LAKE NIPISSING

INTERIM FISHERIES MANAGEMENT PLAN

2007-2010

FINAL DRAFT

Approval Date:

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LAKE NIPISSING: Interim Fisheries Management Plan

2007-2010

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EXECUTIVE SUMMARY  

Introduction  
The 2007-2010 Interim Fisheries Management Plan will serve as a guide for the management of Lake Nipissing over the next four years. The plan is based on recommendations submitted during public consultation that occurred in 2004. Background information, pertaining to the state of the fisheries resource, was obtained from documents produced during the 2003 data review. The draft plan was presented to the public for comment, during open meetings held between Sept. 5-12, 2006. The final plan has incorporated these comments where appropriate.

Status of the Fishery  
Fisheries assessment data suggest that the adult walleye population remains in a stressed state. Other populations such as northern pike, yellow perch and smallmouth bass appear to be healthy and sustainable. Recent analysis suggests that the growth potential among muskellunge is significant, and that this fishery would be best managed as a trophy fishery. Little is known about the current state of the whitefish population, however they are still considered to be an “under-utilized” species. The lake sturgeon population is still in a state of recovery, and warrants additional monitoring.

Major Issues and Proposed Management Actions  
Several issues pertaining to the Lake Nipissing resource have been identified. These have been organized in order of priority by members of the planning team, and include the following:

Primary Issues  
- First Nations Fishery  
- Future Fisheries Assessment  
- Sport Fishery

Secondary Issues  
- Fish Habitat Protection, Monitoring and Improvement  
- Resource-Related Education  
- Non-Compliance with Fishing Regulations & Other Enforcement Issues
Tertiary Issues

- Walleye Stocking
- Lake Level Fluctuations
- Colonization by Double-Crested Cormorants
- Water Quality Degradation

Proposed management actions to address each issue are identified

Primary Issue: First Nations Fishery

Proposed Management Actions

- MNR will continue to seek accurate harvest reporting of the commercial walleye harvest by building stronger reporting relationships with the Nipissing First Nation fisheries department, in order to gain access to data pertaining to harvest among the commercial fisherman. Such a collaborative effort is critical to the sustainability of the fisheries resource.
- The Ministry of Natural Resources will continue to have an Aboriginal Communal Fishing Licence (ACFL) issued to Nipissing First Nation, which prevents gill net use during the spring spawning period. MNR will work with the NFN fisheries department to cooperatively implement this conservation measure, through diligent enforcement and compliance monitoring.
- The Ministry of Natural Resources will annually develop and implement an ACFL on Lake Nipissing, until such time as a cooperative and realistic agreement can be formalized with Nipissing First Nation. Such an agreement can and should be developed with the ACFL and Nipissing First Nations “Fisheries Laws” as the basis.
- A maximum harvest quota of 30,000kg has been established for the commercial fishery, based on assessment data and biological objectives for walleye. As such, this limit is reflected in the ACFL, which will guide MNR enforcement at this time.
- MNR will continue to work with Nipissing First Nation to establish consistency between both parties, as pertaining to commercial harvest quotas.
- MNR will conduct an immediate data analysis following annual FWIN and angler creel surveys, to determine whether or not some adjustment to the maximum harvest quota can be supported, without posing any risk to sustainability.
- Promote educational initiatives to be developed and implemented by the First Nations communities and Lake Nipissing Stewardship Council.
- MNR will support the establishment of viable fish markets for non-target fish species, as well as walleye.

Primary Issue: Future Fisheries Assessment

Proposed Management Actions

- The Ministry of Natural Resources must fulfill critical assessment needs on Lake Nipissing, as outlined in the formal assessment plan (2000-2009). This assessment plan should be reviewed and updated where possible, to reflect new insight/science. Such
efforts are essential to understanding the local populations, and making informed management decisions for the future.

- Continue to support the involvement of community based groups in the management of Lake Nipissing. Such groups provide valuable support for various monitoring and assessment projects on Lake Nipissing.

**Primary Issue: Sport Fishery**

*Proposed Management Actions*

- The year round protected slot limit (40-60cm) will remain for the life of the 2007-2010 management plan.
- Effective January 1, 2007 the regulatory boundary of Lake Nipissing will extend to incorporate the west arm (water west of Hwy. 64).
- MNR will continue to promote additional angling opportunities where possible.
- Effective January 1, 2007, a lengthened fall angling season has been recommended by MNR for most fish species in Lake Nipissing, with the exception of walleye and yellow perch. For species such as muskellunge, northern pike, smallmouth bass and whitefish, the season will shift from an October 15\textsuperscript{th} closure to November 30\textsuperscript{th}.
- Effective January 1, 2007, a lengthened winter angling season has been recommended by MNR. The closure date will shift from March 7\textsuperscript{th} to March 15\textsuperscript{th}.
- Assess the biological impacts of commercial ice huts on Lake Nipissing. This will be achieved by enhancing the existing winter creel survey to recognize commercial huts as such. In doing so, data pertaining specifically to commercial huts can readily be extracted, analyzed and compared to the non-commercial data.
- MNR will work with local stakeholder groups to develop various initiatives focused on the promotion of conservation fishing methods.

**Secondary Issue: Fish Habitat Protection, Monitoring and Improvement**

*Proposed Management Actions*

- MNR will continue to work with the Lake Nipissing Stewardship Council, and other partner groups, to develop and implement various habitat based initiatives. Such efforts should include:
  - Develop the capacity to complete the walleye/pike spawning inventories around Lake Nipissing.
  - Gain information pertaining to critical habitat locations for bass, muskellunge and lake sturgeon.
  - Implement an assessment project to insert radio tags into adult lake sturgeon, to determine critical habitat locations throughout the year.
  - A workshop focused on educating the public on habitat conservation, geared towards waterfront property owners. Outline measures which should be taken to avoid adverse impacts on shoreline habitat.
- MNR will continue to work with the Department of Fisheries and Oceans to obtain additional funds gathered from Fisheries Act infractions, and apply such funds to environmentally sound initiatives on Lake Nipissing.
Secondary Issue: Resource-Related Education

Proposed Management Actions

• The Ministry of Natural Resources will work cooperatively with the Lake Nipissing Stewardship Council, part of the Ontario Stewardship Program, to develop a comprehensive educational strategy. Ideally, such a workplan will lead to the creation of an educational unit, which will focus educational efforts on local schools and the broader public. Such initiatives should include workshops, seminars and school programs.

Secondary Issue: Non-compliance to Fishing Regulations & Other Enforcement Issues

Proposed Management Actions

• MNR will continue to review enforcement issues on an annual basis, to identify compliance needs and priorities where possible.
• MNR will continue to conduct enforcement blitzes at critical times of the year, in addition to delivering regular patrols.
• MNR will commit to conducting regular fall enforcement patrols on Lake Nipissing, to complement extended angling seasons.
• The North Bay MNR enforcement unit will plan to provide opportunities for several Nipissing First Nation members, who are graduates of natural resource management programs, to help them gain exposure to the MNR law enforcement program. This will include sponsorship for attendance at the Level One Enforcement course at a future date. This course is mandatory for any individual aspiring to become a Deputy or full time Conservation Officer.

Tertiary Issue: Walleye Stocking

Proposed Management Actions

• Produce a formal report on the effect of stocking on walleye year classes since 2001.
• Shift current experimental focus from fingerling stocking to other enhanced efforts:
  ➢ Eyed egg planting on barren spawning shoals to test the theory of imprinting by young walleye.

Tertiary Issue: Lake Level Fluctuations

Proposed Management Actions

• The Ministry of Natural Resources will continue to work as part of the Sturgeon River/Nipissing/French River (SNF) Water Management Group to continue a cooperative approach to water management.
• Priorities will include the maintenance of water levels to account for the balanced needs of the public and environment of Lake Nipissing.
**Tertiary Issue: Colonization by Double-Crested Cormorants**

*Proposed Management Actions*
- MNR will continue to conduct an annual assessment on Lake Nipissing to monitor the existing cormorant population.

**Tertiary Issue: Water Quality Degradation**

*Proposed Management Actions*
- MNR will support water quality monitoring through the Lake Nipissing Stewardship Council board of directors. Such efforts will be directed by the existing water quality subcommittee, which includes a representative of the Ministry of the Environment.
Lake Nipissing Interim Fisheries Management Plan 2007-2010

1.0 Background Information

1.1 Introduction

Typically, a fisheries management plan review occurs every 5-6 years for Lake Nipissing. All assessment data collected during that time are compiled and analyzed to produce an updated state of the resource picture for Lake Nipissing. This process also involves a review of all input and recommendations brought forward during formal public consultation sessions. The net result of this planning process is the preparation of a new fisheries management plan for Lake Nipissing, which is in effect for the next 5-6 year term.

This 2007-2010 interim fisheries management plan will serve as a formal guide for the management of Lake Nipissing over a 4-year period. Originally, the planning process was initiated in 2004, with the goal of implementing a 2005-2010 fisheries management plan. However, due to issues surrounding the management of the Nipissing First Nation commercial fishery, the production of the new management plan was suspended. To this point, Lake Nipissing has continued to operate under the existing 1999-2003 fisheries management plan. The Ministry of Natural Resources (MNR) recognizes the value of producing an updated management plan for Lake Nipissing, to serve as a guide for management efforts until 2010.

1.2 Planning Area

At the time of writing this plan, the planning area is recognized as Division 27 in the Ontario Recreational Fishing Regulations Summary (2005-2006). This includes all of Lake Nipissing, the waters of the upper French River upstream of the Chaudiere dams, the Sturgeon River upstream to the Sturgeon River dam, the South River upstream to Chapman’s Chutes, West Bay east of Highway #64, the Veuve River upstream to the chutes in Caldwell Township, and Northwest bay upstream to the falls on MacPherson Creek.

Effective January 1 2007, the waters of Lake Nipissing will no longer be designated as Fishing Division 27. Rather, Lake Nipissing will be classified as a “Specially Designated Water” within Fisheries Management Zone (FMZ) 11. As such, the main planning boundary will not change. However, a single significant change will be adopted, that being the incorporation of the West Arm, or West Bay west of Highway #64, into the Lake Nipissing planning area. Therefore, the 2007-2010 interim plan will incorporate this new area, from both a regulatory and management standpoint.
1.3 Data Sources

Information that has been used as the basis of this current Lake Nipissing Fisheries Management Plan includes the 2003 Lake Nipissing Data Review prepared by Richard Rowe. This includes a detailed *Lake Nipissing Walleye Data Review* completed on January 28, 2004. These reports have been subject to critical reviews and serve as essential background documents used to write this interim management plan.

Other past reports and documents have been referenced where appropriate, and are recognized in the bibliography found at the end of this document.

1.4 Public Input

The Lake Nipissing Stewardship Council (LNSC) is a non-profit charitable corporation formed in 1999. The guiding principle for this group is to preserve, protect, restore and improve the natural resources and environment of Lake Nipissing.

At the time of writing this plan, the business of this council is managed by a board of sixteen directors. The composition of the board is as follows:

- Ontario Ministry of Natural Resources (1)
- Nipissing First Nation Band Council (2)
- Dokis First Nation Band Council (2)
- Ontario Federation of Anglers and Hunters, Zone D (2)
- Almaguin-Nipissing Travel Association (1)
- West Nipissing Upper French Tourist Association (1)
- Lake Nipissing: Adjoining Municipalities (2)
- Lake Nipissing Partners in Conservation (2)
- Public-at-Large (2)
- Nipissing Environmental Watch (1)

In May 2004, two public meetings were held to obtain public input into the new management plan for Lake Nipissing. The Lake Nipissing Stewardship Council collected and summarized the public comment derived from the public meetings and written submissions into a set of recommendations, which were then submitted to the MNR. Several issues and recommendations, which have been addressed in this interim management plan, were brought forward at that time.

The document submitted by the LNSC, which presents the final recommendations made by the public, can be found in Appendix 1. Also, these recommendations appear throughout this planning document under the heading “Public Recommendations”.

A draft copy of the fisheries management plan was released to the public in September 2006 and presented at information sessions in Sturgeon Falls and North Bay. A notification on the Environmental Bill of Rights Registry was posted November 1st 2006. Public comment on the draft plan was received until November 30th. Public comments were
compiled and reviewed by the planning team on December 1st 2006, prior to formulating the final plan.

1.5 Key Focus and Objectives

The predominant theme within this management plan is the walleye fishery, and the various issues surrounding this resource. This fishery currently and historically supports greater than 90% of all fishing effort. This includes both an existing sport angling and First Nations commercial and subsistence fishery. Assessment data collected over the past 5 years suggest that the walleye population is still in need of enhanced protection, as was identified in the previous 1999-2003 management plan.

The goal of this management plan is to develop the means to ensure a healthy and sustainable walleye fishery, while accommodating the needs of all users where possible.

1.6 Format of Management Plan

This management plan has been divided into 5 key sections, and follows the format that was developed for the previous management plan:

2.0 BACKGROUND: THE WALLEYE FISHERY

Provides a brief state of the resource summary for walleye populations. Presents an overview of current stresses, population characteristics and management objectives.

3.0 BACKGROUND: OTHER SPORTFISH POPULATIONS

Provides a summary of the population status and management objectives for northern pike, muskellunge, yellow perch, smallmouth bass, lake whitefish and lake sturgeon.

4.0 SIGNIFICANT ISSUES AND MANAGEMENT ACTIONS

Presents the major issues derived from public consultation. The public recommendations to address each issue is provided, followed by an appropriate response by the management planning team. This team includes the following representatives:

Shaun Roberts- Large Lake Biologist, North Bay MNR (Plan Author/Coordinator)
Gerry Van Leeuwen- Enforcement Supervisor, North Bay MNR
Rick Calhoun- District Planner, North Bay MNR
Phil Hall- Lands and Waters Technical Specialist, North Bay MNR
Norm Dokis- Resource Liaison Officer, North Bay MNR
Amanda Brosseau- Communications Specialist, North Bay MNR
John Thornton- Chair, Lake Nipissing Stewardship Council
5.0 MANAGEMENT STRATEGIES

Strategies have been developed to address each major issue. Selected strategies will represent the anticipated work plan for the next four years (2007-2010).

6.0 FUNDING REQUIREMENTS FOR IMPLEMENTATION

Details surrounding funding requirements for the effective implementation of this management plan are outlined. These requirements are immediate and will be implemented over the 4-year life of this management plan.

2.0 WALLEYE

2.1 STATE OF THE RESOURCE

The sustainability of the Lake Nipissing walleye fishery has depended on the production of strong year classes to replenish its stocks on what appears to be a cyclical basis since monitoring of yearlings began in 1979 (Rowe, 2004). The production of these year classes is dependent on many known and unknown biotic and abiotic factors. Some of these include available forage, spawning substrate, weather during and after the spawn, water levels, climate, growing season, etc. Another critical factor that contributes to year class production is the presence of sufficient adult spawning fish in the population. Data collected from Fall Walleye Index Netting (FWIN) suggests that adult walleye biomass observed from 1998 to 2002 was sufficient to produce an abundance of offspring, which would continue to support relatively intensive fishing pressure (Rowe, 2004). In 2003, FWIN results suggested that there was a high probability that adult walleye biomass had declined to the minimum level capable of producing a strong year class. This spike in mortality was largely attributed to high winter angling pressure and a sharp increase in First Nations commercial harvest.

Assessment data collected from 1999-2002 suggested that a walleye harvest of approximately 66,000kg occurred annually. At this rate of harvest, the data also suggested that there were some positive responses noted among the population. Such responses included a reduction in mortality, increase in adult abundance, and overall harvest levels that were within sustainable limits.

In 2004, a document that outlined several recommendations for the future management of the Lake Nipissing walleye fishery was produced. Under ideal conditions, that is a healthy population, ideal growing conditions, etc., it is estimated that Lake Nipissing is capable of producing approximately 90,000kg of walleye annually (Rowe, 2004). However, given that the walleye fishery is currently in a stressed state, to manage at this level would not be sustainable. Given that the 1999-2002 data appeared to suggest positive growth among the population, a target yield that approximates the annual average during this period (~60,000kg), seems logical to meet management objectives at this time. This maximum
sustainable yield may be adjusted over time, depending on population responses that are observed over the next four years.

2.2 MANAGEMENT OBJECTIVES

For the most part, previous management objectives appeared to be effective in progressing towards a healthy walleye population. Such objectives included a reduction in angler harvest rates, adult mortality rates maintained below 40%, and monitoring of the existing First Nations commercial fishery. However, a setback was encountered in 2003 with the sharp decline in adult walleye abundance.

Advancements in fisheries science have provided managers with many new tools that can be used to diagnose and manage fish populations. Probabilistic simulation is one such tool that can provide an idea of how probable it is that a given walleye population is over or under a maximum sustainable yield (MSY) reference point (Rowe, 2004). Simply defined, MSY represents a level of harvest that should never be reached or exceeded, in order to maintain a sustainable fish population. All relevant assessment data and management tools, specific to walleye, have been used to identify appropriate walleye management objectives for the next 4 years. These management objectives include the following:

Population:
- To observe with 80% probability an exploitable walleye biomass above the MSY criterion by 2010
- To observe with 80% probability an exploitable female walleye mortality rate below the MSY criterion from 2007-2010
- To observe a statistically significant increase in adult walleye biomass by 2010 when compared to the 2003 estimate from FWIN
- To observe with 80% probability a total adult mortality (age 5 and older) as estimated by Robson & Chapman (2001) of no greater than 40% for each of the next 4 years

Walleye Harvest:
- Angling- To ensure that the total walleye angling harvest over the next 4 years does not significantly increase relative to the previous 6 years, to afford more protection to adult walleye in an effort to increase overall adult walleye biomass
- Nipissing First Nation Commercial Harvest- To actively manage this fishery with a defined harvest level that will lead to an overall increase of adult walleye biomass
- First Nation Subsistence Harvest- To ensure that any increase in First Nation subsistence harvest is accounted for when estimating the total annual walleye yield.
- Illegal Harvest- To ensure that there is no increase in illegal fish harvest over the next 4 years
- Overall Yield- To achieve a 90% probability that total yield values are below the MSY criterion over the next 4 years
3.0 OTHER SPORTFISH POPULATIONS

Information that has been collected and analyzed is outlined in the following sections, specific to species other than walleye. Where sufficient data is available, the status of each population is summarized.

3.1 Northern Pike

- **Population Status**

Assessment data collected to 2004 suggests that the northern pike population is healthy and sustainable. However, while the numbers are stable, these are slightly below numbers predicted by the amount of available habitat. This slight depression in abundance is actually expected, given the direct competition posed by a strong walleye population.

Northern pike were apparently subjected to overharvest in the 1980s (Jorgensen et al, 1995). Such a recurrence should be prevented with effective monitoring and management strategies. Growth rates among the existing population have consistently exceeded those predicted by available habitat, and as such, Lake Nipissing is realizing its potential to produce high quality “trophy-sized” fish.

- **Management Objectives**

  - To carefully monitor the pike population, in terms of angler harvest and abundance
  - To prevent an occurrence of overharvest
  - To promote a high quality fishery through protection of the larger individuals in the population.

3.2 Yellow Perch

- **Population Status**

Fisheries assessment data suggest that the yellow perch population is sustainable, with numbers stable to increasing. Mortality (death rate) has remained stable since 1998, and the proportion of catchable-sized perch (>20cm) has increased slightly. The majority of perch harvest still occurs during the winter season, however, harvest has been stable since 1987.

- **Management Objectives**

  - To monitor the perch population
  - To prevent the occurrence of an overharvest.
3.3 Smallmouth Bass

- **Population Status**

Data pertaining to the status of the smallmouth bass fishery is quite limited in many respects. More information is required to complete a full status report on this species. However, some valuable insight has been provided by data collected during angler tournaments that were run each year at the same time of year, providing trend-through-time fisheries assessment data. This information suggests that there is an abundance of large, older smallmouth bass in the population. These competitive angling tournaments have increased in recent years and may continue to provide some diagnostic information pertaining to the status of this fishery.

In 2001, a Nearshore Community Index Netting (NSCIN) survey was completed in Callander Bay. The data collected during this study suggested that Callander Bay has an above-average abundance of smallmouth bass at a size that is also above average, compared to a provincial database. Overall, evidence does suggest that the smallmouth bass population appears to be healthy; although there are some signs that exploitation has increased between 1994 and 2002 (slight rise in mortality, increase in numbers, slight decrease in size). However, all parameters are still well within the limits of sustainability.

- **Management Objectives**
  - To monitor the smallmouth bass population in Lake Nipissing
  - To promote and maintain a healthy smallmouth bass population.

3.4 Muskellunge

- **Population Status**

Assessment data specific to muskellunge is limited. A trapnetting study conducted in 2000 observed a number of very large fish in the catch, 46-54 inches in length and weighing 40 pounds and greater. This data suggests that Lake Nipissing has a high quality muskellunge fishery, from the perspective of producing large fish.

Muskellunge growth rates have been studied on an ongoing basis in an effort to give options for biologically based size limits that would help maintain large muskellunge in the population (Casselman, 2005). Based on the analysis completed to date, it appears to support the notion that Lake Nipissing is capable of producing very large fish, and therefore management objectives should attempt to address this in the future. Furthermore, this objective has gathered public support, as indicated during the public consultation process.
Management Objectives

- To monitor the muskellunge population
- To maintain a healthy population of large muskellunge in Lake Nipissing.

3.5 Lake Whitefish

Population Status

The status of the whitefish population in Lake Nipissing is largely unknown. Harvest levels remain very low, and these fish are currently not harvested commercially to much extent. As stated in previous reports, whitefish remains as an “under-utilized” species.

Management Objectives

- To monitor the whitefish population in Lake Nipissing
- To maintain a healthy whitefish population

3.6 Lake Sturgeon

Population Status

The lake sturgeon fishery on Lake Nipissing has been closed to both sport and commercial harvest since 1991. Since that time, efforts have been ongoing to assess the state of the remnant adult population, having been overexploited prior to 1991, and to gauge recovery of the species in the lake. These recovery efforts will continue so that information pertaining to the present health of this population can be diagnosed. It will inevitably take many years before the resident population can support any level of exploitation.

Management Objectives

- To continue to monitor the sturgeon population.

3.7 Other Species

Since 1999, FWIN data has shown an increasing trend in the number of White Bass that have been captured in nets. Catch per unit effort (CUE), or the number of fish caught per net, has been illustrated in the following graph (1999-2005).
Anecdotal reports suggest that the white bass fishery attracts the efforts of increasingly more anglers in the spring, who target these fish during the spawning period (May-June). Currently, the white bass is not considered to be a sought after gamefish among most local anglers. However, effort may increase in the future should this population occur more frequently in Lake Nipissing. Future studies are warranted in order to characterize this population.

➢ **Management Objectives**

To adopt the assessment techniques required to gain a better understanding of other fish communities in Lake Nipissing, in terms of health, population trends and biological attributes.

**4.0 SIGNIFICANT ISSUES AND MANAGEMENT ACTIONS**

A number of issues were brought forward during public consultation that occurred in May 2004. These have been organized in an order of priority by members of the planning team. Issues include the following:

**Primary Issues**

✓ First Nations Fishery  
✓ Future Fisheries Assessment  
✓ Sport Fishery

**Secondary Issues**

✓ Fish Habitat Protection, Monitoring and Improvement  
✓ Resource-Related Education  
✓ Non-Compliance with Fishing Regulations & Other Enforcement Issues
Tertiary Issues

✓ Walleye Stocking
✓ Lake Level Fluctuations
✓ Colonization by Double-Crested Cormorants
✓ Water Quality Degradation

In the following pages, each of the 10 issues that have been identified are dealt with in the following manner:

Issue
A brief description of the issue is provided.

Public Recommendations
Recommendations to address the issue brought forward on behalf of the public by the Lake Nipissing Stewardship Council.

Planning Team Response
An explanatory response to the public recommendations is provided by the planning team.

Proposed Management Actions
The proposed management actions to address the issue are presented.

It should be noted that some actions have been taken on certain issues prior to the completion of this management plan. Changes have been adopted after the expiration of the previous 1999-2003 fisheries management plan. These are acknowledged in the appropriate sections that follow. So, rather than being identified as “proposed” actions, these are simply “actions” that answer issues and objectives for this current interim plan.

4.1 Primary Issues

4.1.1 First Nations Fishery

The sustainable management of the fisheries resources in Lake Nipissing has traditionally been difficult for managers, as information pertaining to harvest levels by First Nations has been lacking. When combined, subsistence and commercial harvest by First Nations represents approximately half of the total annual harvest from Lake Nipissing. Harvest information was collected between 1995 and 1999, providing four complete years of harvest data. During this period, Nipissing First Nation reported an annual commercial catch by weight of approximately 22,685 kg. The estimated peak harvest level during this period was estimated to be 27,159 kg.

Since 1999, no annual harvest data has been received from Nipissing First Nation. This has presented serious management challenges.
In 2004 and 2005, the Ministry of Natural Resources developed a formalized licence for the commercial fishery on Lake Nipissing. An Aboriginal Communal Fishing Licence (ACFL) established regulations pertaining to harvest reporting, net marking, and harvest quota limitations. This licence was not accepted by Nipissing First Nation. However, in 2005, Nipissing First Nation developed their own set of “Fisheries Laws” which were intended to serve as a method of self-regulation for the commercial fishery. These two documents closely mirrored one another, with the only main difference being the proposed harvest quota limit. Both parties continue to operate separately under each guiding document. These potentially serve as the essential tools required to actively manage a successful and sustainable commercial fishery on Lake Nipissing. It is critical that the Ministry of Natural Resources and Nipissing First Nation work together to establish a single formalized agreement, forged from the existing ACFL and Fisheries Laws, to address concerns surrounding management of the “complete” fisheries resource in Lake Nipissing.

Public Recommendations

Recommendations that were submitted as a result of public consultation, as pertaining to the First Nations Fishery are as follows:

1. Investigate, review and address the possibility of the gill net moratorium during the spring walleye spawning period be continued on an annual basis
2. Continue to pursue an effective reporting structure of netting harvests
3. Continue to support and monitor First Nations fisheries efforts of self-regulation pertaining to harvest limitations
4. Continue to pursue a realistic quota system through the licensing of the First Nations commercial fishers
5. Pursue the adoption of a comprehensive native/non-native education program, to facilitate public awareness of First Nations’ Constitutional rights
6. Address the issue of non-utilized by-catch, being species other than walleye

Planning Team Response

*Investigate, review and address the possibility of the gill net moratorium during the spring walleye spawning period be continued on an annual basis*

The planning team supports an annual gill net moratorium and agrees that it may be a means to help limit the walleye harvest during the critical spring spawning period. However, to be deemed effective, it is critical that compliance rates during this period are maintained at a high level. The Ministry of Natural Resources has issued an Aboriginal Communal Fishing Licence (ACFL) to Nipissing First Nation for the past two seasons, which prevents gill net use during the spring spawning period. This mirrors Nipissing First Nation’s own self-imposed gill net moratorium period. It will take diligence on the part of both groups to effectively implement and enforce the moratorium.
Proposed Management Actions

- The Ministry of Natural Resources will continue to have an Aboriginal Communal Fishing Licence (ACFL) issued to Nipissing First Nation, which prohibits gill net use during the spring spawning period. MNR will work with the NFN fisheries department to collectively implement this conservation measure, through diligent enforcement and compliance monitoring.

Planning Team Response

Continue to pursue an effective reporting structure of netting harvests
The sustainability of fish stocks in Lake Nipissing depends heavily on the ability to monitor local fish populations, including annual harvest levels for both the sport and First Nation’s commercial fishery. Annual data collection and sharing of information will allow managers to gain an understanding of the stress placed upon the fishery each year, and help to provide a complete state of the resource picture. This information is crucial to making informed management decisions concerning the sustainability of resident fish populations. Without this information, the health of the walleye population may be in jeopardy.

Proposed Management Actions

- MNR will continue to seek accurate harvest reporting of the commercial walleye harvest by building stronger reporting relationships with the NFN fisheries department, in order to gain access to data pertaining to commercial harvest. Such a collaborative effort is critical to the sustainability of the fisheries resource.

Planning Team Response

Continue to support and monitor First Nation’s fisheries efforts of self-regulation pertaining to harvest limitations
The planning team supports the concept of self-regulation for the First Nation commercial fishery. However, the Ministry of Natural Resources is the Crown agency that has delegated responsibility from the Government of Canada for managing natural resources in Ontario. Therefore, it is critical that an effective partnership between MNR and First Nations be established to support sound management of the fisheries resource over the long term.

Proposed Management Actions

- The Ministry of Natural Resources will annually develop and implement an ACFL on Lake Nipissing, until such time as a cooperative and realistic agreement can be formalized with Nipissing First Nation. Such an agreement can and should be developed with the ACFL and Nipissing First Nations “Fisheries Laws” as the basis.
Planning Team Response

Continue to pursue a realistic quota system through the licensing of the First Nations commercial fishers

A realistic and regulated quota system will allow managers to consistently and accurately monitor total annual harvest levels from Lake Nipissing. This information is critical to actively managing this local resource. Based on the information collected to date, the data suggests that Lake Nipissing is still in a stressed state overall, in terms of its walleye population. As indicated in the 2003 data review, it has been recommended that a measured yield of 0.7 kg/ha (61,400kg) be the target harvest for the combined walleye fisheries (sport, commercial, subsistence) of Lake Nipissing. As such, the recommended maximum allowable quota for the First Nations commercial fishery is 30,000kg, which reflects 50% of the proposed walleye allocation after subsistence harvest is considered.

The ACFL, which has been issued to Nipissing First Nation by MNR, recognizes the 30,000kg limit for the commercial fishery. This suggested quota appears to be the single recognizable difference between this licence and NFN’s own Fisheries Law, which currently recommends an annual quota of 45,000kg. A commercial harvest of this size is not biologically justified at this time. However, a biologically sound compromise may be considered under the following circumstances:

- The maximum annual commercial allocation should remain at 30,000kg, given all of the factors that have been considered, mainly sustainability. However, some adjustment of this quota could be considered each year, depending on results obtained from the annual FWIN and creel surveys. FWIN assessments generally occur during the first half of October, and provide the valuable information needed to gain insight into the health of the walleye population. Conceivably, should results suggest positive signs among the walleye population, an appropriate increase in the harvest quota could occur, allowing commercial fisherman to harvest additional fish until the winter season. Consideration of an adjustment to the quota will be assessed by MNR biologists, and will not be made should it be deemed as posing any risk to the sustainability of fish stocks.

Proposed Management Actions

- A maximum harvest quota of 30,000kg has been established for the commercial fishery, based on assessment data and biological objectives for walleye. This limit is reflected in the ACFL, which will guide MNR enforcement efforts at this time.
- MNR will continue to work with Nipissing First Nation to establish consistency between both parties, with respect to commercial harvest quotas.
- MNR will conduct an immediate data analysis following annual FWIN and angler creel surveys to determine whether or not some adjustment in the maximum commercial harvest quota can be supported, without posing any risk to sustainability.
Planning Team Response

Pursue the adoption of a comprehensive native/non-native education program, to facilitate public awareness of First Nations’ Constitutional rights
The planning team agrees that the development of an educational program could help to clarify issues surrounding First Nation’s rights. Such an initiative would be best coordinated by groups such as the Lake Nipissing Stewardship Council, which has representation from both Dokis and Nipissing First Nation.

Proposed Management Actions

- Promote educational initiatives to be developed and implemented by the First Nations communities and Lake Nipissing Stewardship Council.

Planning Team Response

Address the issue of non-utilized by-catch, being species other than walleye
The non-utilization of by-catch is a concern raised frequently by members of the public. These practices are considered wasteful, as species other than walleye are often discarded from nets without serving some use. The planning team agrees that there is an immediate need to address this issue. By developing a formalized licencing system for the commercial fishery, managers can also develop and pursue viable markets for many of these other species.

Proposed Management Actions

- MNR will support the establishment of viable fish markets for fish species other than walleye (currently non-utilized by-catch).

4.1.2 Future Fisheries Assessment

The ability to track changes in population dynamics relies heavily upon repeated monitoring studies. Assessment efforts allow scientists and managers to recognize and react appropriately to changing trends. The Lake Nipissing walleye population is annually subjected to significant pressures from the angling and commercial fisheries, in addition to various environmental pressures (e.g. habitat alteration, climate, etc.). Fisheries assessment data allows managers to track critical population parameters such as abundance, mortality and harvest, providing a glimpse into the state of the fisheries resource over time.

Lake Nipissing was once monitored by a Fisheries Assessment Unit (FAU), a group dedicated to assessing and monitoring the state of the fish populations and habitat. The trend-through-time data set that was established provided an invaluable tool that was used to guide management on the lake. However, in 1996 the assessment unit was dissolved, removing the capacity for MNR to implement an intensive monitoring program on Lake Nipissing. Since that time, MNR has been limited to conducting critical assessment work, which has often resulted in many shortcomings pertaining to the understanding of local fish
populations. Should limitations continue to hinder assessment efforts, it will become much more difficult to make informed management decisions in the future.

Over the course of the winter of 1999, a working group, consisting of fisheries managers, biologists, First Nations and Lake Nipissing stakeholders, was assembled to develop a formal assessment program for Lake Nipissing. Based on these discussions, along with an intensive literature review, fisheries assessment techniques appropriate to Lake Nipissing were chosen for implementation (Rowe and Seyler, 2000). The final document that was produced; “A Fisheries Assessment Plan for Lake Nipissing” served as a guide to fisheries assessment for a 10 year period (2000-2009), as a means to collect relevant fisheries based information. Defined as a working document, this assessment plan would continually be reviewed and enhanced based on emerging science and assessment techniques. The information gathered over the life of the assessment plan would provide the essential means to strategically monitor resident fish populations in Lake Nipissing.

The long-term sustainability of fish stocks in Lake Nipissing depends on the implementation of an annual monitoring and assessment plan, to obtain the critical information needed to monitor population dynamics, current and future pressures, and the effect of angling regulations over time. Given the significance of Lake Nipissing and its fisheries resources, sufficient funding for management and assessment for the future is recommended.

**Public Recommendations**

Recommendations that were submitted as a result of public consultation, as pertaining to future fisheries management are as follows:

1. **Continue to pursue and provide adequate funding necessary for annual fisheries assessment**
2. **Develop a long term strategy for data collection and funding**

**Planning Team Response**

After the development of the 10-year assessment plan for Lake Nipissing, the Ministry of Natural Resources was using this document as the guide for assessment until 2009. However, despite best efforts to meet annual requirements within the plan, it has become increasingly difficult to achieve the desired targets, based on available funding. The work plan that is outlined in the 2000-2009 assessment plan is critical to the sustainable management of Lake Nipissing over time.

MNR recognizes the importance of partnership organizations as contributors to fisheries assessment efforts on Lake Nipissing. These groups supply the additional funds and manpower required to implement various worthwhile initiatives, apart from critical fisheries assessment work. The planning team views these efforts as being important in the future, as a means to enhance the current understanding of fish communities in Lake Nipissing.
Proposed Management Actions

- The Ministry of Natural Resources must fulfill critical assessment needs on Lake Nipissing, as outlined in the formal assessment plan (2000-2009). This assessment plan should be reviewed and updated where possible, to reflect new insight/science pertaining to lake assessment techniques. Such efforts are essential to understanding the local populations, and making informed management decisions for the future.
- Continue to support the involvement of community based groups in the management of Lake Nipissing. These groups provide valuable support for various monitoring and assessment projects on Lake Nipissing.

4.1.3 Sport Fishery

The predominant stress on fish populations in Lake Nipissing continues to be exploitation, including both angling and commercial harvest. However, from 1999-2003 inclusive, there had been a marked decrease in total angling effort. Total angling effort has averaged approximately 650,000 hours, or 7.54 hrs/ha (Rowe 2004). Prior to this, total angling effort averaged over 1,000,000 hrs, or 11.85 hrs/ha. Therefore, annual total angling effort has dropped by approximately 34% when comparing recent versus historical averages.

The decreasing trend in angler effort reflects a similar trend in total angler harvest. Total walleye angling harvest by numbers and weight over the past four years has significantly decreased when compared to the previous 21 years of data. Total walleye harvest averaged 102,711 walleye +/- 53,000 (95% confidence limits) or 44,102 kg +/- 25,000 kg by weight. In comparison, prior to this period, total angler harvest averaged 158,350 +/- 58,000 walleye or 90,819 kg +/- 32,000 kg by weight. Overall, the mean total annual angling harvest by weight has decreased by approximately 51% (Rowe, 2004).

FWIN and harvest data from 1998 suggested that the Lake Nipissing walleye population was stressed at that time. Data from 1999 to 2002 suggested that the health of the walleye population was beginning to improve and the total harvest was at a sustainable level. A significant decrease in open water angler harvest since the 1999 angling regulation changes is a contributing reason for this improvement. However, data from 2003 suggested that the improving trends had reversed to a point where sustainability was a concern. As such, it was deemed critical to reverse this trend by reducing harvest of the prime spawning walleye.

Public Recommendations

Recommendations that were submitted as a result of public consultation, as pertaining to the sport fishery are as follows:

1. Institute a winter slot size for walleye
2. Pursue making all areas of Lake Nipissing part of Division 27, under the same regulations
3. Pursue and promote additional opportunities to alleviate pressure on the walleye fishery
4. Investigate, review, and address open water season extension for species other than walleye
5. Investigate, review and pursue restrictions and/or reductions to the number of commercial ice fishing huts on the lake and the licensing of the same
6. Promote and encourage the use of other conservation fishing methods

Planning Team Response

_Institute a winter slot size for walleye_

The Lake Nipissing walleye population can be characterized as demonstrating good natural reproduction, slow growth, high natural mortality of small fish, and supportive of high angling pressure (Rowe, 1998). Given this nature, a protected slot size is considered to be an effective tool to be used to protect the spawning population and achieve harvest reduction targets.

In 2001, MNR produced a report on post release survival of Lake Nipissing walleye during the ice fishing season. This report was based on results of an experiment conducted during the winter of 2000 and 2001, in which walleye were caught by angling in 30 ft of water, using common angling methods. In total, 152 walleye were captured and subjected to a holding period of up to 48 hours. A relatively high post-release survival rate of 81% was observed, and suggested that catch and release angling during the winter months was a viable conservation measure.

In January 2005, MNR instituted a protected slot limit (40-60cm) for the winter angling season. This added regulation was implemented in the absence of a new fisheries management plan for the lake, and is consistent with the objectives outlined in this interim plan. It is recommended that this year-round protected slot be retained over the life of this plan, as a means to achieve the biological objectives for walleye.

Proposed Management Action

- On January 1, 2005 MNR instituted a protected slot size for walleye in Lake Nipissing, making the lake subject to the same year round slot limit of 40-60cm. This year round slot limit will remain in place for the life of this interim plan, and will be evaluated during the 2010 walleye data review.

Planning Team Response

_Pursue making all areas of Lake Nipissing part of Division 27, under the same regulations_

Effective January 1, 2007 the province of Ontario will undergo a significant change in the existing fisheries landscape. The 36 existing fishing divisions will collapse into 20 newly created Fisheries Management Zones (FMZ). As such, Lake Nipissing will no longer be recognized as Division 27. Instead, the lake will be referred to as Specially Designated Waters (SDW) within FMZ 11. From a regulatory standpoint, this does not affect Lake Nipissing.
Nipissing as the lake will continue to operate separate from the surrounding zone, and have regulations that can/will be different from the adjacent waters. To complement this transition, The west arm of Lake Nipissing (waters west of Hwy. 64) will be subject to the same regulations as the rest of the lake.

**Proposed Management Action**

- On January 1, 2007 Lake Nipissing will become a specially designated waterbody within Fisheries Management Zone 11. As part of this process, the lake extended its regulatory boundary into the west arm of Lake Nipissing, completing this process of incorporation.

**Planning Team Response**

*pursue and promote additional opportunities to alleviate pressure on the walleye fishery*

The Ministry of Natural Resources has and continues to promote angling opportunities for species other than walleye. Assessment data suggests that northern pike, yellow perch, muskellunge and smallmouth bass populations are currently healthy and sustainable, and can support increased angling pressure. In doing so, any measurable shift in angling pressure will help to alleviate effort exerted on walleye, and remain consistent with desired management objectives.

**Proposed Management Action**

- MNR will continue to promote additional opportunities where possible. See additional information under “Resource-Related Education”.

**Planning Team Response**

*investigate, review, and address open water season extension for species other than walleye*

Assessment data suggests that other fish populations such as smallmouth bass, northern pike, whitefish and muskellunge are currently healthy and sustainable. The planning team agrees that consideration for an extended season for these other species is warranted, given the biological justification. Furthermore, the planning team agrees that such an extension should come with an extended enforcement commitment on the lake. The team also feels that while the yellow perch population is also considered to be healthy, the season should continue to mirror that of walleye. Angling techniques used for perch are generally the same as those used for walleye. As a result, walleye are often captured when perch is targeted. Therefore, in retaining identical season closure dates, this “by-catch” factor can be eliminated.

Currently, compliance rates among anglers exceeds 90%, as reported by the district enforcement unit. Therefore, an extension to the angling season should have a negligible effect on compliance rates. A commitment to regular patrols during an extended season...
will be crucial to monitoring compliance on Lake Nipissing during the entire angling season.

**Proposed Management Action**

- Effective January 1, 2007, a lengthened fall angling season has been recommended by MNR for most fish species on Lake Nipissing, with the exception of walleye and yellow perch. For species such as muskellunge, northern pike, smallmouth bass and whitefish, the fall season will shift from an October 15th closure to November 30th. This season extension will be monitored annually to assess any impacts, and evaluated during the 2010 data review.

*Note: A second angling season extension has been recommended for Lake Nipissing. The winter season closure will shift from March 7th to March 15th. As with the fall season extension, this regulatory change will be monitored annually to assess any impacts, and evaluated during the 2010 data review. Such a change will provide enhanced angling opportunities for the public without compromising management objectives for the walleye population.*

**Planning Team Response**

*Investigate, review and pursue restrictions and/or reductions to the number of commercial ice fishing huts on the lake and the licensing of the same*

A licensing system was implemented in 2004 for the Lake Nipissing commercial fish hut operators, although no fee structure was established for that licence, as the province evaluated the concept of a commercial licensing system for province-wide application. Locally, a volunteer reporting survey was conducted in the winter of 2003 among local commercial ice hut operators, to assess the potential impacts of these operations on fish stocks. A preliminary analysis of this data failed to identify an occurrence of excessive harvest. Therefore, to set further limitations at this time is not biologically justified, but could be investigated further with additional study. Such a survey can be incorporated into the existing winter creel, simply by recognizing commercial huts as such within one of 2 optional checkboxes located on each interview form.

**Proposed Management Action**

- Assess the biological impacts of commercial ice huts on Lake Nipissing. This will be achieved by enhancing the existing winter creel survey to recognize commercial ice huts as such. In doing so, data pertaining specifically to commercial huts can readily be extracted, analyzed and compared to the non-commercial data.

**Planning Team Response**

*Promote and encourage the use of other conservation fishing methods*

The planning team agrees that the promotion of conservation fishing methods is an effective way to promote sustainability of the fisheries resource. It is recommended that
the Ministry of Natural Resources continue to work with local stakeholder groups, such as the Lake Nipissing Stewardship Council, to develop and implement promotional initiatives. Such efforts could include various workshops and seminars that focus on issues such as catch and release fishing, the use of barbless hooks, appropriate fish handling techniques, among others.

**Proposed Management Actions**

- MNR will work with local stakeholder groups such as the Lake Nipissing Stewardship Council to develop various initiatives focused on the promotion of conservation fishing methods. Such initiatives could include workshops and information seminars that deal with a range of topics including live-release techniques, low impact gear, among others.

**Note:** Additional information pertaining to the promotion of conservation fishing methods can be found within section 4.2.2: Resource-Related Education.

### 4.2 Secondary Issues

#### 4.2.1 Fish Habitat Protection, Monitoring and Improvement

Lake Nipissing continues to be stressed by factors affecting fish habitat, mainly as a result of shoreline development. This stress produces a slow, cumulative impact over time, and often occurs without being immediately recognized. Developments such as these are likely to continue and even escalate in the future, with the inevitable increase in urban activity among communities such as North Bay, Sturgeon Falls and others.

The Ministry of Natural Resources currently provides a supporting role to the Federal Department of Fisheries and Oceans in terms of the fish habitat protection and referral process. More specifically, MNR screens and refers work permit applications under the Public Lands Act and provides supporting information to DFO and Conservation Authorities when appropriate. It is critical that MNR have complete, up to date information pertaining to habitat values, to facilitate the review process (Rowe, 1998). This allows the appropriate authorities to make informed decisions concerning projects that potentially affect fish habitat.

Since 2000, MNR has been working towards updating fish habitat information on Lake Nipissing. This initiative has involved several partners, including the Lake Nipissing Partners in Conservation, Lake Nipissing Stewardship Council, Sturgeon Falls Rod and Gun Club and Nipissing First Nation. As described in the previous plan, a spawning ground investigation was first completed between 1980-1985, and consisted of mapping walleye and northern pike spawning locations around the lake. The more recent efforts have focused on updating information pertaining to walleye spawning locations, habitat quality and mapping several new sites. This project is ongoing, and requires more effort in the future. Unfortunately, with the exception of the work that has been done involving walleye and northern pike, there is very little information pertaining to critical habitat for other species such as lake sturgeon, bass and muskellunge.
Continued development around the lake poses a serious threat to fish habitat, including critical spawning areas. It is critical to increase public awareness of this issue, particularly among those looking to develop their shoreline areas, in order to promote habitat conservation around Lake Nipissing.

Public Recommendations

Recommendations that were submitted as a result of public consultation, as pertaining to fish habitat protection, monitoring and improvement issues are as follows:

1. Fish hatcheries should be encouraged to continue operations
2. Pursue possible funding of fish hatcheries through the MNR

Planning Team Response

The public recommendations noted under fish habitat protection, monitoring and improvement have been incorporated into section 4.3.1- Walleye Stocking, as the comments relate more closely to that theme.

However, it should be noted that the protection and conservation of fish habitat does represent a critical component of sound fisheries management for Lake Nipissing. The planning team feels that groups such as the Lake Nipissing Stewardship Council could play an important role in the development and implementation of future initiatives to address various concerns surrounding fish habitat. Such initiatives will also be vital to raising awareness among the public about this serious issue.

Recently, money collected by the Department of Fisheries and Oceans, as a result of habitat infractions (fines), has been returned to the lake through donation to the Lake Nipissing Stewardship Council. This funding has been applied to environmentally sound initiatives that benefit the lake, such as spawning rehabilitation projects.

Proposed Management Actions

- The Ministry of Natural Resources will continue to work with the Lake Nipissing Stewardship Council, and other groups, to develop and implement various habitat based initiatives. Efforts should include:
  - Develop the capacity (manpower/funding) to complete the walleye/pike spawning shoal inventory around Lake Nipissing
  - Develop the means to gain information pertaining to critical habitat locations for bass, muskellunge and lake sturgeon
  - Implement a field assessment project to insert radio tags into adult lake sturgeon, to determine critical habitat locations during different times of year.
  - Develop and implement a workshop focused on educating the public on habitat conservation. Such a workshop should be geared towards waterfront property owners, and outline the measures which should be taken to avoid any adverse impacts on shoreline habitat.
MNR will continue to work with the Department of Fisheries and Oceans to obtain additional funds gathered from Fisheries Act infractions, and apply funds to environmentally sound initiatives on Lake Nipissing.

### 4.2.2 Resource-Related Education

Lake Nipissing is unique in terms of its diverse biological and social attributes. From a biological standpoint, the lake contains a high level of fish species and habitat richness. Socially, Lake Nipissing is the economic driver for the communities and local businesses that line its shore. Many local users rely on Lake Nipissing for the recreational benefits of its clean waters and healthy fisheries resources.

When looking at the suite of management tools that are deemed critical to guiding sound management decisions, assessment and enforcement generally receive the greatest attention. But perhaps a more enduring tool, one that is often overlooked due to the limited immediate benefits that it is perceived to deliver, is that of public education. The potential effects that such a tool can promote over the longer term are considerable.

The future health of Lake Nipissing will depend in part on the public’s understanding of the diverse range of values associated with this resource. Public education pertaining to the protection of the Lake Nipissing ecosystem is a need that has been consistently identified by MNR and the public.

#### Public Recommendations

Recommendations that were submitted as a result of public consultation, as pertaining to resource-related education issues are as follows:

1. **Comprehensive public education efforts imperative, as to the importance of Lake Nipissing to the community, economy, environment, and sustainability of the fisheries resource.**
2. **Encourage more youth involvement at elementary, secondary, and post-secondary levels.**
3. **Develop and provide relevant education materials to educational institutions**
4. **Pursue utilization of secondary school volunteer requirement to encourage youth involvement in data collection and collation with regards to the fishery.**

#### Planning Team Response

The planning team agrees that resource-related education is critical to creating awareness among resource users. Lake Nipissing represents a vital economic, social and environmental driver for the surrounding area. The health and prosperity of this resource plays significantly into the prosperity of adjacent communities.

A comprehensive educational strategy is warranted, and could incorporate the following themes:
Proposed Management Actions

- The Ministry of Natural Resources will work co-operatively with the Lake Nipissing Stewardship Council, part of the Ontario Stewardship Program, to develop a comprehensive educational strategy. Ideally, a workplan will lead to the creation of an educational unit, which will focus educational efforts on local school systems and the broader public. These initiatives should include workshops, seminars and school programs.

4.2.3 Non-compliance with Fishing Regulations & Enforcement Issues

Given the high level of angling pressure imposed each year, there is significant concern surrounding angler compliance rates throughout the season, and the ability of MNR to sufficiently monitor compliance during the entire angling season.

Public Recommendations

Recommendations that were submitted as a result of public consultation, as pertaining to non-compliance and enforcement issues are as follows:

1. Review current enforcement measures to ensure effectiveness and compliance
2. Pursue additional public awareness efforts of enforcement issues
3. MNR to pursue the possibility of hiring a native Conservation Officer

Planning Team Response

The planning team agrees that enforcement measures should be reviewed annually, as a means to optimize the distribution of resources and to ensure the effectiveness of the program. Such measures are reviewed each year by MNR and adjusted according to compliance needs, with consideration for manpower and funding availability.

A native conservation officer could promote a stronger linkage between the MNR enforcement program and local First Nation communities. This hiring initiative could have far reaching benefits, and is necessary for screening candidates for possible future roles in the enforcement program.

Proposed Management Actions
• MNR will continue to review enforcement issues on an annual basis, to fulfill compliance needs and priorities where possible.
• MNR will continue to conduct enforcement blitzes at critical times of the year, in addition to delivering regular patrols.
• MNR will commit to conducting regular fall enforcement patrols on Lake Nipissing, to complement extended angling seasons.
• The North Bay MNR enforcement unit will plan to provide opportunities for several Nipissing First Nation members, who are graduates of natural resource management programs, to help them gain exposure to the MNR law enforcement program. This will include sponsorship for attendance at the Level One Enforcement course at a future date. This course is mandatory for any individual aspiring to become a Deputy or full time Conservation Officer.

4.3 Tertiary Issues

4.3.1 Walleye Stocking

Over the years, a number of local groups have developed and operated fish hatcheries, culturing walleye for release in Lake Nipissing. These efforts have been made with good intentions, and have promoted community involvement in lake stewardship initiatives.

Countless studies have been conducted in recent years to determine the biological effectiveness of stocking in general, and whether or not it can/should be used to supplement an existing fish populations. Based on several studies, the evidence is overwhelming, suggesting that planting hatchery born fish in waters containing a naturally reproducing population will not improve the fishery. In fact studies suggest that stocking in these situations can often do more harm than good. The introduction of new fish brings increased competition for food and space, in an already complex fish community. Also, the introduced fish are not adapted to the environment in which they are introduced, therefore tend to suffer extensive mortality upon release.

Based on the science at hand, and because Lake Nipissing has an existing viable walleye population with no recorded major recruitment or reproduction problems, supplemental stocking is not considered an effective management tool to address the present situation. Despite the scientific evidence, supplemental stocking of Lake Nipissing remains an issue with the surrounding community.

Public Recommendations

Recommendations that were submitted as a result of public consultation, as pertaining to walleye stocking are as follows:

1. Fish hatcheries should be encouraged to continue operations
2. Pursue possible funding of fish hatcheries through MNR
3. Review effectiveness of fish hatcheries and fish stocking measures with regards to sustainability
4. Pursue additional efforts and funding if merited

**Planning Team Response**

Based on the extensive work that has been conducted in recent years, it is very apparent that the stocking of fingerlings into a waterbody such as Lake Nipissing is not biologically justified. Furthermore, Lake Nipissing currently contains a naturally reproducing walleye population, with the ability to promote strong recruitment in the absence of stocking. To pursue additional funding for such efforts at this time is not warranted. However, rather than focusing so heavily on fingerling stocking, the planning team feels that there are a number of potentially beneficial experiments that could be enhanced and developed through the existing public hatchery.

For example, in recent years, many questions have been asked pertaining to the planting of eyed eggs on barren spawning shoals. The main questions relating to whether or not walleye actually can/do imprint on these shoals, returning as adults to spawn. Very little literature describes such an experiment, and this may be a worthwhile venture to pursue on Lake Nipissing.

Since 1998, the Ministry of Natural Resources has completed an annual FWIN survey on Lake Nipissing. As such, this survey allows managers to track the presence of young-of-the-year walleye, that is fish that were born in the spring of the same year. This analysis can also be useful in detecting any effects of stocking. MNR currently has the data needed to complete a formal analysis on the effects of fingerling stocking to date.

Currently, additional stocking efforts and associated funding are not merited, given what is known about supplemental stocking.

**Proposed Management Actions**

- Produce a formal report on the effect of stocking on walleye year classes since 2001
- Shift current experimental focus from fingerling stocking to other enhanced efforts:
  - Eyed egg planting on barren spawning shoals to test the theory of imprinting by young walleye

4.3.2 Lake Level Fluctuations

Water levels on Lake Nipissing are seasonally regulated by control structures found at various locations around the lake. Mainly, the northern parts of the Sturgeon River/Nipissing/French River (SNF) watershed are regulated by three main dams, those being on the South, Sturgeon River (Inflows) and the upper French River (Chaudiere dam: Outflow). These are managed by Ontario Power Generation, the Municipality of West Nipissing and Public Works Canada respectively. The main regulatory dam, the Chaudiere, manages water levels to accommodate summer navigation requirements, but also accounts for the needs of the fishery (critical spawning periods) and local residents.
Sufficient water levels in the spring are critical to the success of spawning walleye. As noted in the previous fisheries management plan, according to Jorgensen (1994), the optimum water level for the beginning of the spawning period at Wasi Falls is above 195.3 metres. For the remaining walleye in other parts of the lake, which tend to begin spawning slightly later than the Wasi Falls location, lake levels at that time are above 195.66 metres. Once the spawning period begins, water levels must continue to rise at or above historical levels throughout the spawning period to ensure that adequate habitat is available (Rowe, 1998).

Public Recommendations

Recommendations that were submitted as a result of public consultation, as pertaining to lake level fluctuation issues are as follows:

1. Investigate the possibility of one management authority for the whole watershed
2. Review the effectiveness of current procedures

Planning Team Response

The suggestion to have a single authority responsible for managing all of the dams in the Sturgeon River/Lake Nipissing/French River (SNF) watershed has surfaced frequently over the last 40 years or so. The lead agency for water management is presently the Ministry of Natural Resources as recommended in the 1992 SNF Water Management Plan authored by the now defunct SNF Water Management Board. Current water management practices are guided by the 1992 plan, which evolved out of recommendations of a Flood Reduction Study completed in 1981. The management plan recommendations were further refined in 1995 when Public Works and Government Services Canada (PWGSC) completed the Operating Guidelines for Lake Nipissing and the French River.

In 1999, Acres International was commissioned to review the water regulatory operations conducted on Lake Nipissing for a period of 1991-1999. The report completed in September 2000 concluded that during the 10-year period PWGSC consistently operated the dams in accordance with the principles and objectives underlying the 1995 Operational Guidelines. The report stated that “overall, the dam operator seems to have done an admirable job of balancing competing interests in a system where it is very difficult to do so”.

The Terms of Reference for the SNF Water Management Group were developed and approved in 2001. The group is represented by a broad range of citizens, interest groups and government organizations from locations within the watershed, along with the individual agencies that actually own and operate dams. The group operates in a cooperative manner and consistently arrives at decisions by consensus. This approach is consistent with water management planning processes, which are currently taking place throughout the province. There is no need or benefit in having a single management authority for the entire watershed as long as the existing group continues to work within the spirit and intent of the established terms of reference.
Proposed Management Actions

- The Ministry of Natural Resources will continue to work as part of the SNF Water Management Group to continue a co-operative approach to water management.

- Priorities for the future will continually include the maintenance of water levels to account for the balanced needs of the public and environment of Lake Nipissing.

4.3.3 Colonization by Double-Crested Cormorants

Ontario’s cormorant population was almost completely wiped out in the 1970’s, mainly due to the widespread use of pesticides, including DDT. The use of such chemicals has since been banned, and as such, cormorant populations have re-colonized at a high rate in areas across the province.

In recent years, these birds have received a great deal of attention from the public, as they have been blamed for having negative impacts on fish stocks and the environment. In some areas of the province, some actions have been taken to control populations, either through oiling unhatched eggs or culling adult birds. No such actions have been undertaken at this time on Lake Nipissing as there is currently no biological justification for this.

Lake Nipissing currently supports a total of five nesting colonies, located on various islands on the lake. Since 1998, the Ministry of Natural Resources has been monitoring these existing colonies on an annual basis to track any apparent trends in growth among them. While the double-crested cormorant population on Lake Nipissing grew quickly from 1993 to 1999, recent nest counts suggest that the population may now be leveling off (Rowe, 2003).

Based on what is currently known and what we have learned in recent years, it appears that cormorant populations on Lake Nipissing are not having a significant negative impact on specific habitats or fish stocks in the lake.

Public Recommendations

Recommendations that were submitted as a result of public consultation, as pertaining to the colonization of double-crested cormorants are as follows:

1. **Continued study required to monitor all aspects of the effect of these birds on the sport and native fisheries**
2. **Continue to monitor and review data for possible control measures**

Planning Team Response

The planning team agrees that there is a need to continue monitoring cormorant populations on Lake Nipissing, to track any apparent trends in growth or reduction. Based on the information collected to date, there is no biological justification for controlling the
population at this time. In fact, data suggests that the present population is not feeding heavily on sport fish, nor do they appear to be limiting the supply of forage fish available for sport fish. There have been no observations of cormorants eating preferred fish stocks off spawning beds on Lake Nipissing (Rowe, 2003).

**Proposed Management Actions**

- MNR will continue to conduct an annual assessment on Lake Nipissing, to monitor the existing cormorant population.

**4.3.4 Water Quality Degradation**

Comparative water quality testing has been conducted periodically on Lake Nipissing since 1988, and earlier. The most recent study occurred in 2004, with a report from the environmental monitoring and reporting branch of the Ministry of Environment. Generally, water chemistry has not changed significantly since the 1980’s. Some elevations in particular components have been observed, however the lake is still deemed to be within acceptable parameters, as related to the Provincial Water Quality Objectives. It has been noted that Lake Nipissing does contain two significant bays, Callander and Cache, which exhibit notably different water chemistry than the rest of the lake.

Many local user groups have voiced concern over water quality issues in Lake Nipissing, and suggest that frequent testing be done to monitor any changes in water chemistry. This need becomes further supported by the increase in activity and development that is occurring around the lake.

**Public Recommendations**

Recommendations that were submitted as a result of public consultation, as pertaining to water quality issues are as follows:

1. **Continue all water quality study efforts**
2. **Encourage participation and involvement of all surrounding municipalities in monitoring water quality**
3. **Ministry of Environment to closely monitor the industrial effluent being released into Lake Nipissing**

**Planning Team Response**

The Lake Nipissing Stewardship Council contains representation from the main regulatory authority on water quality, that being the Ministry of the Environment. As such, the lake now supports community based involvement in water quality issues through this council. Future monitoring programs are warranted for Lake Nipissing, and should be directed by the Lake Nipissing Stewardship Council, in partnership with the Ministry of the Environment.
Proposed Management Actions

- MNR will support future water quality monitoring through the Lake Nipissing Stewardship Council board of directors. Such efforts will be directed by the existing water quality subcommittee, which includes a representative of the Ministry of the Environment.
### 5.0 PROPOSED MANAGEMENT STRATEGIES

<table>
<thead>
<tr>
<th>OBJECTIVE</th>
<th>STRATEGY</th>
<th>ACTION</th>
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<tbody>
<tr>
<td>To develop and promote a healthy and sustainable sport fishery on Lake Nipissing.</td>
<td></td>
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</tr>
<tr>
<td><strong>Walleye</strong></td>
<td>Implement appropriate regulatory measures to promote a decrease in harvest of prime spawning fish.</td>
<td>The following regulation changes will be implemented for January 1, 2007 and be maintained until 2010:</td>
</tr>
<tr>
<td></td>
<td>Utilize a year round protected slot limit to afford maximum protection to adult spawning fish.</td>
<td><strong>Walleye</strong>:</td>
</tr>
<tr>
<td></td>
<td>The following regulation changes will be implemented for January 1, 2007 and be maintained until 2010:</td>
<td>January 1, 2005- Protected slot limit of 40-60cm implemented. Year round slot in effect.</td>
</tr>
<tr>
<td>To observe a significant increase in adult walleye biomass by 2010 when compared to the 2003 estimate from FWIN.</td>
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<td>To observe with 80% probability, a total adult mortality (age 5 and older) of no greater than 40% for each of the next 4 years.</td>
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<tr>
<td>To ensure that the total walleye angling harvest over the next 4 years does not significantly increase relative to the previous 6 years, to afford more protection to adult walleye in an effort to increase overall adult walleye biomass.</td>
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<tr>
<td><strong>Northern Pike</strong></td>
<td>Implement regulatory measures to enhance protection of larger fish.</td>
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<tr>
<td>To monitor the pike population, in terms of abundance and harvest, to prevent the an overharvest.</td>
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<tr>
<td>Promote a high quality fishery through protection of larger fish in the population.</td>
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<tr>
<td><strong>Yellow Perch</strong></td>
<td>Continue to monitor the population.</td>
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<tr>
<td>Prevent the occurrence of an overharvest.</td>
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The following regulations will be implemented:

**Walleye:**
- January 1, 2005- Protected slot limit of 40-60cm implemented. Year round slot in effect.

**Northern Pike:**
- Catch limit of 6 (S)
- 2-tiered size based regulation, only 2 can be greater than 61cm, of which 1 can be greater than 86cm.

**Yellow Perch:**
- Continue to monitor the population.

Responsibility: Area Biologist

Funding: FWIN: $10,000
- Creel: Open water and Winter: $31,000

Timing: Annual
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<tr>
<th>OBJECTIVE</th>
<th>STRATEGY</th>
<th>ACTION</th>
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<tbody>
<tr>
<td><strong>Smallmouth Bass</strong></td>
<td>To promote and maintain a healthy smallmouth bass population.</td>
<td>Monitor the smallmouth bass population.</td>
</tr>
</tbody>
</table>
| **Muskellunge** | To maintain a healthy population of large muskellunge in Lake Nipissing. | Implement appropriate regulatory measures to enhance protection of large muskellunge, promote a trophy fishery. | **Muskellunge:**
- Effective January 1, 2007 - Minimum size limit of 122cm (48”) in effect.
Monitor the success of regulations through assessment, including Creel, Index Netting as per 2000-2009 assessment plan. |
| **Lake Whitefish** | To maintain a healthy whitefish population. | Monitor the whitefish population. | **Lake Whitefish:**
Minimize all sources of exploitation (Sport/Commercial). |
| **Lake Sturgeon** | To continue to monitor the sturgeon population and promote an increase in abundance. | Minimize all sources of exploitation (Sport/Commercial). Implement appropriate monitoring program to obtain a state of the resource picture for lake sturgeon. | **Lake Sturgeon:**
Retain lake wide season closure, sport and commercial, to promote recovery among the sturgeon population. Continue monitoring remnant |

**Responsibility:** Area Biologist  
**Funding:** Creel: $31,000 annual Index Netting: $2,000  
**Timing:** 2007
<table>
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<tr>
<th><strong>OBJECTIVE</strong></th>
<th><strong>STRATEGY</strong></th>
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<tbody>
<tr>
<td><strong>Other Species</strong></td>
<td>Adopt an appropriate assessment strategy for Lake Nipissing.</td>
<td>adult population at 2 primary spawning locations: South River (Chapman’s Chute) and Sturgeon River.</td>
</tr>
<tr>
<td>To gain a better understanding of other fish communities in Lake Nipissing.</td>
<td></td>
<td><strong>Responsibility:</strong> Area Biologist</td>
</tr>
<tr>
<td>To maximize angling opportunities where it is biologically safe to do so.</td>
<td>Implement angling regulations</td>
<td><strong>Funding:</strong> $2000 annually</td>
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<td><strong>Timing:</strong> Annual for next 5-6 years</td>
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<td></td>
<td>Identify critical habitat locations and seasonal movement patterns for lake sturgeon using radio tagging methods.</td>
<td><strong>Responsibility:</strong> Area Biologist</td>
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<td><strong>Funding:</strong> $5000</td>
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<td><strong>Timing:</strong> Immediately (May-June)</td>
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<td></td>
<td>Implement the existing 2000-2009 Fisheries Assessment Plan. Adjust where required.</td>
<td><strong>Responsibility:</strong> Area Biologist</td>
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<td></td>
<td><strong>Funding:</strong> See Assessment Plan</td>
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<td></td>
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<td><strong>Timing:</strong> Immediately</td>
</tr>
<tr>
<td>Muskie, Northern Pike, Smallmouth Bass, Whitefish:</td>
<td>Implement the following season change for these species for January 1, 2007:</td>
<td>Implement the following season change for January 1, 2007:</td>
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<tr>
<td></td>
<td>• Open water season closure- November 30th.</td>
<td>• Winter season closure to shift from March 7th to March 15th.</td>
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<td>• Maintain October 15th closure date for walleye/perch</td>
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<td>OBJECTIVE</td>
<td>STRATEGY</td>
<td>TACTIC</td>
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<td>To monitor commercial ice hut operations on Lake Nipissing.</td>
<td>Implement a winter assessment survey to assess commercial hut effort and harvest.</td>
<td>Implement assessment through the existing creel survey. Recognize commercial huts as such through optional checkboxes on interview forms.</td>
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**Responsibility:** Area Biologist  

**Funding:** $11,000 (creel costs)  

**Timing:** Winter 2007
<table>
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<tr>
<th>ISSUE</th>
<th>STRATEGY</th>
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<tr>
<td>Management of the First Nations Fishery</td>
<td>Continue to pursue partnerships with Nipissing and Dokis First Nations to cooperatively manage the Lake Nipissing fishery.</td>
<td>Pursue a mutually acceptable and enforceable commercial fishing agreement with Nipissing First Nation. Such an agreement will mirror the existing MNR Aboriginal Communal Fishing Agreement (ACFL) and Nipissing First Nations Fisheries Law. To include a harvest quota, harvest reporting protocol, compliance plan. A formalized, enforceable document must be implemented immediately to support long-term sustainability efforts.</td>
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<td><strong>Responsibility:</strong> MNR personnel (Enforcement, Resource Liaison, Area Biologist).</td>
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<td></td>
<td><strong>Funding:</strong> Unknown at this time</td>
<td><strong>Timing:</strong> ASAP</td>
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<td></td>
<td><strong>Responsibility:</strong> Nipissing First Nation, support from MNR personnel (enforcement, resource liaison).</td>
<td><strong>Funding:</strong> Unknown</td>
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<td><strong>Timing:</strong> ASAP</td>
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<td>ISSUE</td>
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<td>Monitor fish populations on Lake Nipissing, to gain an understanding of populations other than walleye, and monitor population responses to regulation changes.</td>
<td>Maintain critical annual assessment workload (FWIN/Cree1), implement other species-specific projects as funding becomes available.</td>
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<td><strong>Responsibility:</strong> Area Biologist</td>
</tr>
<tr>
<td>Resource Related Education</td>
<td>Continue community-based involvement in the assessment and management of Lake Nipissing through the Lake Nipissing Stewardship Council.</td>
<td>LNSC to seek additional funding to support assessment plan.</td>
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<td><strong>Responsibility:</strong> Area Biologist in partnership with Lake Nipissing Stewardship Council (Ontario Stewardship Program member)</td>
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<td></td>
<td></td>
<td><strong>Funding:</strong> To be determined</td>
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<td></td>
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<td><strong>Timing:</strong> Immediately</td>
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<td></td>
<td>Work with community partners (Lake Nipissing Stewardship Council) to develop an educational plan to be directed at school systems and the broader public. Educate about Lake Nipissing, its values and biological significance.</td>
<td>A comprehensive educational strategy to incorporate the following:</td>
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<tr>
<td></td>
<td></td>
<td>• Ecological Diversity/ Resource Values</td>
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<td>• Sportfishing- Regulations, Conservation</td>
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<td>• First Nations Fisheries</td>
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<td>• Fish Habitat Protection and Enhancement</td>
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<td>• Enforcement/Compliance</td>
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<td>• Water Quality</td>
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<td>• Invasive Species</td>
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<td></td>
<td>• Walleye Stocking</td>
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<td><strong>Responsibility:</strong> MNR personnel (biologist, communications specialist, enforcement), Lake Nipissing Stewardship Council and First Nations.</td>
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Lake Nipissing- Interim Fisheries Management Plan (2007-2010)
<table>
<thead>
<tr>
<th>ISSUE</th>
<th>STRATEGY</th>
<th>ACTION</th>
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</table>
| Non-Compliance with Fishing Regulations & Other Enforcement Issues | Review existing compliance strategy to evaluate effectiveness and maximize where possible. | **Funding:** None Required  
**Timing:** Begin planning immediately. Targeted completion: 2008  
Seek appropriate funding to support implementation of educational plan. Funding to be pursued through Ontario Stewardship Program.  
**Responsibility:** Lake Nipissing Stewardship Council, assistance where needed by MNR: Area Biologist, Communications Specialist.  
**Funding:** To be determined  
**Timing:** Immediately upon startup for education strategy planning.  
Conduct a formal annual review of enforcement measures, adjust as appropriate.  
**Responsibility:** Enforcement personnel  
**Funding:** None required  
**Timing:** Annual, prior to open water angling season.  
Ensure that Lake Nipissing is recognized as a high priority in District Compliance Plan, particularly during critical times of the year.  
**Responsibility:** Enforcement personnel  
**Funding:** None required  
**Timing:** Immediately |

Lake Nipissing- Interim Fisheries Management Plan (2007-2010)
<table>
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<tr>
<th>ISSUE</th>
<th>STRATEGY</th>
<th>ACTION</th>
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</table>
| Fish Habitat Protection, Monitoring and Improvement | Collect information pertaining to fish habitat locations in Lake Nipissing | Conduct enforcement “blitzes” on Lake Nipissing during the angling seasons to target all violations.  
*Responsibility:* Enforcement personnel  
*Funding:* None required  
*Timing:* As required |
| | Develop the means necessary to complete a fish habitat inventory for all species. | Continue to update existing habitat survey information, pertaining to walleye/pike spawning habitat in Lake Nipissing.  
*Responsibility:* Area Biologist  
*Funding:* To be determined  
*Timing:* Begin Spring 2007 |
| | Pursue a habitat awareness initiative geared towards shoreline property owners, to stress the importance of habitat protection during shoreline development works. Include responsibilities of proponents/agencies, authorization process/requirements, along with a comprehensive overview of fish habitat values and characteristics. | Complete an updated fish habitat needs analysis for all fish species in Lake Nipissing.  
*Responsibility:* Area Biologist  
*Funding:* None required  
*Timing:* Winter 2008 |
| | MNR partnership with community based group (LNSC) and DFO to develop and implement a workshop dealing with fish habitat and development projects. | MNR partnership with community based group (LNSC) and DFO to develop and implement a workshop dealing with fish habitat and development projects.  
*Responsibility:* Area Biologist, Lake Nipissing Stewardship Council: Fisheries and Education Subcommittees  
*Funding:* To be determined  
*Timing:* Summer 2007 |
<table>
<thead>
<tr>
<th>ISSUE</th>
<th>STRATEGY</th>
<th>ACTION</th>
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<tbody>
<tr>
<td>Walleye Stocking</td>
<td>Evaluate the effectiveness of existing stocking programs on the walleye population in Lake Nipissing.</td>
<td>Promote the need for community involvement in reporting habitat alterations around Lake Nipissing.</td>
</tr>
<tr>
<td></td>
<td>Work with local user groups to gain a consensus on the stocking issue for Lake Nipissing.</td>
<td><strong>Responsibility:</strong> Communications Specialist, LNSC</td>
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<td></td>
<td>Re-direct current stocking efforts (fingerlings) to other experimental initiatives and lake stewardship projects.</td>
<td><strong>Funding:</strong> None</td>
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<td><strong>Timing:</strong> Spring 2007</td>
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<td>Conduct a formal stocking assessment study on Lake Nipissing, to evaluate year class strength in relation to successive years of fingerling stocking.</td>
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<td><strong>Responsibility:</strong> Area Biologist</td>
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<td></td>
<td></td>
<td><strong>Funding:</strong> None Required</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Timing:</strong> 2008</td>
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<td>Pursue the organization of an educational initiative to evaluate the issue of stocking, what has the science told us, and how this applies to Lake Nipissing.</td>
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<td>A workshop format that could include guest speakers from other areas, sharing experiences, insights.</td>
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<td><strong>Responsibility:</strong> MNR personnel (Area Biologist and Communications Specialist), Lake Nipissing Stewardship Council</td>
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<td></td>
<td></td>
<td><strong>Funding:</strong> To be determined</td>
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<td></td>
<td></td>
<td><strong>Timing:</strong> 2007</td>
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<td>Conduct experimental planting of eyed eggs on barren spawning shoals around Lake Nipissing.</td>
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<td><strong>Responsibility:</strong> Area Biologist</td>
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<td></td>
<td></td>
<td><strong>Funding:</strong> To be determined</td>
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<td><strong>Timing:</strong> Spring 2007</td>
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<td><strong>ISSUE</strong></td>
<td><strong>STRATEGY</strong></td>
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<tr>
<td>Lake Level Fluctuations</td>
<td>Continually review the existing water management system for Lake Nipissing through the cooperative Sturgeon River/Nipissing/French River (SNF) Water Management Group, to ensure that the needs of the public and environment are sufficiently balanced.</td>
<td>MNR to continue to work as part of SNF Water Management Group, to cooperatively manage water level on Lake Nipissing.</td>
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<td></td>
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<td><strong>Responsibility:</strong> MNR: Lands/Waters Specialist</td>
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<tr>
<td></td>
<td></td>
<td><strong>Funding:</strong> None required</td>
</tr>
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<td></td>
<td></td>
<td><strong>Timing:</strong> Ongoing</td>
</tr>
<tr>
<td>Colonization by Double-Crested Cormorants</td>
<td>Monitor the cormorant population on Lake Nipissing, and assess the effects on the local environment and fish stocks. Review existing literature from other areas that document trends noted among other cormorant populations.</td>
<td>Continue annual monitoring program on Lake Nipissing, which includes nest/fecundity counts, diet analysis. Update annual reports to recognize population trends.</td>
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<td></td>
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<td><strong>Responsibility:</strong> Area Biologist</td>
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<tr>
<td></td>
<td></td>
<td><strong>Funding:</strong> None required</td>
</tr>
<tr>
<td></td>
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<td><strong>Timing:</strong> Summer (June) annually</td>
</tr>
<tr>
<td>Water Quality Degradation</td>
<td>Develop and implement an updated water quality study for all parts of Lake Nipissing, if warranted.</td>
<td>Work with the Ministry of the Environment, through its representative on the Lake Nipissing Stewardship Council, to evaluate the need for an updated water quality survey on Lake Nipissing.</td>
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<tr>
<td></td>
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<td><strong>Responsibility:</strong> Area Biologist, Lake Nipissing Stewardship Council</td>
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<tr>
<td></td>
<td></td>
<td><strong>Funding:</strong> None required</td>
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<td></td>
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<td><strong>Timing:</strong> Spring 2007</td>
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</table>
6.0 FUNDING REQUIREMENTS FOR PLAN IMPLEMENTATION

Sufficient funding is crucial to the appropriate delivery of this interim fisheries management plan for Lake Nipissing. Most of the commitment must focus on the existing requirements associated with the existing 2000-2009 fisheries assessment plan, developed by Rowe and Seyler. This plan outlines an implementation schedule that would expire in 2009. This plan should be adjusted to account for recent assessment shortcomings, and advances in fisheries science.

Overall, an estimated $60,000 would be required annually, in order to cover the costs associated with core assessment (not including wages). It should be noted that the funding requirements noted herein are immediate, and in addition to costs associated with regular annual work planning. Core assessment projects include the following:

Fall Walleye Index Netting (FWIN)

Total Annual Cost: $10,000

FWIN represents the provincial standard for assessing walleye populations in Ontario. Since 1998, FWIN surveys have been completed on an annual basis on Lake Nipissing, and have provided essential information required to monitor the local walleye resource. Along with providing critical diagnostic information for walleye, this standardized survey technique provides valuable information pertaining to other fish species such as northern pike, yellow perch, and muskellunge, among others.

Open Water and Winter Creel Surveys

Total Annual Cost: Open Water- $20,000, Winter- $11,000

Creel surveys provide valuable information pertaining to angler harvest levels and the effects of regulation changes on angler effort and harvest. As noted in the previous management plan, creel surveys represent the only continuous data set for Lake Nipissing. The value of having such a trend through time picture cannot be overstated. In the absence of having updated creel survey information, the effects of new regulations cannot be sufficiently evaluated, nor can a relevant harvest estimate be obtained.

Assessing Other Species

The 2000-2009 Fisheries Assessment Plan for Lake Nipissing identifies a number of assessment requirements pertaining to fish populations other than walleye in Lake Nipissing. A complete implementation schedule can be found within the 2000-2009 Fisheries Assessment Plan for Lake Nipissing, which will require some adjustments to recognize changing needs.
Nearshore Community Index Netting (NSCIN)
Total Cost (per Survey): $2,000

This survey technique is conducted in the summer (Aug-Sept), and is a valuable tool for assessing nearshore fish communities.

Ice-out Trapnetting

Total Cost (per Survey): $2,000

As noted in the existing assessment plan, ice-out trapnetting has been used in other jurisdictions as a northern pike assessment tool. Conducted at the beginning of spring, this assessment technique has also proven very useful gaining valuable information pertaining to muskellunge population.

Adult Sturgeon Assessment

Total Annual Cost: $2,000

The Ministry of Natural Resources had been attempting to assess the remnant adult sturgeon population in Lake Nipissing. Using large mesh gillnets, these fish have been captured during the spring spawning period at the two main spawning sites. Such a survey provides valuable information used to characterize this population.

A complete funding summary for core assessment projects can be found within the Fisheries Assessment Plan for Lake Nipissing (2000-2009). This assessment plan will be updated to provide guidance up to and including 2010.

Other Funding Requirements

Enforcement: New Fishing Regulations

Total Cost: $10,000

On January 1, 2007 the MNR will implement a series of regulation changes on Lake Nipissing. Such changes will include an extension to both the fall and winter angling seasons. An increased enforcement presence will be required to assess angler compliance rates during the first year of implementation.

Enforcement & Monitoring: ACFL (May-December)

Total Annual Cost: $10,000

Until accurate commercial harvest reporting is received from Nipissing First Nation, MNR will continue to actively monitor commercial fishing activities. These efforts will require funding that is in addition to the annual district enforcement budget.
7.0 REFERENCES


