approaches its “true cost,” thereby discouraging wasteful use.

4. **Wetland restoration** – The significant role that wetlands play in filtering runoff and controlling flooding makes wetland restoration a tremendous opportunity for increasing ecosystem resiliency. Policies that provide economic incentives for protecting wetlands and restoring their ecological function will increase our capacity to deal with changing precipitation and runoff patterns.

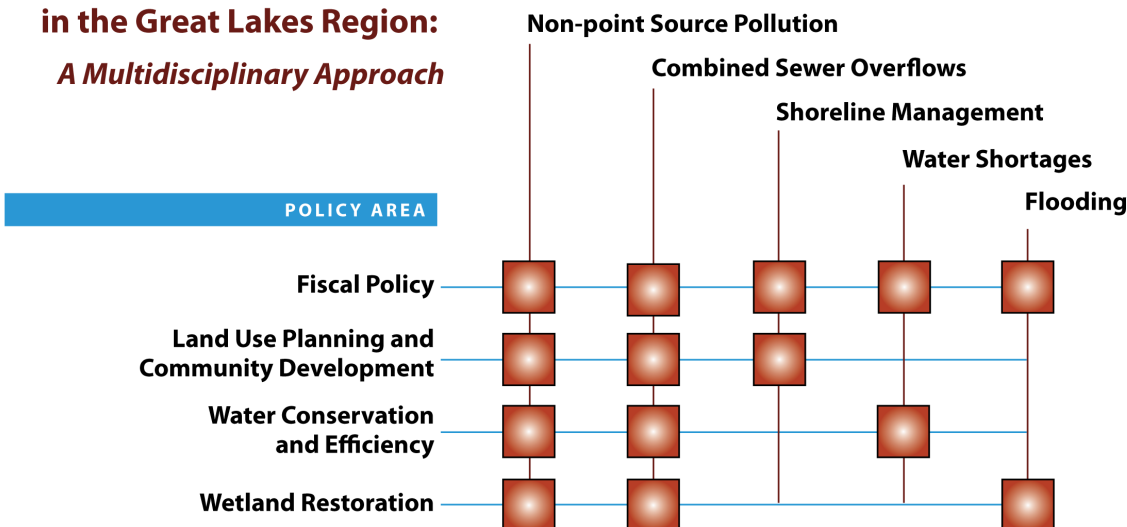
Implementation approaches

There are many ways to approach developing new policies and revising existing ones, as well as a range of scales for implementation. Participants in the workshop agreed generally that policies that enhance integrated watershed management efforts are likely to be the most effective way to adapt to the impacts of climate change. Integrated watershed management will restore ecosystem resiliency in the near term, and build adaptive capacity in the longer term. New and revised policies can help by removing regulatory and financial barriers to building and supporting watershed-scale capacity.

Implementation of those policies can be aided by support for problem-driven integrated assessment, facilitated by neutral parties that engage stakeholders in connecting formal and traditional knowledge with problem definition and analysis of solution options.

Adapting to Climate Change in the Great Lakes Region: A Multidisciplinary Approach

WATER RESOURCE ISSUES IDENTIFIED AT WORKSHOP



The projected impacts of climate change will exacerbate existing water resource issues, as well as create new ones. Addressing these issues will become more urgent than ever, and will require a multidisciplinary approach.