

**STAKEHOLDER & MANAGEMENT
AGENCY CONSULTATION**

**TOWARDS A FISHERIES ASSESSMENT
PLAN FOR THE ST. MARYS RIVER**

**ST. MARY RIVER FISHERIES TASK GROUP
LAKE HURON TECHNICAL COMMITTEE
GREAT LAKES FISHERY COMMISSION**

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&
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United States Geological Survey – Biological Resources Division

Resource Members

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ABSTRACT

The St. Marys River supports an extensive recreational fishery, equivalent to 36% of the sport fishery in all the Michigan waters of Lake Huron, as well as tribal subsistence and commercial fisheries (MDNR unpublished data). Past investigations have suggested native species like walleye, northern pike, and others exhibit high total annual mortality (Fielder and Waybrant 1998) while the status of others is largely unknown or dated. Stakeholders and agencies responsible for management of the fishery have expressed concerns about the health of these fisheries and the river's capability of supporting them. To date, research, assessment, and management initiatives for the river's fisheries resources have been in response to species specific questions, to a crisis in the fishery, or have occurred only intermittently. The lack of a regular, coordinated effort to assess and manage the fishery stems from the large geographic scale of the St. Marys River as well as the jurisdictional fragmentation among agencies on both sides of the international border. The St Marys River Fisheries Task Group began the process of developing a Fisheries Assessment Plan by consulting with local stakeholder groups and management agencies in both Ontario and Michigan. Both groups were asked to present their views on what concerns need to be addressed in order to maintain a sustainable fishery for all users. Stakeholders expressed concerns about: sport, commercial and subsistence harvest levels, negative impacts by exotic species, cormorants, human activities, habitat loss, the quality and safety of food fish, declines in aquatic insects, stocking, water quantity and quality, user conflicts, management, regulation and enforcement inconsistency and inadequate funding for fisheries management. Management agencies listed concerns including the need to ensure healthy sustainable fisheries and fish communities, maintenance of effective sea lamprey control, sustainable sport fisheries, contaminants in fish, negative impacts of exotic species including cormorants, aquatic habitat maintenance and protection, conflicting management objectives and harvest regulations, and user conflicts. The Task Group recognized that the outcome of this process would be identification of biological and resource use issues requiring assessment action and/or management action. The Task Group envisioned that part of its responsibility was to differentiate between assessment and management issues and report on concerns, which would benefit from an assessment plan that, supported future fisheries management decision making.

PREFACE

The St. Marys River Fisheries Task Group (SMRFTG) was established by the Lake Huron Committee (LHC) under the Lake Huron Technical Committee (LHTC) in 1997. The Task Group was charged to

“design and recommend a fisheries assessment and review program which will enhance our understanding of the St. Marys River fish community and associated habitats and the factors which may impact those populations”.

Additional charges from the LHC included consultation with stakeholders, facilitating interagency cooperation and recommending prioritized assessment and research projects to deal with current fishery concerns in the St. Marys River.

It was recognized early on that for the SMRFTG to proceed with these charges, the member agencies needed an agreed to vision for the St. Marys River that encompassed the diversity of interests and multiple use desires of all stakeholders. It was also important to identify fishery, habitat, and fish population goals that were common to agency representatives and stakeholders. The vision statement for the St. Marys River is that:

St. Marys River fishery resources should be capable of supporting sustainable harvest opportunities for diverse fisheries including recreational, subsistence, and limited commercial activities. Critical habitat within the river needs to be maintained and enhanced to maximize fish population growth and abundance.

In addition to the above charge and Vision Statement, the gathering of stakeholder input by the SMRFTG was guided by the two following tenets;

“People rely on the fisheries resource to satisfy different needs. They may fish for food or recreation, or both; they may derive their employment and income from fish; or they may simply wish to observe fish. There are people who recognize and value fish as a barometer of the health of the human environment. ..All of the people of Ontario [and Michigan] are shareholders in the fisheries resource..ownership carries with it the responsibility of careful stewardship”

Strategic Plan for Ontario’s Fisheries –SPOF II-

“The Commission shall encourage the rehabilitation and conservation of healthy aquatic ecosystems in the Great Lakes that provide sustainable benefits to society, contain predominately self-regulating fish communities, and support fisheries with increasing contributions of naturally reproducing fish. Conserving biological diversity through rehabilitation of native fish populations, species communities, and their habitats has a high priority.”

*Vision Statement on Healthy Ecosystems. Strategic Vision of the Great Lakes Fishery
Commission for the First Decade of the New Millennium*

Introduction

The SMRFTG recognized there were a number of different stakeholders with interests in the St. Marys River fisheries and its aquatic environment. These groups can be roughly partitioned into the various interests associated with fisheries. Broadly the groups represented tourism, marinas and charter boat businesses, municipalities, native and tribal interests, Metis peoples, property owners, angling and sportsmen's clubs, political representatives and environmental groups and coalitions. Appendix 1 lists the groups that were invited to participate in a common discussion for the identification of concerns for the river.

Meetings were held on February 24, 1999 and February 10, 2000. The first meeting was planned as an opportunity for the SMRFTG to introduce its members and its charge to the public. A descriptive SMRFTG pamphlet was distributed (Appendix 2), current fisheries assessment and management activities were presented followed by a general open discussion between Task Group members and stakeholders.

The second meeting was focused entirely upon identifying what stakeholders perceived as the most important issues affecting present day fisheries on the St. Marys River. The SMRFTG came away from this meeting with a detailed list of items that stakeholders were concerned about.

Following this meeting Task Group members were asked to consult with their respective agencies regarding concerns agencies had for present day fisheries. The SMRFTG received a second detailed list of items of concern.

Appendix 3 presents a summary of the concerns of both stakeholders and agencies.

Concerns and Stressors

Healthy fisheries are the products of environmental and societal factors that permit fish to complete critical life cycle events such as spawning and survival to maturity in sufficient numbers to ensure population sustainability. Stresses on individuals, populations, communities or ecosystems are defined by the Lake Superior Lakewide Management Plan (LaMP) 2000 (Lake Superior Binational Program 2000) as “any chemical, physical or biological entity that can induce adverse effects”. A stressor may interfere with habitat or life cycle events, the predator-prey balance, remove individual fish or impede reproduction such that future recruitment is destabilized or fails completely. Casual or anecdotal observation by biologists or lay people that something is wrong with a fishery or particular species rarely includes enough evidence to pin point the root cause or stressor. Instead a concern is voiced around a noted change in the environment or the fishery; fewer fish, small fish, low water, loss of spawning gravel, etc.

The objective of the review of stakeholder and agency concerns was to determine what immediate and observable adverse responses to stressors by fish populations are recognized in the St. Marys River.

Description and Discussion of Identified Concerns

Concern: Healthy Sustainable Fish Communities and Fisheries Supported by A Sustainable Aquatic Food Web

Healthy fish communities and sustainable fisheries were the primary concerns identified during discussions by stakeholders and Fisheries Management Agencies (FMAs). Stakeholders and FMAs cited concerns for native species such as walleye, yellow perch, lake herring, and northern pike. Naturalized rainbow trout, and non-native salmonines were identified as important contributors to the St. Marys River and Lake Huron fisheries. Stakeholders and FMAs alike desired fish communities that are stable, productive, and diverse.

Both groups noted the lack of knowledge about existing forage fish populations (food supply) that support the predator dominated fish communities in the St. Marys River. Fisheries management agencies pointed to the need to better understand the river's productive capacity by examination of forage fish species composition and abundance, and sampling of benthic macroinvertebrates and zooplankton. This included an expression of urgency to better understand the existing food web before inevitable invasions by round goby and Eurasian ruffe

Both groups identified a broad range of sub-issues that may interfere or detract from healthy sustainable fish communities and fisheries (Appendix 3). These included a need to ensure diverse and abundant native aquatic species, the exploitation of fisheries by various means, the harvesting of fish during spawning and migration, and the stocking of native and exotic fishes

Concern: Quantity and Quality of Aquatic Habitat to support sustainable fish communities.

Both FMAs and stakeholders identified the importance of abundant, high quality aquatic habitat as a key component of sustainable fish communities. The loss of habitat in the past, cumulative losses occurring presently and the need to secure and protect unaffected areas were all cited as concerns. Present concerns include maintenance of wetted surface area and water flow in the rapids, the effects of winter shipping activities on coastal wetlands, dredging and spoil deposition, shoreline development, and industrial and agricultural practices. Little has been done to restore or rehabilitate degraded or lost habitat in the river or in its tributaries.

Concern: Water Chemistry, Water Quality and Quantity.

Stakeholders were concerned with both water quality and quantity. They identified past contaminant introductions, which continue to persist in St. Marys River sediments, water quality when sediments are disturbed and current industrial and municipal discharges, which continue to find their way into the watershed. Road salt and wind born particulates from storage piles along the St. Marys River shoreline were noted as contaminants requiring regular monitoring for their effects on water quality. The capacity of environmental agencies to enforce existing regulations was questioned. Stakeholders observed that governments did not give sufficient priority to enforcement and monitoring of contaminant sources. FMAs acknowledged the water quality issues raised by stakeholders and added the need to monitor water chemistry for changes in nutrient levels and therefore primary productivity.

Water levels are a source of much contention within the St. Marys River. Fluctuations in water levels throughout the river are the result of controlled water release from hydroelectric generation (three stations), vessel lock operation (5 locks) and the 16 gate compensating works at the head of the rapids. The International Lake Superior Board of Control regulates water levels and flows for the International Joint Commission. Water release or retention is directed towards ensuring Lake Superior levels are maintained within its recorded historical range of stage without resulting in unduly high flows in the lower St. Marys or unduly low levels in Lake Superior (IJC 2001). Anglers and FMAs agree that water levels and flow rates in the rapids and lower river need to be reviewed with respect to their influence on spawning and fish production.

Concern: The introduction and spread of exotic species:

Stakeholders and FMAs expressed concern about invasive exotic and introduced organisms in the St. Marys River. Stakeholders and FMAs stated a desire to:

- ~~☒~~ Understand the impact of these organisms on the St. Marys River fish communities
- ~~☒~~ Develop measures to identify and exclude unwanted species
- ~~☒~~ Develop programs to monitor and perpetuate the abundance of desirable species.

Stakeholders and agency representatives identified sea lamprey control as a priority. The primary concern was ensuring continued financial commitment from Canada and the United States. Stakeholders were also concerned with the use of chemical lampricide and its effects on aquatic organisms in the St. Marys River.

Considerable concern was also expressed for the need to monitor the movement and control of recently introduced harmful exotic species presently found in Lakes Superior, Huron and Michigan that have or may move into the St. Marys River. These include Eurasian ruffe, round goby, zebra mussels and other exotic mollusks, and exotic plants such as Eurasian water milfoil and purple loosestrife.

Intentional introductions of non-native sport fish have resulted in the development of new seasonal fisheries. However, support for these fisheries at the expense of native trout and other species was mixed. Concern for their affect and possible eventual naturalization prompted requests for assessment of these populations.

With respect to cormorants, stakeholders all expressed a desire to have eradication or control programs specific to the St. Marys River implemented immediately. Fisheries management agencies preferred to first determine the extent of cormorant impact on fish communities and fisheries, before supporting changes to legislation that currently protects cormorants as a migratory bird in both Canada and the United States.

Concern: Contaminants in Food Fish.

The quality of fish for human consumption has been a societal concern for many decades. Stakeholders representing anglers and native communities stated concerns about the need to monitor food fish from the St. Marys River under a uniform protocol that reflected local consumption patterns. The sport fish consumption guidelines for Ontario and Michigan reflect different collection, analysis and interpretation standards that result in confusion and mistrust for consumers of fish from this border water.

Concern: Stakeholder Conflicts.

Conflicts between three fisheries stakeholder groups (native, tribal and subsistence, commercial, and recreational) with respect to allocation, exploitation, access to the various fisheries and the lack of knowledge of different fisheries practices within the St. Marys River were concerns identified by stakeholders and Task Group members.

Angling groups want to see the same regulations for tribal and First Nation fisheries as for themselves. Tribal and First Nation fishers want to protect and ensure that their rights would not be usurped. Commercial fishers did not participate in the meetings and discussion, but it can be assumed that they would not want to see an erosion of their harvest allocation for fish such as walleye, yellow perch and lake whitefish in designated commercial fishing areas immediately adjacent to the St. Marys River.

All stakeholders at the meeting expressed support for more dialogue, greater involvement in decision making processes and cooperative management actions where possible (e.g., harmonizing of sport regulations and subsistence regulations from both jurisdictions). The final point made by stakeholders was the need for increased and more visible enforcement for all fishing activities.

Concern: Management Agency Coordination and Management Compatibility.

Both stakeholders and Task Group members identified differing sport fishing regulations for common species between Michigan and Ontario as a major concern. It was recognized that these are a result of a lack of common management objectives resulting from a lack of a shared management plan. Harmonization of restrictions on species by season, catch and possession limits, size limits, and the number of lines per angler whether fishing from shore or by boat were identified.

Task Group members noted that there were four FMAs (Provincial, State, First Nation, and Tribal) managing fisheries resources within the St. Marys River. Cooperative assessment and management planning, program implementation and data sharing are needed to ensure that management actions by one agency respect and infringe as little as possible upon the needs and rights of other stakeholder groups supported by different FMAs. Stakeholders asked that they be part of this cooperative process and that greater communication between stakeholder groups be established. Stakeholders identified the need for improved funding of fisheries management programs commensurate with the high value of the fishery to stakeholders. Maintenance of the St. Marys rapids and its fishery was identified as an area of particular concern to anglers from both jurisdictions.

Prioritization of Stressors and Concerns

The SMRFTG reviewed the concerns identified by stakeholders and agencies and (Appendix 3) and discovered that individual concerns listed by both groups often had enough commonality to permit the identification of a general broadly based concern that if remedied would address these more specific concerns. The Task Group reviewed these broader concerns and discussed what priority should be afforded each one. The broader concerns associated with needed fisheries assessment in order of priority include the need for:

- ~~///~~ Healthy sustainable fish communities and fisheries supported by a sustainable aquatic food web
- ~~///~~ The quantity and quality of aquatic habitat to support sustainable fish communities
- ~~///~~ Water chemistry and water quantity and quality
- ~~///~~ The introduction and spread of exotic species
- ~~///~~ Contaminants in food fish.

During the consultation process, both agencies and stakeholders also cited concerns related to the management of a common resource. These were grouped under broad concerns (Appendix 3) related to:

- ~~///~~ Stakeholder conflicts
- ~~///~~ Management agency coordination and management compatibility

Summary

Stakeholders expressed concerns about: sport, commercial and subsistence harvest levels, negative impacts by exotic species and cormorants, human activities and habitat loss, the quality and safety of food fish, declines in aquatic insects, stocking, water quantity and quality, user conflicts, management, regulation and enforcement inconsistency and inadequate funding for fisheries management. Management agencies listed concerns including the need to ensure healthy sustainable fisheries and fish communities, maintenance of effective sea lamprey control, sustainable sport fisheries, contaminants in fish, negative impacts of exotic species including cormorants, aquatic habitat maintenance and protection, conflicting management objectives and harvest regulations, and user conflicts.

The Task Group recognized that the outcome of this process would be identification of biological and resource use issues requiring assessment action and/or management action. The Task Group envisioned that part of its responsibility was to differentiate between assessment and management issues and report on concerns which would benefit from an assessment plan that supported future fisheries management decision making.

This document is a record of the public review process that was undertaken to assist in the preparation of a comprehensive fisheries assessment plan for the St. Marys River. The St. Mary River Fisheries Assessment Plan (in press) reviews historical and current perspectives, outlines past assessment and management activities, existing fish population characteristics and information needs. The Plan provides a detailed outline of proposed assessment action to be undertaken by fisheries management agencies. Collaboration and co-operation, where possible, are encouraged. Implementation of the Plan will be through the Lake Huron Committee of the Great Lakes Fishery Commission.

Literature Cited

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Appendix 1. Stakeholders groups consulted for identification of fisheries concerns on the St. Marys River.

Stakeholder Group	Origin
Algoma-Kinniwabi Travel Association	Ontario
Batchewana First Nation	Ontario
Bay Mills Conservation Committee	Michigan
Community of Hilton Beach	Ontario
Detour Hunt and Fish Club	Michigan
Drummond Island Sportsmen' s Club	Michigan
Eastern U.P. Charters	Michigan
Echo Bay Councilor,	Ontario
Echo Lake Landowners Council	Ontario
Federal Member of Parliament, Algoma	Ontario
Federal Member of Parliament, Sault Ste. Marie	Ontario
Fishing Charter business	Michigan
Fishing Charter business	Michigan
Garden River First Nation	Ontario
Hilton Township	Ontario
Island Queen Charters	Michigan
Jocelyn Township	Ontario
Laird Township	Ontario
Metis Nation of Ontario	Ontario
Michigan State Representative	Michigan
Munuscong Raber Bay Association	Michigan
Munuscong River Watershed Association	Michigan
Ontario Metis Aboriginal Association	Ontario
Property Owners Coalition	Ontario
Provincial Member of Legislature, Sault Ste. Marie	Ontario
Sault & District Angers Association	Ontario
Sault Area Sportsmen' s Club	Michigan
Sault Association of Fly Anglers	Ontario
Sault Naturalists	Ontario/ Michigan
Sault Tribe Conservation Committee	Michigan
Secr. -Treasurer Thessalon Rod & Gun Club	Ontario
Sport Fishing Development	Ontario
St. Joseph Island Hunters and Anglers Club	Ontario
St. Joseph Township	Ontario
St. Marys River BPAC	Ontario/ Michigan
St. Marys River Sportsmen' s Club	Michigan
Tarbutt and Tarbutt Additional Township	Ontario
Thessalon First Nation	Ontario

Township of MacDonald, Meredith and Aberdeen Additional
Whiskey Bay Resort and Marina

Ontario
Ontario

Appendix 2

St. Marys Fisheries Task Group pamphlet

ST. MARYS RIVER FISHERIES TASK GROUP



Established with the support of the Lake Huron Committee, Great Lakes Fishery Commission

The St. Marys River is recognized as an ecological treasure shared by multiple nations and user groups. The river is home to diverse fishery resources and habitats. Because the St. Marys River falls under the jurisdiction of so many different agencies and authorities, cooperation is the only way to achieve a meaningful understanding and a joint strategy for enhancing and maximizing its fisheries resources. With the support of the Lake Huron Committee, fisheries management agencies have come together as the St. Marys River Fisheries Task Group to

“design and recommend a fisheries assessment and review program which will enhance our understanding of the St. Marys River fish community and associated habitats and the factors which may impact those populations” .

The program will identify information and assessment needs and strategies for cooperation in data collection. It is important the public understand the role of the Task Group is not to manage or regulate these fisheries, but to identify data needs and develop an assessment plan that will give resource management agencies the information they need to work towards sustainable fisheries.

St. Marys River Fishery Task Group

Agency Members:

- ?? Michigan Department of Natural Resources
- ?? Ontario Ministry of Natural Resources
- ?? Chippewa Ottawa Resource Authority
- ?? Batchewana First Nation
- ?? Garden River First Nation
- ?? United States Geological Survey - Biological Resources Division
- ?? United States Fish & Wildlife Service
- ?? Department of Fisheries and Ocean Canada - Sea Lamprey Control Program

Resource members:

- ?? Sault College of Applied Arts and Technology, Ontario
- ?? Lake Superior State University-Aquatic Research Laboratory, Michigan
- ?? Department of Fisheries and Oceans Canada - Great Lakes Lab for Fisheries and Aquatic Sciences
- ?? Anishinabek/Ontario Fisheries Resource Centre

The Michigan Dept. of Natural Resources (MDNR) Fisheries Division of the MDNR is charged with environmental management of public waters. It works to (1) protect the environment and specific habitats that support a diverse fish community in our waters (2) rehabilitate degraded habitats such that they can again support those fish communities and (3) provide as many diverse, quality fishing experiences as possible for the angling public. MDNR has conducted several St. Marys River netting surveys, studied lake herring, shoreline erosion from commercial boat traffic, and stocked over a million walleye fingerlings. In addition, it recently tagged 2,750 walleyes to determine migration patterns.

Ontario Ministry of Natural Resources (OMNR) is responsible for the sustainable

development of natural resources. OMNR provides leadership and direction in the management of Ontario's fisheries resources. OMNR is locally represented by the Upper Great Lakes Management Unit (UGLMU) for management of fisheries on Lakes Huron, Superior and the St. Marys River. UGLMU has partnered with the MDNR on fish population studies of the St. Marys River and the tagging of walleye to determine migration patterns.

The Fishery Division of the Bay Mills Indian Community Biological Services Program is responsible for coordinating and conducting fishery research and assessment in the 1836 Treaty ceded waters of the Great Lakes. The Tribe actively participates in cooperative inter-agency / governmental fishery projects, is a member of the Chippewa/Ottawa Treaty Fishery Management Authority and Great Lakes Indian Fish and Wildlife Commission, and participates in activities sponsored by the Great Lakes Fishery Commission (GLFC). Recent activities include spring lake trout assessment, walleye radio telemetry and yellow perch assessment in the upper river.

Chippewa/Ottawa Resource Authority (CORA) works to insure the conservation and wise utilization of the Great Lakes fishery resource reserved by the 1836 Treaty. Three tribes party to the treaty are the Sault Ste. Marie Tribe of Chippewa Indians, the Bay Mills Indian Community, and the Grand Traverse Band of Ottawa and Chippewa Indians. CORA participates in annual walleye stocking, has conducted fall electro-shocking for an index of perch walleye, pike and bass and monitors subsistence and commercial fish harvests.

The U.S. Fish and Wildlife Service (USFWS) works with others, to conserve,

protect and enhance fish and wildlife and their habitats for the continuing benefit of the American people. The Service's goals focus on (1) sustainability of fish and wildlife populations, (2) habitat conservation and (3) public understanding and participate in the conservation and use of fish and wildlife resources. The USFWS and its sister agent Dept. of Fisheries and Oceans Canada Sea Lamprey Control Centre are responsible for sea lamprey control and are presently conducting a sea lamprey control and assessment program in the St. Marys River.

US Geological Survey-Biological Resources Division (BRD) works with other agencies to provide the scientific understanding and technologies needed to support sound management and conservation of biological resources. The BRD is a cooperator with the GLFC and does sea lamprey research on lampricide control, ecology, and assessment techniques and on new alternatives to chemical control. BRD works with U.S. and Canadian agencies to provide information of concern on fisheries populations, aquatic habitat quality and restoration, and impacts of exotic species.

The Department of Fisheries and Oceans Sea Lamprey Control Centre (SLC) is the GLFC's Canadian Agent, responsible for the management of sea lamprey populations in the Canadian portion of the Great Lakes. In conjunction with its sister Agent, the USFWS, the Centre employs control measures on sea lamprey producing tributaries and conducts assessment and research activities on larval and adult sea lamprey populations. SLC and the USFWS are presently conducting a sea lamprey control and assessment program in the St. Marys River.

Resource members

The Lake Superior State University Aquatic Research Laboratory, a cooperative venture between Wisconsin Electric Company and the MDNR, raises and stocks Atlantic salmon into the St. Marys River, assists in monitoring sea lamprey populations and is involved in several other individual and joint aquatic research projects. LSSU students staff the lab almost exclusively.

Anishinabek/Ontario Fisheries Resource Centre (A/OFRC) established in 1995 serves as an independent source of information on fisheries conservation and management in traditional harvesting areas of the Anishinabek Territory. The A/OFRC is a not for profit corporation. The roles of the Centre are to report on stock status, evaluate stresses on fish populations and habitats, promote the use of state of the art science and technology, and provide a forum for information sharing and participation with stakeholders.

Sault College -School of Natural Resources includes a number of fisheries and related courses in its Fish & Wildlife and Integrated Resource Management Technology Programs. As part of the training plan, students do field placements at fisheries organizations and hatcheries and as a result, complete a number of technical projects. Other field activities have included investigations for Garden River First Nation and COTFMA. The School is also involved in a collaborative project in lake habitat manipulation with the Department of Fisheries and Oceans (Canada).

St. Marys River Fish Harvest Survey 1999

Where: The entire St. Marys River from Whitefish Bay, Lake Superior to Detour Passage, Lake Huron and around St.

Joseph Island including Potagannissing Bay.

When: May to October 1999 for the open water and January to March 2000 for the ice fishery

Why: To estimate the total harvest of fish from all sources by species, area and season.

How: Creel clerks will interview anglers who have completed their fishing trip at predetermined river access points such as boat launches, marinas and tourist camps. There will be three clerks assigned to Ontario and three to Michigan. The clerks will ask anglers questions to determine, time spent fishing, method of fishing, fish caught and released, species sought and angler origin. The Michigan tribes and Ontario First Nations will interview their community fishers for similar details.

The St. Marys River rapids will be given special attention.

Aerial flights will be conducted to estimate the number of boats with anglers.

Appendix 3

Table 3.1: Summary of Concerns Identified by both Stakeholders and Fisheries Management Agencies.

Broad Concern	Specific Concerns
Healthy sustainable fish communities and fisheries supported by a sustainable aquatic food web	
	<ul style="list-style-type: none"> ?? sustainable native and exotic sport fisheries and forage fish populations ?? balance between predator and prey populations ?? fish extractions, including extractions during spawning ?? stocking of exotic and native species ?? native species richness ?? decline in macroinvertebrates
Quantity and quality of aquatic habitat to support sustainable fish communities	
	<ul style="list-style-type: none"> ?? habitat protection ?? habitat loss ?? habitat for native fish species ?? shipping and dredging effects on habitat
Water chemistry & water quantity and quality	
	<ul style="list-style-type: none"> ?? water quality ?? water quantity (levels) including rapids ?? water chemistry for aquatic productivity ?? wind blown particulates
Introduction and spread of exotic species	
	<ul style="list-style-type: none"> ?? sport fish mortality due to sea lamprey ?? maintenance of sea lamprey control program ?? use of chemicals to control sea lamprey ?? harmful exotic invaders ?? intentional introductions, effects on native species ?? cormorants
Contaminants in food fish	
	<ul style="list-style-type: none"> ?? consumption of contaminants via eating fish ?? quality of food fish for subsistence fishers
Stakeholder conflicts	
	<ul style="list-style-type: none"> ?? user conflicts created by different agency management goals ?? allocation of fish harvest ?? enforcement

Appendix 3

Table 3.1: Summary of Concerns Identified by both Stakeholders and Fisheries Management Agencies.

Broad Concern	Specific Concerns
	?? allocation of sport fish to non-natives ?? communication between user groups
Management Agency Coordination and Management Compatibility (conflicting management actions directed at common fish stocks)	
	?? regulations (conflicting, result in inequitable harvest by different fisheries) ?? adequate funding for fisheries management ?? commercial exploitation ?? political interference in fisheries management ?? management of the St. Marys rapids fishery ?? subsistence fishery extractions

Appendix 3

Table 3.2: Summary of concerns identified by Stakeholders

Concern	Discussion Points
Exotic species	<ul style="list-style-type: none"> ?? Concern for present and future ?? No controls on introduction opportunities ?? Need to recognize needs between intentional introductions and nuisance species ?? What is impact of intentionally stocked species on fish community?
Exotic species stocking	<ul style="list-style-type: none"> ?? Do/should these species have a place in a ‘ Vision’ for the St. Marys River?
Cormorants	<ul style="list-style-type: none"> ?? Interaction with fish community is very complex ?? Have a negative impact on fish populations (smallmouth bass & yellow perch) ?? Problem is more severe than OMNR realizes ?? Control or complete eradication is needed ?? Governments in both jurisdictions should pursue legislation to control cormorants (a bill is presently before the U.S. House Committee on Resources)
Quality of food fish for consumption	<ul style="list-style-type: none"> ?? Concern for level of contaminants in fish
Harvest of fish during spawning	<ul style="list-style-type: none"> ?? Yellow perch , rainbow trout, lake whitefish ?? All sources of harvest are a concern
Chemical control of lamprey (lampricide)	<ul style="list-style-type: none"> ?? Impact on aquatic community (by kill) ?? Sea lamprey remain a concern, new control efforts in St. Marys R. have produced optimism
Sport Harvest	<ul style="list-style-type: none"> ?? Two sets of regulations for sport harvest ?? Harvest of sport fish also governed by 4 or 5 jurisdictions (Province, State, Tribal, and First Nation) ?? Ontario and Michigan daily catch, size, and possession limits should be same for each species
Ontario walleye regulations	<ul style="list-style-type: none"> ?? Anglers do not support the new walleye regulations implemented in August 1998. ?? Ontario regulations favour American anglers and boat anglers and discriminate against shore anglers
Water levels in Rapids	<ul style="list-style-type: none"> ?? Need to fine tune flow inside the fisheries remedial berm ?? The natural flushing action of rapids inside berm has been restrained ?? Habitat quality and quantity could be improved ?? Been a decline in brook trout

Appendix 3

Table 3.2: Summary of concerns identified by Stakeholders

Concern	Discussion Points
Water levels in river	?? Fluctuations influence spawning and year class production
Shipping	?? Movement compounds the effects of low water on littoral habitat and shoreline damage ?? Interfere with spawning herring ?? Loss & disruption of nursery areas
Decline in abundance of aquatic insects (mayflies and caddisflies)	?? Noticeable below Sugar Island Ferry ?? Dramatic in last 10 years ?? What is cause? Water and sediment quality, contaminants ?? Affects on fishery as a food source
Wind Blown Particulates	?? Pollution from Algoma Steel Slag piles
Dredging	?? USACOE maintenance activities ?? Spoil deposition sites and erosion ?? Contaminant re-suspension ?? Habitat loss
Stocking	?? Abundance of fish by species ?? Hatchery in Sault, Ontario is sitting unused ?? User conflicts in stocking locations and species
Rapids Fishery	?? Increasing number of anglers ?? Over harvest ?? Rainbow trout limit from 5 to 2 fish ?? Conservation limit in Ontario should not restrict angler from taking one of a species ?? Access from U.S. side needed
Subsistence Fishery (gill nets)	?? Need to have an understanding of size of harvest ?? Would like to see greater action by subsistence fishers to protect fish when spawning (e.g., netting rivers during spawning runs) ?? Need to have more communication between anglers and native fishers as to each groups conservation practices
Commercial fishery	?? Need to know the impact on fish population
Enforcement	?? Needed by all agencies ?? Poor enforcement presence at the rapids or along the shoreline
Water Quality	?? Concern for industrial and municipal discharge ?? Reduced enforcement and monitoring capability by Ontario Ministry of Environment is a concern ?? Road salt entering the river via snow melt from snow dumping areas adjacent to the river in Sault, Ontario

Appendix 3

Table 3.2: Summary of concerns identified by Stakeholders

Concern	Discussion Points
User conflicts	?? Need to come to terms with conflicts ?? A common vision is needed ?? Governments, user groups and various agencies need to work together to develop and accept a common vision ?? Aboriginal groups including Metis need to be included in decision making processes
Funding for fisheries management	?? Funding should be commensurate with the value of the fishery to stakeholders

Appendix 3

Table 3.3: Summary of concerns identified by Fisheries Management Agencies

Concern	Discussion Points
Native species richness	<p>?? Document and encourage healthy populations of all native species found in river including non-game fishes (threatened/endangered species, lake sturgeon, darters, etc.)</p> <p>?? Encourage healthy populations of aquatic invertebrates that provide a food source for the fishery (mayflies and caddisflies)</p>
Sea lamprey Production and Induced Mortality	<p>?? Control in the St. Marys River is critical to management of other fish species in the Great Lakes. Sea lamprey are a major source of total mortality of lake trout in most Great Lakes (70% in Lake Huron).</p>
Sport fish sustainability	<p>?? Sport fish (walleye, northern pike & yellow perch) maybe over exploited</p> <p>?? Regular joint assessment of populations, fishery and forage base are needed</p> <p>?? Regulations need harmonization</p> <p>?? Significance of St. Marys River for lake sturgeon needs to be determined Biology and habitat needs of muskellunge need to be investigated to establish appropriate harvest regs.</p> <p>?? Regular fishery monitoring is also recommended (creel and fish harvest surveys).</p>
	<p>?? An annual walleye tagging operation is recommended for building age specific mortality rate estimates.</p>
Exotic species introductions	<p>?? Particularly from the shipping industry.</p>
Sports-fishing Quota's	<p>?? <i>Identified, but no discussion</i></p>
Sustainable native fisheries	<p>?? Regular assessment of native species need to determine status</p> <p>?? A regular schedule of assessment activities is needed for key species monitoring</p>
Fish habitat	<p>?? Identify and protect existing habitat used by native species</p>
Habitat Loss	<p>?? Loss of historical habitat (dams, water levels, dredging, sedimentation, riparian development).</p> <p>?? Current habitat quality and quantity are not sufficient to support self-sustaining fish populations.</p>
Forage fish	<p>?? Examine forage fish species composition, abundance, or trends</p> <p>?? Provide a better understanding of the rivers productive</p>

Appendix 3

Table 3.3: Summary of concerns identified by Fisheries Management Agencies

Concern	Discussion Points
	<p>capacity.</p> <p>?? Benthic sampling for macroinvertebrates and some measurement of pelagic zooplankton</p>
Quality of food fish for.	?? consumption by subsistence fishers
Invasive exotic species	<p>?? A regular schedule of monitoring for new species is needed.</p> <p>?? Documentation of occurrence and spread</p> <p>?? Investigations to determine impact on native species need</p> <p>?? Public notification and prevention/control programs need to be developed</p>
Lamprey control	<p>?? Provide continued control and monitoring of the sea lamprey population in the St. Mary's River</p> <p>?? Monitor lamprey population effects on fish stocks</p>
Fish Consumption/ Contaminants	<p>?? Current fish advisories restrict consumption of some fish species.</p> <p>?? Consumption advisories are indicative of system health and inadequate regulation of industrial discharge.</p>
Sea Lamprey	?? Should continued to be monitoring and control by the USFWS, DFO, USGS,
Exotic species stocking.	?? <i>Identified, but no discussion</i>
Traditional (Natural) Habitat Depletion	?? <i>Identified, but no discussion</i>
Habitat protection	<p>?? Detailed inventory of habitat types and location to quantify, monitor, and protect significant habitats (coastal wetlands).</p> <p>?? An inventory of habitat (watershed wide) should be implemented and organized in a GIS format</p>
Exotic nuisance species	?? Provide education to prevent/deter spread of existing nuisance species and have plans in place to prevent their introduction (work with shipping and bait harvest industries, anglers)
Conflicting Fishery Regulations -	?? State, Provincial, Tribal, and First Nation Governments have differing fishery regulations.

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Table 3.3: Summary of concerns identified by Fisheries Management Agencies

Concern	Discussion Points
Exotic Species	?? Regular sampling is needed to monitor the expansion of these exotics and to quantify their impacts on the fish community. ?? Trawling is recommended for exotic species detection and monitoring. ?? Alewife sampling should be conducted to more fully quantify their abundance and seasonal occurrence.
User conflicts	?? Recognition of rights of Native fishers
Lamprey/ Foreign Species Invasions	?? <i>Identified, but no discussion</i>
Sea lamprey control	?? Ongoing control of lamprey in St. Marys is needed ?? All agencies need to ensure responsible agencies continue to receive the support need to do this
Cormorants	?? Address cormorant predation and public concern with potential legislation for control
Water chemistry	?? Reason to believe that primary productivity, driven by trends in nutrient levels, has declined in recent decades.
Political Interference in Management	?? <i>Identified, but no discussion</i>
Stable fish community support via Stable forage base	?? Regular monitoring of forage fish and invertebrate food base ?? Habitat needs of these species should be identified and protected
Shipping	?? Address habitat damage caused by shipping and affects of this damage on fish stocks in an effort to provide a plan of action to benefit the fishery
Fish habitat	?? Detailed inventory of habitat types and location would be desirable for helping to quantify, monitor, and protect significant habitats (coastal wetlands). ?? An inventory of habitat (watershed wide) should be implemented and organized in a GIS project.
Water quality	?? Work to curb/prevent pollution from all sources and in all forms (including particulate from slag and salt piles and re-suspension of contaminated sediments during dredging) ?? Increase enforcement regarding water quality issues
Fish harvest	?? Commercial, subsistence, & sport harvest from all areas of the river need to be regulated and enforced to protect fish stocks

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Table 3.3: Summary of concerns identified by Fisheries Management Agencies

Concern	Discussion Points
	(yellow perch, rainbow trout, and lake whitefish - including documentation of catch and coordinated regulations between countries and harvest source)
Fish extractions	<p>?? Harvest by all fisheries need to be examined for their contributing role in the total mortality of the target species.</p> <p>?? Goals and objectives need to be crafted for the fisheries (and fish populations) to ensure sustainable, healthy populations.</p> <p>?? Additional harvest regulations or modifications of existing regulations need to be formulated if necessary to achieve those goals.</p>
User conflicts	?? All management agencies need to work together to meet the needs of the fishery resources and user groups in the St. Mary's River
Water levels	?? Work to maintain adequate water levels to provide necessary habitat for spawning and nursery areas (particularly in the highly used rapids area)