Institute for Environmental Diplomacy & Security @ the University of Vermont

# Case Study: Managing Fishing Quotas Between Canada and the United States

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*This case study tells the story of inter-boundary natural resource management in the Lake Erie (Canada-United States) region facilitated by the Great Lakes Fishery Commission. As an advisor, you have been called upon to propose mechanisms for building adaptive capacity.*

*Disclaimer: This case has been prepared as the basis for discussion and collective learning rather than to illustrate either effective or ineffective handling of an administrative situation.*

## The Author

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## Introduction

A walleye swims in the chilly waters of Lake Erie… blissfully unaware of the high expectations of her – to reproduce in abundance, to either choose to be small and succulent in the north or otherwise grow old and over 25 inches in the south, and to pass down her genes so that many human generations can enjoy her children…

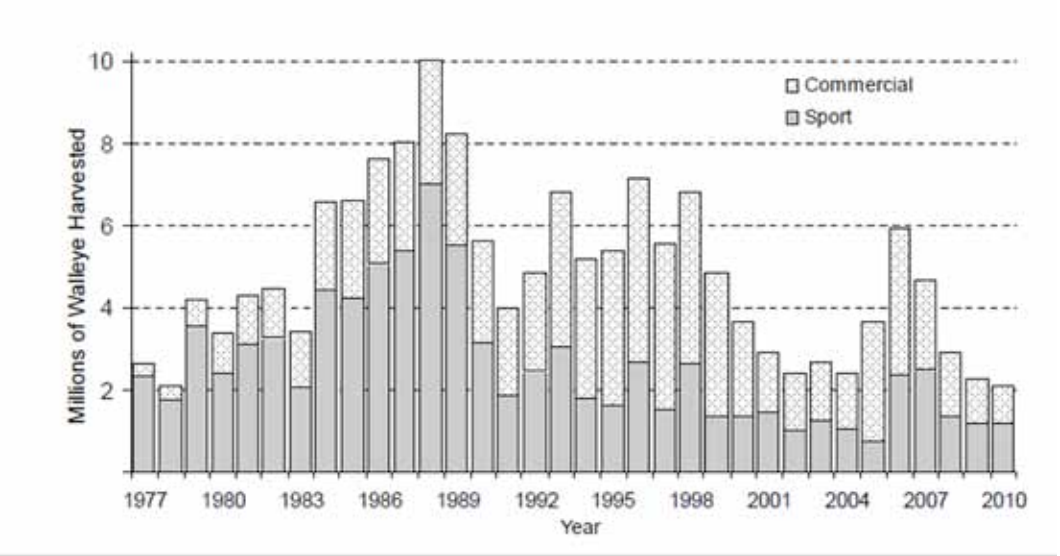
Peter M. shakes his head at this year's budget report. His Ontario-based company caught less than a million walleye this year. If they can't fill this order, they are going to lose this market, and it will be next to impossible to get it back. Peter wonders how he could talk the Province into raising the quota for next year…

Capt. U. pulls up to the dock in Ohio and motions his clients onto the boat. "This trip will be well worth the money," he says. With a twinkle in his eye and a gesture of his hands, he continues: "I know where you can catch a walleye this big." He hopes he can make good on his promise. Those damn Canadians have been catching too many fish while they are young, and it's been difficult getting one that is a decent size…

Roger K. looks over the numbers – last year's total annual catch around Lake Erie was 104% of the agreed upon goal. Roger oversees Ohio's Lake Erie fisheries program, but he can only go so far – his agency has no binding agreement to enforce…

## Background

The glory days of catching walleye (Sander vitreus) are over (Roseman et al, 2010). Some fishers regard 2003 as the last good year for walleye fishing and do not expect it to bounce back. However, agencies maintain that walleye remain economically viable in western waters (Roseman et al, 2010). Walleye have not reached a crisis point, defined as less than 15 million fish per year for three years or more. Walleye are a top-predator species, but they are also preyed upon by the invasive sea lamprey (Petromyzon marinus). Depending on who you talk to, walleye are either compromised by non-point source pollution or they do not get enough nutrients due to strict pollution regulations. In this case study, the walleye represent a natural resource that is managed across political boundaries. In the US, wildlife recreation is a $122.3 billion industry (2006), representing 1% of the GDP. Lake Erie is the most popular of the Great Lakes for anglers, and walleye is the most popular sport fish in all of the Great Lakes (US National Survey, 2006).

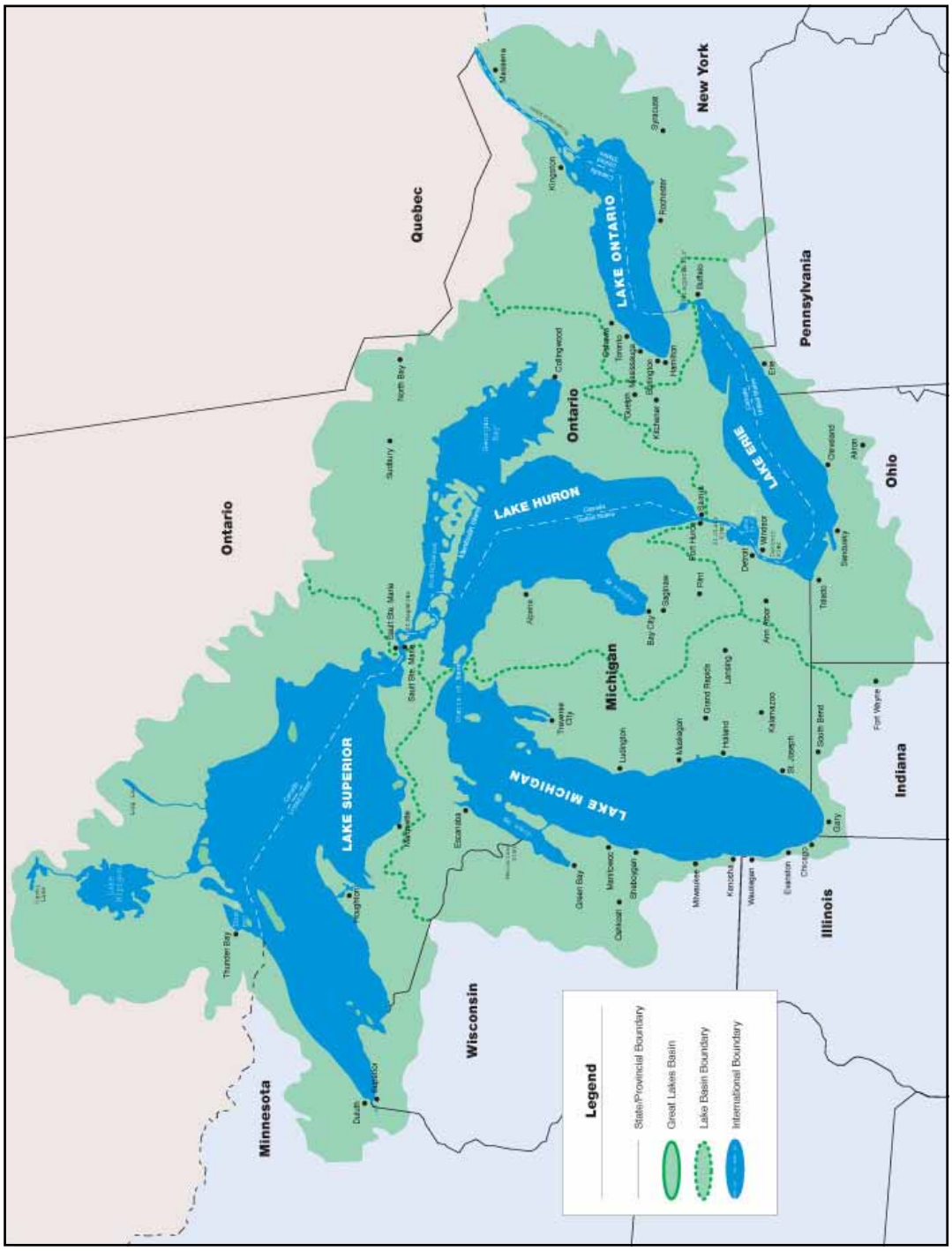



*Lake-wide harvest of Lake Erie walleye by sport and commercial fisheries 1977-2010 Lake Erie Walleye Task Group, 2011).*

### *History And Multijurisdictional Governance*

The 1783 Treaty of Peace between the United States and Great Britain (which controlled Canada) formally designated the international boundary between the two countries. The line cut directly through four of the five Great Lakes (Lake Michigan is the only lake whose shores lie wholly within the US). US states consider their borders to extend to this line, meaning that international waters do not exist in the basin. Because of this, states could assert their rights over federal authority for many years. In the United States, the 1970 acts, such as the Clean Water Act and the Endangered Species Act, etc. eroded state exclusivity. Today, the entities that have a role in fishery management in the North American Great Lakes are the sometimes overlapping authorities of the Province of Ontario, eight US states, Native American (relatively strong) and Aboriginal First Nation (limited) tribes, and the federal agencies in Canada and the United States.

Historically, fishery management was inconsistent. But when sea lamprey appeared in the Lakes in the 1920s-30s and nearly wiped out the lake trout harvest, the governing bodies recognized that a bi-national fishery managing authority was needed. Thus, the Convention on Great Lakes Fisheries was signed between the US and Canada in 1954, granting limited responsibility to a Great Lakes Fishery Commission (GLFC). Many committees manage specific technical issues, including the Lake Erie Committee (LEC), the main actor in this study. The GLFC coordinates activities between the Canadian federal agencies (for example, Fisheries and Oceans), Canadian Province agencies (Ontario Ministry of Natural Resources), US federal agencies (Army Corps of Engineers, Department of State, US Fish and Wildlife Service, Geological Survey, National Oceans and Atmospheric Administration), US state departments (such as natural resource and environmental quality departments), and the Canadian and US tribes. Science was written into




*Map provided by the NOAA Seagrant Program.*

the Convention, and scientists came to take a center role in providing quality data on fish behavior and trends. In Ontario, commercial fishing for walleye is a major industry, and they tend to catch 95-100% of their quota each year – around 1 million walleye. On the US side, commercial fishing of walleye has declined to the point of being nearly non-existent (about 2000 fish per year). The key stakeholders in the US, then, are recreational anglers and the charter boat industry. The GLFC has come to be seen as an acceptable third party to facilitate cooperation between all of the stakeholders. According to their website, their role and responsibility is "To develop coordinated programs of research on the Great Lakes, and, on the basis of the findings, to recommend measures which will permit the maximum sustained productivity of stocks of fish of common concern; and to formulate and implement a program to eradicate or minimize sea lamprey populations in the Great Lakes." The GLFC has created several committees to manage specific committees, such as the Lake Erie Committee which is the subject of this study which itself has several Task Groups such as the Walleye Task Group made up of scientists who handle catch recommendations.

### *A Turning Point - Crisis Leads To Leadership*

Due to overexploitation by both countries, walleye collapsed in the 1960s. Increasing levels of mercury put further pressure on the species, and the US retreated from the commercial walleye business. The spirit of the 1970s environmentalist movement in the US and subsequent federal regulations led to renewed interest in conservation as well as fear of federal intrusion into state affairs. New funding resources became available for natural resource organization. Thus, the Joint Strategic Plan for Management of the Great Lakes Fisheries was signed in 1981. The Plan was meant to clarify roles and define process to manage the political complexity that is fishery management on the lakes, not to replace the authority of any jurisdiction. The express intent was to open communication pathways, to establish diplomatic relations, and to outline procedures in case of conflict. In 2004, the Plan was invoked to mediate a conflict on total allowable catch (TAC) quotas of walleye in Lake Erie.

### *A Case Of Mediation*

A series of low walleye harvests and declining walleye population put the Plan and the GLFC to the test. The US had never returned to the business of harvesting walleye for commercial business, even after the Lake recovered substantially in the 80s. Instead, they turned walleye into a recreational and tourist industry (one Ohio city even has a festival dedicated to the fish). Their interests began to diverge from the Canadian management which still regarded commercial walleye as a profitable enterprise. In Canada, stakeholders were powerful and organized corporations seeking less regulation overall.

In 2003, the fisheries managers in the US and Canada met to formulate the next year's TAC (total allowable catch) for walleye. The lead Canadian manager was new to the process, having replaced someone with a heavy science background. Under the consensus-based procedure outlined in the Plan the fishery management authorities agreed based on their in-house Walleye Task Group recommendations that the Total Allowable Catch (TAC) quotas for 2004 would be below 3.4 million fish. This represented a 40-60% cut from the 2001-2003 annual TAC. The officials agreed, shook hands, and took their decision to their constituents. They planned another meeting in June 2003 to decide on action steps to meet the new requirements.

Commercial fisheries can put new standards into effect immediately, but governments need a year lead time to change license requirements. This gave the commercial fisheries to calculate the difference and organize a response. By the time the officials met again in June, the Ontario side announced that they would cut 20% instead of the agreed upon 40-60%. The Canadian authorities admitted that they had changed their minds because they felt pressure from the commercial entities- the companies reinterpreted the data as too conservative and presented their own numbers. The US officials were confused about why the Canadians did not contact the Committee first to discuss the issue, and said so. They accused the Canadians of going behind their back and breaking consensus. The US felt the GLFC science was sound and did not need to be revisited. Canada felt that the US was being inflexible in the face of new information. Trust between the various agencies collapsed.

Luckily, dispute provisions were outlined in the Joint Plan. The Plan is non-binding, and the GLFC has no authority or mechanism to punish offenders – it can only rely on consensus. So, the GLFC set out to mediate the situation and repair bonds. The GLFC called for a conflict resolution meeting in which each side was permitted to debate the issue. In essence, they were facilitating the development of working relationships within the LEC with the Joint Strategic Plan serving as common ground. The compromise was not between managers and the commercial fishery, it was among LEC representatives. The agenda was to develop trust in working relationships is critical to implement agreements, especially non-binding agreements. In the end, the Committee compromised on a 30% cut. It was announced publicly at the next regularly scheduled meeting.

The commercial fisheries in Ontario appealed the decision in court, arguing that the Lake Erie Committee process did not respect the Province's rights. While the judge recommended improvements in the Lake Erie Committee, particularly to make their data available to the industry, he ruled in favor of the decision to implement the 30% reduction in TAC. Since then, the Ontario commercial fisheries have relied on the strategy of suing the Committee when they disagree, but they have never won a case. The failure of commercial fisheries to persuade the courts to rule on their side implies support from the Provincial government, and this has

ultimately strengthened the authority of Canadian officials while confirming the value of consensus in the LEC process.

### *Moving Forward – Governing The Commons Through Scenario Planning*

The 2004 TAC conflict proved to be a defining moment for the Lake Erie Committee. Today, the LEC is moving forward to not just prevent future breakdowns in consensus, but to take steps to include all stakeholders in fishery management governance. Actually, the LEC is seeking a more formal role for all stakeholders in quota decisions, not governance per se, which is bound by statutes that differ among agencies. Stakeholders have always been able to make recommendations for the LEC to consider when setting quotas. This new effort formalizes this process, ensuring more explicit involvement in understanding the scientific uncertainties, potential policies and outcomes, when making their recommendations.

The primary strategy that the LEC uses is through workshops facilitated by a third party from Michigan State University. Experts at Michigan are developing computer simulations to model fish behavior under different policy scenarios for quantitative decision making analysis. Science is brought in to the decision making process in effort to reduce uncertainty around issues like fish recruitment, stock size and structure, future prey fish effects on production, by-catch and species interactions, economic consequences of management actions, stock movements, the relationship of recreational effort to catch rates, and the effects of various habitat factors, including wind farms, dredge disposal, and contaminants. LEC, along with the professors at Michigan State, have based their scenario planning format on Peterman and Anderson's Decision Analysis and the "FishSmart" process used in Chesapeake Bay to manage king mackerel.

These scenarios are then presented at stakeholder workshops with participants chosen from various sectors- commercial fishing, sport fishing, and charter boat representatives. The first meeting was held in Ontario and the second was held in Pennsylvania to emphasize their commitment to both sides of the Lake. An example would be to imagine a resolution such as setting minimum size limits for recreational fishing. Stakeholders would rank their feelings on a scale of 4 for acceptable, 3 for minor reservations, 2 for major reservations, and 1 for unacceptable. The participants would then be able to talk out their perspectives. In the minimum size limits example, stakeholders might raise concerns about the mercury levels in larger fish, what this might mean for commercial fishing, if this violates any federal laws, and if this resolution would be effective in avoiding the overfishing threshold. After this discussion, the resolution would be taken to a vote. They might do this for 3-4 different management strategies.

This process has been effective in helping stakeholders understand what it takes to craft policy options amidst competing interests (Miller, et al, 2010). In similar kinds of processes, participants have become advocates for new data collection proce-

dures and take ownership by volunteering data that they have collected (Miller, et al, 2010). Often, they become cautious proponents of the scenario planning process- cautious because it is still a very new idea and models always present uncertainties, but proponents, because it has worked so far. The hope is that this process will be effective in building adaptive capacity to deal with the continuing climatic, social and biophysical changes on the Lake.

## Key Interviews

1. Chris Goddard, Executive Secretary of the GLFC.
2. Marc Gaden, Communications Director and Legislative Liaison of the GLFC.
3. Roger Knight, Lake Erie Fisheries Program Administrator, ODNR, Division of Wildlife.
4. Mike Jones, Professor and Chairperson, Dept of Fisheries and Wildlife and Co-Director, Quantitative Fisheries Center at Michigan State University.

## Acknowledgement

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