

Thunder Bay National Marine Sanctuary

**A Federal/State Partnership for the Management
of Underwater Cultural Resources**



**Final Environmental Impact Statement/
Management Plan**

May 1999



U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Office of Ocean and Coastal Resource Management



ACKNOWLEDGMENTS

The Thunder Bay region contains a large concentration of shipwrecks that span more than a century of Great Lakes maritime history. In 1981, the State of Michigan designated the Thunder Bay Underwater Preserve to protect Thunder Bay's shipwrecks. Some people believed, however, that the collection of shipwrecks was deserving of national recognition and support by the National Marine Sanctuary Program. This Final Environmental Impact Statement/Management Plan represents years of ideas, meetings, and recommendations on how Thunder Bay's underwater cultural resources could best be managed and protected for the appreciation of all interested individuals. Since 1991, many individuals, groups, and government agencies have contributed to the preparation of the Final Environmental Impact Statement/ Management Plan (FEIS/MP).

The National Marine Sanctuary Program staff would like to thank all members of the Sanctuary Advisory Counsel and the Thunder Bay Core Group who dedicated many hours to evaluating what a Thunder Bay National Marine Sanctuary could accomplish.

Many Alpena community leaders and other individuals have been active in the process to determine whether Thunder Bay should be designated as a National Marine Sanctuary. Their perspective and participation has been invaluable.

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Michigan State University's Department of Park, Recreation and Tourism Resources, Department of Anthropology, and Department of Fisheries and Wildlife all contributed to the FEIS/MP. In particular, the Center for Maritime and Underwater Resource Management provided invaluable assistance in writing parts of the document and preparing the Draft Environmental Impact Statement/Draft Management Plan document for publication.

The Program staff would like to thank the agencies of the State of Michigan, especially staff in the Department of Environmental Quality, Department of State, and Department of Natural Resources. NOAA staff could not have written this document without the expertise of these state agency staff. The Governor's office has been instrumental in bringing together the state agencies and offering support to the process of determining the feasibility of a Thunder Bay National Marine Sanctuary.

ABSTRACT

This abstract describes the Final Environmental Impact Statement and Management Plan (FEIS/MP) for the Thunder Bay National Marine Sanctuary. The National Oceanic and Atmospheric Administration (NOAA) proposes to designate waters encompassing and surrounding Thunder Bay on Lake Huron as a National Marine Sanctuary, in partnership with the State of Michigan. The Sanctuary boundary, as proposed in the FEIS/MP, extends from Presque Isle Lighthouse, south to Sturgeon Point Lighthouse, and lakeward to longitude 83 degrees west. In total, the Sanctuary encompasses 808 square miles. The Thunder Bay National Marine Sanctuary will establish partnerships among governmental and non-governmental entities for comprehensive management of Thunder Bay's underwater cultural resources.

The Thunder Bay region contains about 160 shipwrecks that span more than a century of Great Lakes maritime history. Based on studies undertaken to date, there is strong evidence of Thunder Bay's national historic significance. National significance is attached to the entire collection of shipwrecks in the Thunder Bay region, as well as to individual vessels.

In 1981, Thunder Bay was established as the first State of Michigan Great Lakes Bottomland Preserve (commonly termed underwater preserve) to protect abandoned underwater cultural resources. NOAA recognizes the state's achievements and commitment to protection of Thunder Bay's underwater cultural resources. NOAA also recognizes the need to complement and supplement these achievements by working with the state to achieve comprehensive management of these underwater cultural resources, including development of education and research programs. The limited financial support available for management efforts at both state and local levels strengthens the need for partnerships among the state, local communities, and the National Marine Sanctuary Program.

The purposes of the Thunder Bay National Marine Sanctuary are to work cooperatively with local, state, federal, and tribal agencies, organizations, and businesses to:

- complement existing management and enforcement authorities protecting underwater cultural resources;
- provide educational opportunities that promote understanding, appreciation, and involvement in the protection and stewardship of underwater cultural resources;
- develop scientific knowledge and enhance management practices related to underwater cultural resources by encouraging research and monitoring programs; and
- encourage the exchange of knowledge and expertise to enhance sustainable uses of the

Great Lakes and other underwater cultural resources.

Section 1 of the FEIS/MP provides an overview of the document. Section 2 describes the background of the Thunder Bay National Marine Sanctuary.

The Management Plan (MP), Section 3 of the FEIS, is a proposed five-year plan describing the management (administration and resource protection), education, and research programs for the Sanctuary. The MP also identifies a variety of possible activities within these programs. For example, part of the education program could include establishing a remote video hook-up of researchers documenting the shipwrecks. Use of this technology would provide visual access to shipwrecks for non-divers.

Section 4 provides management background and historical context of the Thunder Bay region. It includes information on the region's underwater cultural resources, an analysis of the national historic significance of the shipwrecks, and a description of the maritime cultural landscape (e.g., history, past and present human activities, environmental conditions, and natural resources).

Section 5 provides an analysis of the alternatives put forth by NOAA for designating and managing the Thunder Bay National Marine Sanctuary. The four sets of alternatives address designation, boundaries, regulations, and permit administration.

Section 6 provides an analysis of the environmental and social-economic impacts of Sanctuary designation. No adverse environmental or social-economic impacts are anticipated as a result of Sanctuary designation at Thunder Bay. Potential positive economic impacts to the region are estimated in this section. The presence of a National Marine Sanctuary at Thunder Bay is expected to enhance local and regional economies by virtue of increased visitation and tourism in Alpena and surrounding communities. The possible establishment of a Maritime Heritage Center, in cooperation with the state and local partners, is expected to increase understanding and appreciation for the Great Lakes maritime heritage.

The appendices include NOAA's responses to public comments, as well as federal and state laws applicable to the designation and management of the Sanctuary.

Lead Agency: U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Ocean and Coastal Resource Management
Marine Sanctuaries Division

Contacts: Ellen Brody, Project Coordinator
Thunder Bay National Marine Sanctuary
NOAA
2205 Commonwealth Blvd.
Ann Arbor, MI 48105-2945
(734) 741-2270

-or-

Sherrard Foster, Program Specialist
Marine Sanctuaries Division
Office of Ocean and Coastal Resource Management
National Ocean Service/NOAA
1305 East-West Highway - SSMC4
Silver Spring, MD 20910
(301) 713-3125, extension 151

ACRONYMS

ANGB	Air National Guard Base
AQCR	Air Quality Control Region
ASA	Abandoned Shipwreck Act
BGSU	Bowling Green State University
CFR	Code of Federal Regulations
CGLAS	Center for Great Lakes and Aquatic Sciences
CILER	Cooperative Institute for Limnology and Ecosystems Research
CMURM	Center for Maritime and Underwater Resource Management
COTFMA	Chippewa-Ottawa Treaty Fishery Management Authority
DEIS	Draft Environmental Impact Statement
DEQ	Department of Environmental Quality
DMP	Draft Management Plan
DNR	Department of Natural Resources
DOI	Department of the Interior
DOS	Department of State
EIA	Economic Impact Assessment
EIS	Environmental Impact Statement
ERIM	Environmental Research Institute of Michigan
FCMP	Fish Contaminant Monitoring Program
FEIS	Final Environmental Impact Statement
GLERL	Great Lakes Environmental Research Laboratory
GLFC	Great Lakes Fishery Commission
GLNPO	Great Lakes National Program Office
GLV/R	Great Lakes Visual/Research, Inc.
IJC	International Joint Commission
LAMP	Lakewide Management Plan
MCMP	Michigan Coastal Management Program
MDPH	Michigan Department of Public Health
MOA	Military Operating Area
MOU	Memorandum of Understanding
MP	Management Plan
MSGCP	Michigan Sea Grant College Program
MSTA	Michigan Science Teachers Association

(continued on next page)

MSU	Michigan State University
MTTRRC	Michigan Travel, Tourism and Recreation Resource Center
NEMCOG	Northeast Michigan Council of Governments
NEPA	National Environmental Policy Act
NMS	National Marine Sanctuary
NMSA	National Marine Sanctuaries Act
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NRC	Natural Resources Commission
PAH	Polynuclear aromatic hydrocarbons
PCB	Polychlorinated biphenyls
SAC	Sanctuary Advisory Council
SAR	Search and Rescue
SEL	Site Evaluation List
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

NOTE TO READER

A. National Environmental Policy Act (NEPA)

This document is both a Final Environmental Impact Statement (FEIS) and a Management Plan for the Thunder Bay National Marine Sanctuary. Some of the section headings, and the order in which they are presented, are different from those frequently found in other environmental impact statements. To assist NEPA reviewers, the following table has been developed. Topics normally addressed in an EIS document are listed under the heading "NEPA Requirement." The corresponding section of this document and the page numbers are provided in the other two columns.

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B. Endangered Species Act (ESA)

Pursuant to Section 7 of the Endangered Species Act, the Fish and Wildlife Service of the U.S. Department of the Interior was consulted in the performance of the biological assessments of possible impacts on threatened or endangered species that might result from the designation of a National Marine Sanctuary at Thunder Bay. There are no endangered fish or bird species; there is one threatened bird (the Bald Eagle).

C. Resource Assessment

The National Marine Sanctuaries Act, as amended, requires a resource assessment report documenting present and potential uses of the proposed Sanctuary area, including uses subject to the primary jurisdiction of the U.S. Department of the Interior. This requirement has been met in consultation with the Department of the Interior, and the resource assessment report is contained in Section 4, The Sanctuary Setting.

D. Federal Consistency Determination

Section 307 of the Coastal Zone Management Act of 1972, as amended, requires that each Federal agency conducting or supporting activities directly affecting the coastal zone shall conduct or support those activities in a manner which is, to the maximum extent practicable, consistent with the approved state coastal management program. This requirement will be met through a federal consistency determination made by NOAA to the Michigan Coastal Management Program, that the designation of Thunder Bay National Marine Sanctuary is consistent, to the maximum extent practicable, with the Michigan Coastal Management Program.

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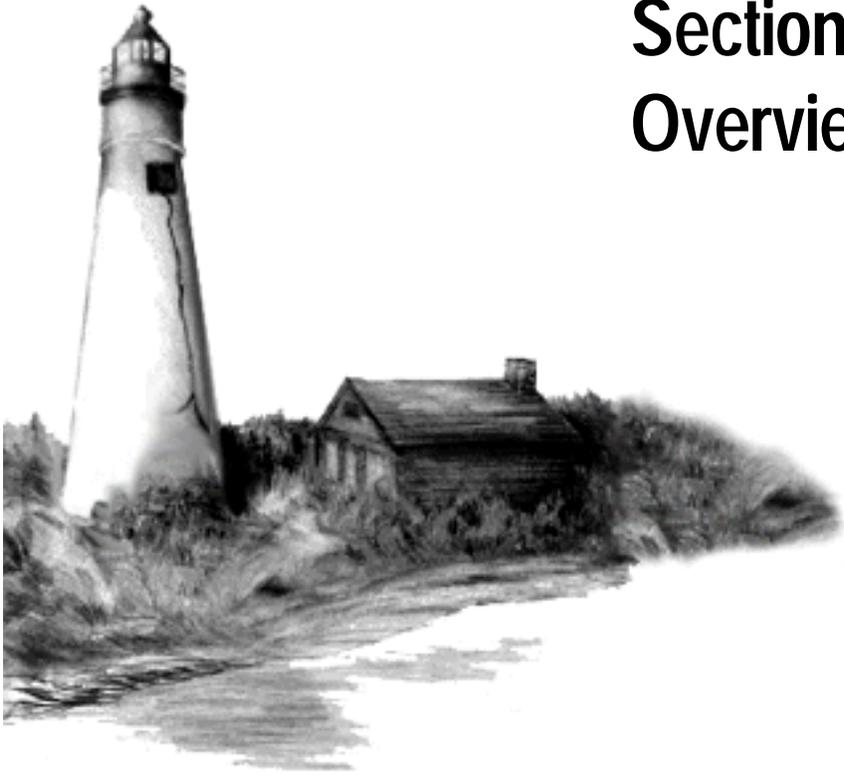
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Section 1 Overview

SECTION 1

OVERVIEW

Introduction

The Final Environmental Impact Statement/Management Plan (FEIS/MP) details the proposal to designate Thunder Bay and surrounding waters on Lake Huron as a National Marine Sanctuary (NMS). The FEIS/MP also responds to public comments received on the proposal during the feasibility process. Designation of the Thunder Bay NMS will establish a partnership between the National Oceanic and Atmospheric Administration (NOAA) and the State of Michigan for the cooperative management and protection of the Thunder Bay area's underwater cultural resources.

The purpose of this section is to provide the reader with a brief summary of the FEIS/MP. For a complete understanding of the proposal to designate the Thunder Bay NMS, refer to Sections 2–6 of this document.

Vision Statement for the Thunder Bay National Marine Sanctuary

To establish a National Marine Sanctuary that actively promotes education and research on the underwater cultural resources of the Thunder Bay region, and that creates a framework for comprehensive protection and management that relies on governmental cooperation and citizen participation.

Key Points

- Designation of a Thunder Bay NMS will establish a partnership between NOAA and the State of Michigan for the cooperative management and protection of Thunder Bay's underwater cultural resources.
- Underwater cultural resources include shipwrecks, historical remnants of docks and piers, and materials from historic and prehistoric Native Americans.
- The underwater cultural resources and maritime heritage of the Thunder Bay region are nationally significant. Management of these resources will ensure their recreational, education, and scientific value for present and future generations.
- The Thunder Bay NMS will be managed in cooperation with state and local agencies as well as private and nonprofit organizations, including the local Sanctuary Advisory Council.
- Sanctuary education programs will promote understanding, appreciation and involvement in the protection and stewardship of underwater cultural resources.
- The knowledge gained through Sanctuary

research and monitoring programs will be used to evaluate existing management practices, enhance future management decisions, and educate the public.

○ The Memorandum of Understanding and Programmatic Agreement detail the roles of NOAA, the State of Michigan, and the Federal Advisory Council on Historic Preservation in the management of the Sanctuary.

What is the National Marine Sanctuary Program?

In response to growing public concern for the environmental and cultural value of our coastal waters, Congress passed the Marine Protection, Research and Sanctuaries Act of 1972 (now known as the National Marine Sanctuaries Act). The Act authorizes the Secretary of Commerce to identify, designate, and manage marine and Great Lakes areas of national significance as National Marine Sanctuaries. The National Oceanic and Atmospheric Administration (NOAA) administers the National Marine Sanctuary Program, within the U.S. Department of Commerce.

The mission of the National Marine Sanctuary Program is to identify, designate and manage areas of the marine environment of special national significance due to their conservation, recreational, ecological, historical, research, educational or aesthetic qualities. Management of these areas is guided by the overriding goal of resource protection. Sanctuary stewardship,

education, and research programs help meet this goal.

Since 1972, twelve National Marine Sanctuaries have been designated. They include nearshore coral reefs and open ocean, and range in size from less than one to over 5,300 square miles. National Marine Sanctuaries are designated based on differing resources and management needs at individual sites. Although many National Marine Sanctuaries protect nationally significant natural resources, the first National Marine Sanctuary, designated in 1975, protects the nationally significant cultural resources found at the site of the *Monitor*, located offshore of Cape Hatteras, North Carolina.

Why Designate a Thunder Bay National Marine Sanctuary?

○ NATIONAL HISTORIC SIGNIFICANCE

The Thunder Bay region boasts an impressive array of underwater cultural resources including shipwrecks, historical remnants of docks and piers, and materials from historic and prehistoric Native Americans. In particular, the area contains a nationally significant collection of approximately 160 shipwrecks that spans over a century of Great Lakes shipping history. Although many of these wrecks have been identified, many more are thought to be in the area and have yet to be located. Collectively, Thunder Bay's shipwrecks represent a "microcosm" of the Great Lakes commercial shipping industry as it developed over the last

two hundred years. The sunken vessels reflect transitions in ship architecture and construction methods, from wooden sailboats to early steel-hulled steamers.

National significance is attached to the entire collection of shipwrecks in the Thunder Bay region, as well as to individual vessels. A large collection of shipwrecks exists in the Thunder Bay region, including virtually all types of vessels used on the open Great Lakes. Thunder Bay is the final resting place for an unusually large number of steel propellers, particularly from the critical decades when changes in vessel design were rapid and short-lived (i.e., 1880 – 1920). Thunder Bay shipwrecks were engaged in all major trades at the time of loss. Thunder Bay is particularly strong in vessels engaged in the trades that were the backbone of Great Lakes commerce: wood products, grain, iron ore, coal, and passenger/package freight.

In addition to being nationally significant, a recent study indicates that the collection of wrecks in and around Thunder Bay is qualified for National Historic Landmark status and that the region should qualify for the National Register of Historic Places (Martin 1996). The study also led to six major conclusions regarding the shipwrecks of Thunder Bay:

- (1) they are representative of the composition of the Great Lakes merchant marine for the period 1840 – 1970;
- (2) they may be used to study and interpret the

various phases of American westward expansion via the Great Lakes;

- (3) they may be used to study and interpret the growth of the American extraction and use of natural resources;
- (4) they may be used to discuss various phases of American industrialization;
- (5) one vessel (*Isaac M. Scott*) may be used to study and interpret a specific event (the Great Storm of 1913) that had strong repercussions regionally, nationally, and internationally; and
- (6) they provide important material for the interpretation of American foreign intercontinental trade in the Great Lakes context.

All of these areas of study will help to create a better understanding and interpretation of events that shaped the broad patterns of American history and culture.

○ **COOPERATIVE MANAGEMENT OF NATIONALLY SIGNIFICANT UNDERWATER CULTURAL RESOURCES**

In 1981, Thunder Bay was established as the first State of Michigan Great Lakes Bottomland Preserve (commonly termed underwater preserve). Underwater preserves are established to protect “abandoned property of historical value, or ecological, educational, geological, or scenic features or formations

having recreational, educational, or scientific value.” The Thunder Bay Underwater Preserve totals 288 square miles, extending from Middle Island (at the northern edge of Alpena County), south to South Point (at the southern edge of Alpena County), and extending from the ordinary high water mark along the shores of Thunder Bay east to the 150-foot contour line in Lake Huron. Because of increasing public interest in underwater cultural resources, the discovery, exploration, documentation, and study of shipwrecks will continue to be important activities in the Thunder Bay region and the Great Lakes. Comprehensive and long-term management is important for Thunder Bay, particularly as public interest in its nationally significant collection of shipwrecks increases.

NOAA recognizes the state’s achievements and commitment to the protection of Thunder Bay’s underwater cultural resources, particularly the establishment of Thunder Bay as a state underwater preserve. NOAA also recognizes the need to complement and supplement these achievements by working with the state to achieve comprehensive management of the Thunder Bay region’s underwater cultural resources, including education and research programs.

NOAA and the State of Michigan have entered into a Memorandum of Understanding (MOU). The MOU clarifies the relative jurisdiction, authority, conflict resolution, and conditions of the NOAA-State partnership for managing the Thunder Bay NMS. It confirms the State’s

continuing sovereignty and jurisdiction over its State waters, submerged lands, and other resources within the Sanctuary.

The administrative roles and responsibilities of the State of Michigan, NOAA, and the federal Advisory Council on Historic Preservation are described in the Programmatic Agreement. In particular, the Programmatic Agreement documents permit procedures and criteria, and each agency’s responsibilities in terms of permits. The Programmatic Agreement also describes the underwater cultural resource protection, education and research goals, and high priority projects for the first five years.

The MOU and Programmatic Agreement both reflect public comments received during the designation process, including substantial local input by the Sanctuary Advisory Council. The MOU and Programmatic Agreement are attached at the end of the MP on pages 75 – 91. Additional MOUs may be developed for Sanctuary enforcement activities, or other Sanctuary activities as deemed necessary by NOAA, the State of Michigan, and local communities.

Limited financial support for management efforts at both state and local levels strengthens the need for partnerships among the state, local communities, and the National Marine Sanctuary Program. Designation of Thunder Bay as a National Marine Sanctuary will establish partnerships, in which resources can be shared to achieve comprehensive management and protection of Thunder Bay’s underwater cultural

resources through research, monitoring and education.

How Did We Get Here?

Since the early 1970s, members of the Alpena community have been interested in the potential for development of an underwater park featuring the shipwrecks in the Thunder Bay region.

Based on studies that documented the presence in Thunder Bay of a large number of shipwrecks, and with the support of a local diving club and other civic organizations, Thunder Bay became the first State of Michigan underwater preserve in 1981. The Preserve, as other preserves to follow, was established to protect and preserve bottomland and surface water areas containing abandoned property of cultural or recreational value.

During the same period of time, NOAA was developing a Site Evaluation List (SEL) of potential candidates for designation as National Marine Sanctuaries. In 1983, NOAA placed Thunder Bay, as one of five Great Lakes areas, on the final SEL.

In 1991, NOAA elevated the Thunder Bay site from the SEL to become an *active candidate* for National Marine Sanctuary designation. Over the next three years there followed a series of meetings to bring together governmental and non-governmental entities to discuss the scope of a National Marine Sanctuary at Thunder Bay.

In 1994, a Thunder Bay Core Group was

formed, whose members represented local, state, federal and tribal agencies. The Core Group assisted in the development and review of management alternatives, in cooperation with a variety of community interests. By mid-1995, the Core Group had narrowed the management focus of a potential Thunder Bay NMS to underwater cultural resources. This recommended focus was presented and agreed upon at an Alpena community meeting in June 1995. The Core Group rejected management of natural resources. Since that time, development of the Draft Environmental Impact Statement/Draft Management Plan (DEIS/DMP) and the FEIS/MP has proceeded in accordance with the 1995 recommendations of the Core Group.

In August 1997, a Thunder Bay Sanctuary Advisory Council (SAC) was selected and appointed. The purpose of the SAC was to provide recommendations to NOAA and the Governor of Michigan on the DEIS/DMP for the Sanctuary. The SAC also met during the Spring and Summer of 1998 to provide input to NOAA on the Memorandum of Understanding, the Programmatic Agreement, and other issues related to the Sanctuary. NOAA used these recommendations and this input to resolve many of the issues of concern to the public regarding the Sanctuary.

NOAA received 62 comments on the DEIS/DMP. Additionally, at three public hearings in Alcona, Alpena, and Presque Isle Counties held by NOAA, 27 persons testified on the proposed Sanctuary. In response to these comments,

NOAA made appropriate changes in the FEIS/MP. NOAA also added Appendix A to the FEIS/MP, which responds to public comments.

NOAA'S Proposal for a National Marine Sanctuary

○ MANAGEMENT PLAN

Section 3 of this document presents the Management Plan (MP) for the Thunder Bay National Marine Sanctuary. The MP is a five-year plan describing the management (administration and resource protection), education, and research programs for the Sanctuary. The MP also identifies a variety of possible activities within those programs. Individual strategic plans will be developed for each of these programs. The Sanctuary Advisory Council will play a critical role in the development of these plans.

MANAGEMENT PROGRAM: Operating and Protecting the Sanctuary in Partnership

○ ADMINISTRATION PROGRAM

The Sanctuary's Administration Program focuses on the roles and responsibilities of the agencies, organizations, and businesses that will be involved in operation of the Sanctuary. Successful operation of the Sanctuary is possible only through cooperative efforts of appropriate governmental and non-governmental entities. The Management Plan discusses potential

Sanctuary staff and facilities, including staff roles, establishment of an office in Alpena, possible satellite offices (as future needs are identified), and development of a Maritime Heritage Center in partnership with others.

The establishment of a Sanctuary Advisory Council (SAC) is an important mechanism to provide advice and recommendations to the Sanctuary Manager about issues related to Sanctuary programs and implementation. The SAC will encourage community participation in the management of the Sanctuary.

A five-year projection of Sanctuary activities, estimated financial obligations, and economic impacts of the Sanctuary operating budgets and cost-share partnerships is provided in Table 3.4 of the MP.

○ RESOURCE PROTECTION PROGRAM

The Sanctuary's Resource Protection Program's primary function is to ensure, through cooperative stewardship, the protection of Thunder Bay's underwater cultural resources for their long-term integrity and use. Cooperative stewardship, as described by the Michigan Underwater Preserve Council and other organizations, involves the active participation in resource protection activities by agencies, organizations, and businesses. Stewardship is important to achieving this primary goal, as is Sanctuary coordination with existing state and regional underwater cultural resource protection plans.

Priorities for Sanctuary resource protection activities will be incorporated into an Underwater Cultural Resource Protection Plan. Possible activities for underwater cultural resource protection include the following:

- Develop and maintain a mooring buoy system.
- Facilitate coordination among management agencies having responsibilities for the Thunder Bay maritime heritage cultural landscape.
- Support a scientific research and monitoring program that focuses on underwater cultural resources.
- Cross-deputize and support law enforcement personnel to enforce Sanctuary regulations.

EDUCATION PROGRAM:

Learning to be Better Cooperative Stewards

The Sanctuary Education Program's primary function is to promote understanding, appreciation, and involvement in the protection and stewardship of Thunder Bay's underwater cultural resources. Priority activities include a wide range of programs, facilities, and services offered through schools, and interpretation and outreach activities. Program activities will support the priorities of the Michigan underwater preserves, particularly those of the Thunder Bay Underwater Preserve. Sanctuary education activities will complement existing efforts relating to underwater cultural resources and the Thunder Bay area's maritime heritage.

Priorities for Sanctuary education activities will be incorporated into an Education Plan. Possible Sanctuary education activities include the following:

- Develop the concept for and secure the funding for the establishment of a Maritime Heritage Center. Such a facility provides education and research opportunities for both residents and tourists.
- Acquire a Sanctuary education/research vessel. This facilitates access to Sanctuary underwater cultural resources by allowing on-the-water education and research activities.
- Establish remote video hook-ups of researchers documenting the shipwrecks. This technology provides visual access to shipwrecks for non-divers.
- Select and interpret a series of shipwrecks as a "shipwreck trail" to highlight Thunder Bay's maritime heritage. Interpretive materials will be developed for both divers and non-divers.
- Designate an annual week-long celebration that highlights special events for school children to kindle an interest in Great Lakes maritime heritage.
- Produce an historical guide to maritime resources in the Thunder Bay NMS. The guide will interpret the maritime history of the Thunder Bay area, and involve local communities in discovering and documenting their maritime heritage.
- Identify and support a network of volunteers to help enhance and maintain maritime

heritage education activities and projects.

- Encourage and develop the use of educational technologies in supporting maritime heritage education.
- Develop public outreach activities to promote the Sanctuary locally, regionally, and nationally.
- Support, complement, and enhance existing maritime heritage education efforts, and develop and maintain new education initiatives as appropriate.

RESEARCH PROGRAM:

Working Together to Better Understand Thunder Bay's Underwater Cultural Resources and Maritime Heritage

The Sanctuary Research Program focuses on acquiring knowledge about Thunder Bay's underwater cultural resources through research and monitoring programs. This knowledge is used to evaluate existing management programs, enhance future management decisions, and educate the public. These goals are possible only through active participation of governmental and non-governmental entities interested in comprehensive management of underwater cultural resources. The Sanctuary Research Program will complement the Michigan underwater preserve program by supporting the inventory, assessment, and monitoring of Sanctuary underwater cultural resources. The Sanctuary Research Program also will complement the Michigan Department of State's goal of documenting more fully Michigan's historic resources.

Priorities for Sanctuary research activities will be incorporated into a Research Plan. Possible Sanctuary research activities include the following:

- Locate, inventory, and document the shipwrecks. This information will be used to nominate the collection of shipwrecks as a National Historic Landmark.
- Establish a monitoring program for the shipwrecks. The first step is to document baseline conditions.
- Obtain additional information from archives, site maps, photographs and other historical sources to supplement the shipwreck inventory.
- Maintain in one place all information relating to each vessel including field notes, historical information, photographs, videotapes, site maps, drawings, inventory forms, and reports. All such documentation shall be available to the public for interpretive and educational purposes.
- Monitor the impact of zebra mussels on shipwrecks.

NOAA'S Preferred Alternatives

Section 5 of this document provides an analysis of the alternatives put forth by NOAA for designation and management of the Thunder Bay NMS. Section 6 of this document discusses the environmental and social-economic consequences of the alternatives. The four sets of alternatives address designation, boundaries, regulations, and permit administration. The

complete discussion and analysis is contained in Section 5 and Section 6.

NOAA's preferred alternatives are the following:

○ **SANCTUARY DESIGNATION**

NOAA proposes to designate Thunder Bay and surrounding waters on Lake Huron as a National Marine Sanctuary. Designation of a Thunder Bay NMS will establish a partnership between NOAA and the State of Michigan for the cooperative management and protection of Thunder Bay's underwater cultural resources. NOAA will also work in conjunction with other agencies as well as private and nonprofit organizations to protect the area's underwater cultural resources, develop educational activities, and conduct research and monitoring. The vision for the Sanctuary includes a suite of activities that could include live video hook-ups from the shipwrecks to classrooms, a "shipwreck trail," educational programs related to Great Lakes maritime heritage, and research that better identifies and documents the importance of the Thunder Bay shipwrecks.

○ **BOUNDARY**

NOAA proposes a Sanctuary boundary that will run along the ordinary high water mark of Lake Huron from Presque Isle Lighthouse, south to Sturgeon Point Lighthouse, and lakeward to longitude 83 degrees west. The total Sanctuary will encompass 808 square miles. This is NOAA's preferred boundary because it protects

a collection of nationally significant shipwrecks that are representative of Great Lakes maritime history. The boundary also complements and enhances the cultural landscape and maritime history of the Thunder Bay region. The boundary is readily identifiable to Sanctuary visitors, staff, enforcement personnel and by other agencies with management responsibilities in the area. It also provides high quality access for visitors using Sanctuary resources and for Sanctuary staff interacting with visitors.

○ **REGULATORY**

NOAA proposes to adopt regulations that are generally used in other National Marine Sanctuaries to protect underwater cultural resources. The regulations are consistent with the purpose and intent of State of Michigan law.

The Sanctuary regulations prohibit recovering, altering, destroying, possessing, or attempting to recover, alter, destroy, or possess an underwater cultural resource. The regulations prohibit the alteration of the lakebottom if such an activity causes an adverse impact on underwater cultural resources. Sanctuary regulations also prohibit the use of grappling hooks or other anchoring devices on underwater cultural resource sites that are marked with a mooring buoy.

Sanctuary regulations expand coverage to all underwater cultural resources, not just "abandoned" resources. The Sanctuary regulations, therefore, serve as a federal safety net for underwater cultural resources that the

State of Michigan may be unable to protect under state law or the federal Abandoned Shipwreck Act.

○ **ADMINISTRATIVE**

NOAA proposes to rely on the well-established existing state permitting program for many of the permits that will be issued. If Sanctuary concerns can be addressed through the issuance of a state permit and through Section 106 of the National Historic Preservation Act, NOAA does not believe that a separate Sanctuary permit is necessary. If the applicant is applying for a permit to conduct an activity that is already regulated by the State of Michigan, the applicant will not do anything different if the Sanctuary is designated.

NOAA's preferred administrative alternative also allows Sanctuary concerns to be addressed through the review and authorization by NOAA of the issuance of federal permits. The permit applicant applies for a federal permit (e.g., from the Corps of Engineers). NOAA will work with the federal agency to ensure that there will be no adverse impact on underwater cultural resources; this results in the authorization of the federal permit.

NOAA believes that either an existing state or federal permit will cover the great majority of activities in the Sanctuary. NOAA expects, therefore, that few applicants will be required to obtain a Sanctuary permit that will be issued by NOAA.

Social-Economic Impacts

The social-economic impacts of Sanctuary designation are anticipated to be positive both for the public and the economy of the Thunder Bay region. Sanctuary designation not only will increase the number of visitors to the region, but will provide recognition, accessibility and opportunities that will improve the quality of the experiences for tourists, as well as the quality of life for residents. The Sanctuary will provide a focus and mechanism for the partnerships needed to develop facilities, services, and programs meaningful to visitors and local residents, while protecting the underwater cultural resources upon which recreation and tourism is based. For example, the possible establishment of a Maritime Heritage Center is expected to increase understanding and appreciation for Great Lakes underwater cultural resources.

Because the Sanctuary will not regulate natural resources, designation of the Sanctuary will not adversely impact the region's natural resources. Designation of Thunder Bay NMS will provide positive environmental impacts and associated positive economic impacts from scuba diving and heritage tourism. Management strategies will facilitate compatible multiple uses of the underwater cultural resources in a manner that avoids or minimizes negative impacts to these resources.

What is Next in the Process?

Copies of this document were provided to the Governor's Office, the Michigan Congressional Delegation, and the Senate and House Committees with jurisdiction over the National Marine Sanctuary Program. During this same time period, a notice announcing the availability of the FEIS/MP was published in the Federal Register. If, based on public and state support, NOAA decides to designate the Sanctuary, NOAA will publish a Notice of Designation in the Federal Register.

Beginning with the publication date of that notice, the Congressional Committees and the Governor's Office have 45 days of continuous Congressional session to review the FEIS/MP and take action. During this 45-day review period, the Governor may certify to the Secretary of Commerce (NOAA) that the designation or any of its terms is unacceptable, in which case, the designation will not occur in regard to those terms. The Sanctuary and its regulations will take effect at the end of the 45-day review period; a final Federal Register notice will announce the effective date of the Sanctuary's regulations.

Section 2 Background



SECTION 2

BACKGROUND

- The mission of the National Marine Sanctuary Program is to serve as the trustee for the nation's system of marine protected areas, as well as to conserve, protect, and enhance the biodiversity, ecological integrity, and cultural legacy of these ecosystems.
- The Thunder Bay National Marine Sanctuary is the *collaborative effort* of governmental and non-governmental entities to *comprehensively manage* the underwater cultural resources of the region in the context of its cultural landscape.
- The Thunder Bay region will be:
 - the first freshwater and Great Lakes National Marine Sanctuary
 - the only National Marine Sanctuary located entirely within state waters;
 - the first National Marine Sanctuary to focus solely on a large collection of underwater cultural resources.
- There are currently 12 National Marine Sanctuaries designated in the United States and Pacific Territories.

A. INTRODUCTION

The Final Environmental Impact Statement/Management Plan (FEIS/MP) is an important step in the process to determine the feasibility of the Thunder Bay National Marine Sanctuary (NMS) in Lake Huron. It is a reflection of the many hours of work contributed by numerous volunteers, agency representatives, and political officials. The FEIS/MP incorporates the best available information on the resources and activities of the Thunder Bay region. It is designed to encourage understanding, careful thought, as well as respond to public comments regarding the designation of the Thunder Bay NMS.

1. WHAT IS THE THUNDER BAY NATIONAL MARINE SANCTUARY?

The Thunder Bay NMS is the collaborative effort of governmental and non-governmental entities to *comprehensively manage the underwater cultural resources* of the Thunder Bay region in the context of its *cultural landscape*.

- *Comprehensive management* involves the protection of resources using sound management practices that incorporate scientific knowledge developed through research and monitoring programs. Comprehensive management is dependent on community support, understanding, and participation in sustainable use and stewardship of public resources.

○ *Underwater cultural resources* are submerged watercraft and their associated artifacts. The definition also includes historical remnants of docks and piers, as well as materials resulting from activities of historic and prehistoric Native Americans. A more detailed definition can be found on page 59.

○ A *cultural landscape* is a geographic area including both cultural and natural resources, coastal environments, human communities, and related scenery, that is associated with historic events, activities, or persons, or exhibits other cultural or aesthetic values (NPS 1992).



Great Lakes Visual/ Research, Inc.

PURPOSES

The purposes of the Thunder Bay NMS are to work cooperatively with governmental and non-governmental entities to:

- complement and supplement existing management and enforcement authorities protecting underwater cultural resources;
- provide educational opportunities that promote understanding, appreciation, and involvement in the protection and stewardship of underwater cultural resources;
- develop scientific knowledge and enhance management practices related to underwater cultural resources by encouraging research and monitoring programs; and
- encourage the exchange of knowledge and expertise to enhance sustainable uses of the Great Lakes and underwater cultural resources.

Figure 2.1 Scuba diver explores the shipwreck *Monohansett* in Thunder Bay.

2. WHAT IS THE NATIONAL MARINE SANCTUARY PROGRAM?

In response to a growing awareness of the natural, cultural, and historical values of our oceanic, Great Lakes, and coastal waters, Congress passed Title III of the Marine Protection, Research and Sanctuaries Act in 1972 (16 U.S.C. 1431 *et seq.*). In 1992, Title III was amended and renamed the National Marine Sanctuaries Act. The Act was most recently amended in 1996 (P. L. 104 – 283). The Act authorizes the Secretary of Commerce to identify, designate, and comprehensively manage marine and Great Lakes areas of special national significance as National Marine Sanctuaries. The NMS Program is administered by the National Oceanic and Atmospheric Administration (NOAA) within the U.S. Department of Commerce.

National Marine Sanctuaries promote comprehensive management of nationally significant ecological, historical, recreational, and aesthetic marine resources. National Marine Sanctuaries may be designated in coastal and ocean waters, in submerged lands, and in the Great Lakes and their connecting waters. Currently, twelve National Marine Sanctuaries have been designated and include near-shore and open ocean waters ranging in size from less than one square nautical mile to more than 5,000 square nautical miles. National Marine Sanctuaries encompass a fascinating array of plants and animals, from humpback whales to sea anemones, and a

variety of historical resources, such as the U.S. Civil War ironclad ship *Monitor*.

National Marine Sanctuaries are cherished recreational destinations for scuba diving, sport fishing, and wildlife viewing, and support valuable commercial industries, such as fishing, boating, diving, and tourism. Sanctuaries may provide a secure habitat for endangered and rare species, and protect historically significant shipwrecks and cultural artifacts.

MISSION

The mission of the National Marine Sanctuary Program is to serve as the trustee for the nation's system of marine protected areas, as well as to conserve, protect, and enhance the biodiversity, ecological integrity, and cultural legacy of these ecosystems.

GOALS

The goals of the NMS Program (NOAA 1994) are to:

- Ensure the health and integrity of Sanctuary resources by protecting biodiversity, biological productivity, cultural resources, and areas of pristine condition.
- Broaden the scope of the Sanctuary system by including a diversity of nationally significant marine and Great Lakes areas especially valued for their ecological and cultural qualities.
- Enhance Sanctuary management by adopting policies, practices, and initiatives that ensure the compatibility of human activities with long-term protection of Sanctuary resources.

- Develop scientific understanding by encouraging research and monitoring programs yielding information that can be used to evaluate existing management practices and provide improved understanding for future management decisions.
- Provide opportunities in education and outreach that promote public understanding, support, and participation in the protection and conservation of marine and Great Lakes resources.
- Encourage the transfer and adoption of resource management practices that can be used globally, regionally, and locally to enhance marine and Great Lakes conservation and ecologically sustainable uses of marine and Great Lakes resources outside Sanctuary boundaries.

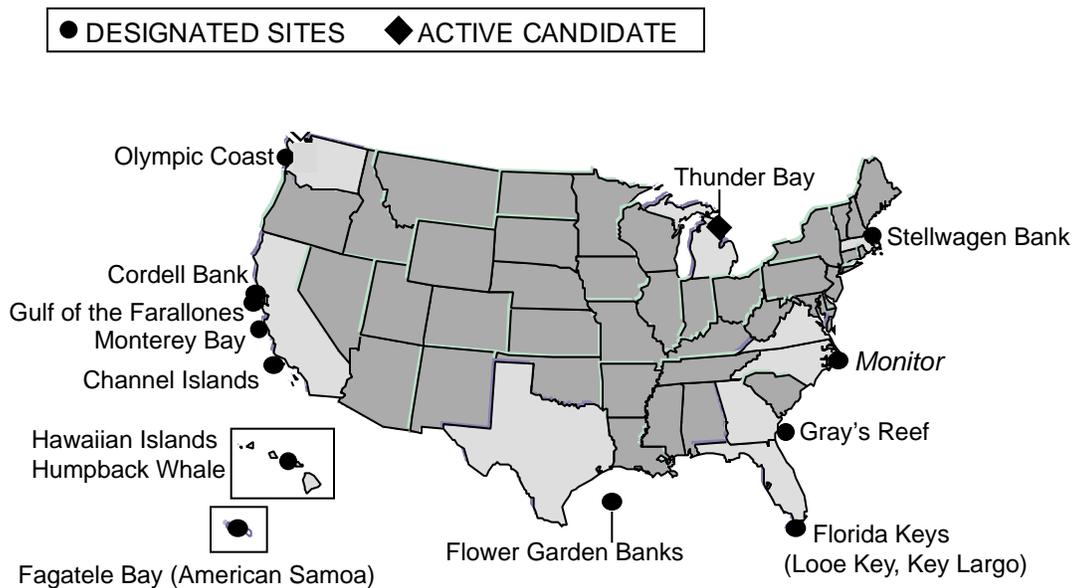


Figure 2.2 The National Marine Sanctuary System (1999).

B. THE FEASIBILITY OF A THUNDER BAY NATIONAL MARINE SANCTUARY

1. NEED FOR ACTION

The Thunder Bay region contains a large concentration of shipwrecks that span more than a century of Great Lakes maritime history. Over 160 shipwrecks have been mentioned in historical records (Martin 1996, Vrana 1993). Twenty-six shipwrecks in Thunder Bay were investigated by divers in 1975 (Warner and Holecek 1975); about 45 shipwrecks in the region are currently explored by recreational divers (McConnell, personal communication 1996).

In 1981, Thunder Bay was established as the first State of Michigan underwater preserve under Part 761, Aboriginal Records and Antiquities of Public Act 451 (1994), as amended, to protect “abandoned property of historical value, or ecological, educational, geological, or scenic features or formations having recreational, educational, or scientific value.” The Preserve area totals 288 square miles, extending from Middle Island (northern edge of Alpena County) south to South Point (southern edge of Alpena County), and from the ordinary high water mark along the shores of Thunder Bay, to the eastern boundary along the 150-foot contour line in Lake Huron.

Management of underwater preserves is the joint responsibility of the Michigan Department of Environmental Quality (DEQ) Land and Water Management Division, and the Michigan Depart-

ment of State (DOS) Michigan Historical Center. State agencies with responsibility for law enforcement in the Preserve include the Alpena County Sheriff’s Department, the Michigan State Police, and the Michigan Department of Natural Resources (DNR) Law Enforcement Division.

The discovery, exploration, documentation, and study of shipwrecks continue to be important activities in the Thunder Bay region and the Great Lakes. This importance is due, in part, to the increasing public interest in underwater cultural resources and the development of underwater technologies that enhance access to these resources.

NOAA recognizes the national historic significance of the underwater cultural resources of the Thunder Bay region. NOAA agrees with the State of Michigan, the Thunder Bay Core Group, the Sanctuary Advisory Council (SAC), and other stakeholders that a Thunder Bay NMS should focus on underwater cultural resources, as well as highlight the region’s maritime heritage.

If NOAA designates the Thunder Bay NMS, it would reaffirm the achievements of the State of Michigan and regional communities in protecting Great Lakes underwater cultural resources and in establishing the Thunder Bay Underwater Preserve. NOAA also recognizes the need to supplement these achievements by facilitating the comprehensive management of Thunder Bay’s underwater cultural resources, including education and research initiatives. Comprehensive management is important because of increasing

interest in underwater cultural resources, the national significance of these resources in the Thunder Bay region, and the limited financial support available at state and local levels.

2. THE DESIGNATION PROCESS

Guiding Principles of the Designation Process

The process to determine the feasibility of a Thunder Bay NMS has been guided by some important principles. These principles have evolved throughout the feasibility process and have helped to ensure accuracy of information.

GUIDING PRINCIPLES

NOAA has strived to develop a National Marine Sanctuary in partnership with governmental and non-governmental entities. The Sanctuary will:

- encourage active involvement in the protection and stewardship of Thunder Bay underwater cultural resources;
- complement and supplement existing management, education, and research programs;
- respect and incorporate local values, culture and expertise, and enhance the quality of life of resource users; and
- strengthen local, regional, national, and global awareness and understanding of Great Lakes maritime heritage.

Requirements of the Designation Process

Sections 303 and 304 of the National Marine Sanctuaries Act and its implementing regulations (15 CFR Part 922) outline the steps necessary to designate a NMS. These steps include the preparation of an environmental impact statement (EIS) pursuant to the National Environmental Policy Act (NEPA) for the proposed designation.

Given the diversity of resources and communities in which Sanctuaries are located, the mechanisms for completing the EIS and the steps for designation vary from site to site. The designation process is designed not only to satisfy the requirements of NEPA and the National Marine Sanctuaries Act, but to meet the needs of local communities; state, federal, and tribal agencies; businesses; nonprofit organizations; and political officials.



Michigan State University

Figure 2.3 Machinery from steamer *Monohansett* near Thunder Bay Island.

C. HISTORY OF THE FEASIBILITY PROCESS

1. PRIOR TO ACTIVATION AS A SANCTUARY CANDIDATE (1970 – 1991)

Since the early 1970s, the Alpena community has been exploring the potential for development of an underwater park featuring shipwrecks in the Thunder Bay region. Thunder Bay was identified as an area of the Michigan Great Lakes having a significant concentration of shipwrecks in a 1975 study by Dr. Richard Wright, funded by the Michigan Department of Natural Resources. In 1974, Michigan State University's Department of Park and Recreation Resources coordinated a cooperative project to inventory Thunder Bay's underwater cultural resources. The resulting

"Thunder Bay Shipwreck Survey Study Report" provided the locations of 17 vessels and the approximate locations of 9 other vessels. The report suggested that the number of located wrecks was sufficient to warrant the establishment of an underwater "reserve" (Warner and Holecek 1975).

Establishment of a reserve was supported by the Thunder Bay Diving Club and civic organizations. In 1981, Thunder Bay was authorized as the first State of Michigan Great Lakes *underwater preserve* under Part 761, Aboriginal Records and Antiquities of Public Act 451 (1994), as amended. The Michigan underwater preserves have been established to preserve and protect bottomland and surface water areas around the

Great Lakes that contain abandoned property of historical, recreational, educational, or scientific value.

During this same time period, the National Oceanic and Atmospheric Administration (NOAA) was developing a Site Evaluation List (SEL) to identify potential candidates for designation as National Marine Sanctuaries. The final SEL was published on August 4, 1983 (48 *Federal Register* 35568) and included five Great

Lakes areas: Thunder Bay, Lake Huron; Apostle Islands/Isle Royale, Lake Superior; Green Bay, Lake Michigan; Western Lake Erie Islands/Sandusky Bay, Lake Erie; and Cape Vincent, Lake Ontario.

The proposal to include Thunder Bay on the SEL was written by John Porter, Chair for the Alpena County Planning Commission, in cooperation with John Schwartz, District Sea Grant Extension Agent for northeast Michigan. The proposal to

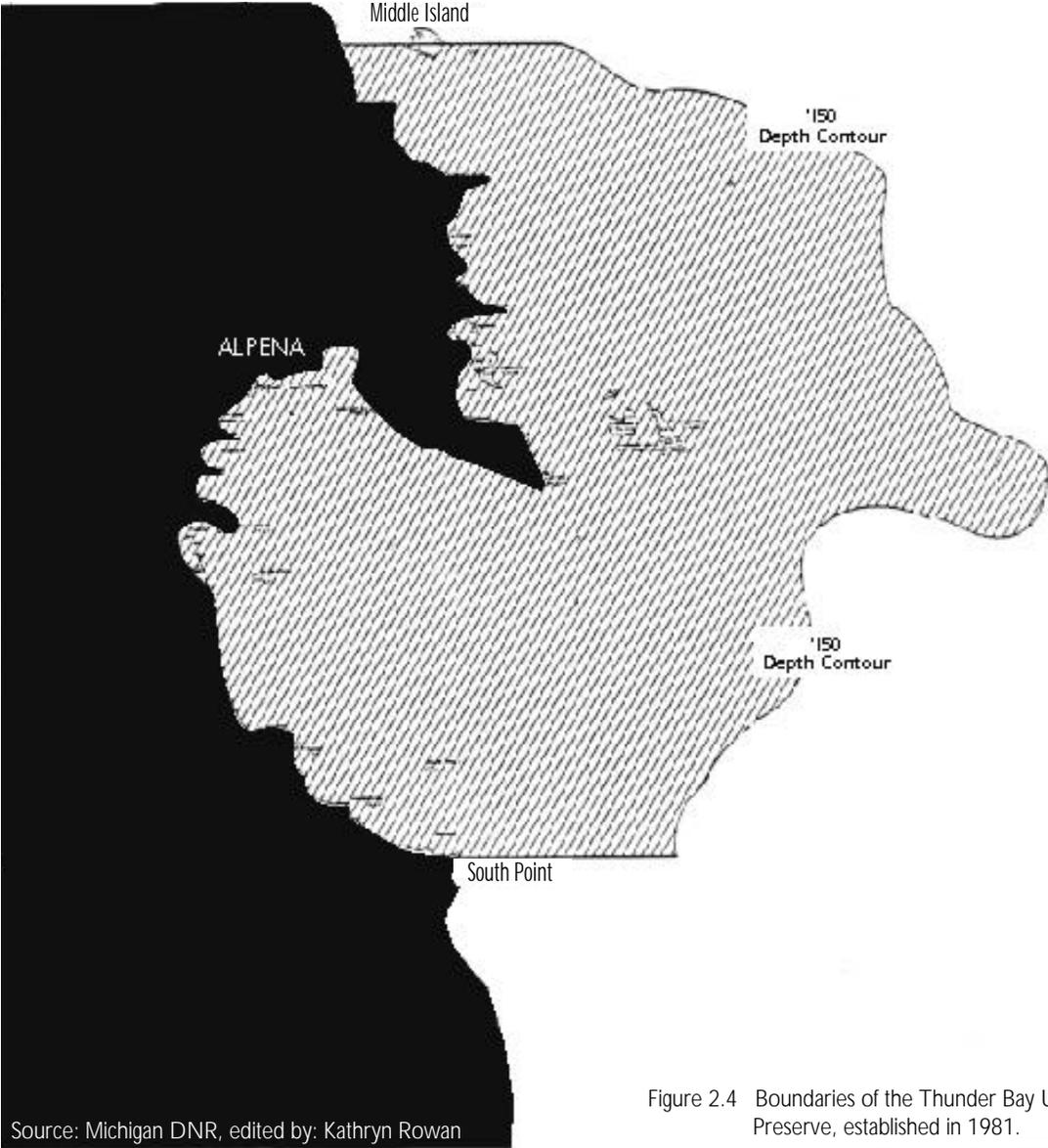


Figure 2.4 Boundaries of the Thunder Bay Underwater Preserve, established in 1981.

evaluate Thunder Bay was based on: (1) the large number of intact shipwrecks; (2) the variety of shipwreck environments, including shallow, nearshore sites and deeper offshore sites; and (3) the diversity of vessels representing historical themes and types from the 1830s to 1950s (Schwartz, personal communication 1995). The area proposed as a Sanctuary encompassed approximately 400 square miles of northeast Michigan coastal waters (including Thunder Bay).

After inclusion of Thunder Bay on the SEL in 1983, members of the Alpena community requested that the Michigan Department of Natural Resources (DNR) pursue Sanctuary designation for the site. The State of Michigan was hesitant about designation, citing the inexperience of the NMS Program in state waters, and existing state/federal resource management conflicts as rationale for not pursuing new partnerships with federal agencies (Porter, personal communication 1983).

Michigan Sea Grant Extension created a university specialist position in 1988 to support development of the Michigan underwater preserves and to enhance management of Great Lakes underwater cultural resources. There was renewed interest from members of the Alpena community in exploring opportunities associated with the NMS Program. In 1990, Michigan Sea Grant Extension and a number of Michigan underwater preserve committees invited NOAA, the Director of the National Maritime Initiative, the Michigan DNR, and the Michigan Bureau of History to participate in a tour of the Michigan

underwater preserve areas. The purposes of the tour were to acquaint these agencies with preserve resources, to learn about community development efforts and management issues, and to discuss opportunities for sharing financial and in-kind resources in management and development of the preserves.

A follow-up meeting was held in Fall 1990 at the Michigan Historical Center in Lansing and involved a number of stakeholders to discuss the potential of a NMS in the Great Lakes. After the meeting, representatives from the Alpena community advocated the reconsideration of Thunder Bay as a NMS. In July 1991, Thunder Bay became an active candidate for Sanctuary designation. NOAA then hired a Project Coordinator and housed that staff person at the Michigan DNR's Land and Water Management Division. This marked the beginning of a formal cooperative effort between NOAA and the State of Michigan to determine the feasibility of a Thunder Bay NMS. The office for the Project Coordinator is currently located at NOAA's Great Lakes Environmental Research Laboratory.

2. ACTIVE SANCTUARY CANDIDATE (1991 – PRESENT)

NOAA hosted public scoping meetings in Lansing and Alpena in October 1991. The purposes of those meetings were to: (1) learn more about resources, activities, and associated management issues in Thunder Bay; and (2) share with interested community members the purposes of the NMS Program and the process necessary to

determine the feasibility of a Sanctuary. The public scoping meetings initiated a series of events which ultimately led to publication of the Draft Environmental Impact Statement/Draft Management Plan (DEIS/DMP). Local input was important throughout the feasibility process. The Thunder Bay Core Group, established in 1994, represented governmental and non-governmental entities and provided specific recommendations to NOAA regarding the feasibility of a Sanctuary. The Core Group also met to clarify resource management issues, discuss Sanctuary management and boundary

alternatives, and evaluate the potential impacts of Sanctuary designation. The Sanctuary Advisory Council (SAC), established in 1997, provided local input on the DEIS/DMP, the Memorandum of Understanding and Programmatic Agreement, and other issues related to the Sanctuary. A chronological outline of events that make up the feasibility process for the Thunder Bay NMS is provided in Table 2.1. Not all events have been included (e.g., civic presentations, student projects, conferences, meetings, and discussions).



Gene Wright

Figure 2.5 Discussions during a workshop at Old Woman Creek National Estuarine Research Reserve.



Gene Wright

Figure 2.6 Tour of NOAA Research Vessel *Shenehon* during the Thunder Bay Excursion.



Gene Wright

Figure 2.7 Preparing for an overflight of the region during the Thunder Bay Excursion.



Gene Wright

Figure 2.8 Launching an ROV (remotely operated vehicle) from the *Shenehon*.

Table 2.1 Feasibility process for the Thunder Bay NMS.

Year	Event	Description
1991	Activation as Sanctuary Candidate	In July 1991, Thunder Bay was activated from the SEL to begin the formal process of determining the feasibility of NMS designation.
June 1991 to present	Ongoing Consultation	NOAA consults with regional communities, Michigan Coastal Management Program, State Historic Preservation Office and Office of the State Archaeologist, U.S. Fish and Wildlife Service and other federal agencies, and Native American communities.
1992	Thunder Bay Work Group Meetings	Governmental and non-governmental entities worked together to discuss the scope of a NMS. The information gathered was incorporated into the <i>Thunder Bay Region Inventory of Resources</i> and the DEIS/DMP.
1992	<i>Thunder Bay Region Inventory of Resources</i>	Michigan Sea Grant Extension prepared the inventory based on a literature review and personal communications. The document describes the environmental characteristics, natural and cultural resources, and past and present human activities of the region.
1993	<i>Kids Care About Our Great Lakes</i> Poster	The poster was a cooperative project with the Michigan Cooperative Extension Service, Alpena Community College, and NOAA. The purpose was to increase awareness of the resources and activities of Thunder Bay and the NMS Program (Figure 2.5).
1993	Workshop at Old Woman Creek National Estuarine Research Reserve (Huron, Ohio)	The purpose of the workshop was to provide an opportunity for stakeholders from state agencies and Thunder Bay regional communities to interact with staff from designated Sanctuaries and National Estuarine Research Reserves in an operating facility.
1994	Thunder Bay Core Group	The Core Group was established at the suggestion of participants in attendance at the Old Woman Creek Workshop. The Core Group provided specific recommendations to NOAA regarding the feasibility of a Sanctuary.
1994	Thunder Bay Excursion	In June 1994, the Alpena community, the Thunder Bay Core Group, and NMS staff welcomed resource professionals and political leaders to Thunder Bay. The purpose was to encourage guests to interact with area resources and community leaders (Figures 2.6 and 2.7).
1994	Development of Management Alternatives	The Thunder Bay Core Group met to: (1) clarify resource management issues (e.g., fishing, diving, water quality, discharge/disposal, wetlands, vessel traffic); (2) discuss Sanctuary management and boundary alternatives; and (3) evaluate the potential impacts of Sanctuary designation.

Table 2.1 Feasibility process for the Thunder Bay NMS (continued).

Year	Event	Description
1995	Evaluation of Management Alternatives	Core Group members reviewed all management alternatives in cooperation with a variety of community interests throughout Spring 1995. In June, the Core Group determined that, if designated, a NMS in Thunder Bay should focus on underwater cultural resources (e.g., shipwrecks).
1996	Draft Memorandum of Understanding among the State of Michigan, NOAA, and the Federal Advisory Council on Historic Preservation	NOAA drafted an outline of what a Memorandum of Understanding (MOU) could contain. The purpose of an MOU is to clearly define the mechanisms needed to operate a state/ federal partnership in management of the Sanctuary.
June 1997	Publication of DEIS/DMP	NOAA released the Draft Environmental Impact Statement/Draft Management Plan for comment.
July 1997	Informational Meetings (Open Houses)	NOAA hosted informational meetings (open houses) to summarize the document and answer questions in an informal setting.
August 1997	Establishment of Sanctuary Advisory Council (SAC)	The Sanctuary Advisory Council was created to provide local input on the DEIS/DMP, the Programmatic Agreement and MOU, and other issues related to the Sanctuary.
September 1997	Public Hearings	NOAA conducted public hearings in all three counties surrounding Thunder Bay.
November 1997	Public Comment Period Closes	NOAA compiled all public comments and began review of comments.
January 1998 – January 1999	Review of Public Comments; Preparation of Memorandum of Understanding (MOU) and Final Environmental Impact Statement and Management Plan (FEIS/MP)	NOAA reviewed all public comments. Based on the public comments and in partnership with the State of Michigan and local community leaders, NOAA decides to publish an FEIS/MP.
Summer 1999	Publication of FEIS/MP	NOAA publishes the Final Environmental Impact Statement/ Management Plan.
Summer 1999	Federal Register Notice of Designation	NOAA issues a Federal Register Notice of Designation.
Late 1999	Sanctuary Designation	Sanctuary designation is not final until the end of a 45-day review period of continuous Congressional session during which time the Governor of Michigan and the U.S. Congress can take action.

D. POSITIVE CONTRIBUTIONS OF THE PROPOSED THUNDER BAY NATIONAL MARINE SANCTUARY

The process to determine the feasibility of a Thunder Bay NMS arose, in part, out of a need to consider alternatives for funding and developing the Thunder Bay Underwater Preserve. The Sanctuary feasibility process, and the consideration of community, state, federal, and tribal partnerships as a means to manage Thunder Bay underwater cultural resources, has reinforced the need to enhance protection, access, and understanding of Thunder Bay's important maritime heritage resources.

Examples of how the Sanctuary feasibility process has already contributed to resource protection through research and education activities in the Thunder Bay region are outlined in the following paragraphs.

1. EDUCATION

- The Michigan Science Teachers Association (MSTA) kicked off the feasibility process with a series of teacher training workshops during the summers of 1991, 1992, and 1993. The purpose of these workshops was to provide materials and field experiences to enrich classroom teaching in Great Lakes education. MSTA remains interested in developing future education initiatives with the Thunder Bay NMS.

- The NMS Program, Michigan Cooperative Extension Service, and Alpena Community

College held a poster contest during the 4-H Great Lakes Leadership Camp in 1993. Over 9,000 *Kids Care About Great Lakes* posters have been distributed at local, regional, and national education events.

- The NMS Program continues producing the *Beneath the Waves* newsletter. The newsletter, distributed semi-annually to over 1,400 individuals, organizations, and businesses, provides information on the Sanctuary, the NMS Program, and related projects in the Great Lakes.

- In 1994, the Alpena community, Thunder Bay Core Group, and NMS Program held the *Thunder Bay Excursion*. The purpose of the event was to encourage resource professionals and political leaders to interact with Thunder Bay resources and community leaders, in preparation for release of the DEIS/DMP.

- Increased awareness of the Thunder Bay region has resulted in the nomination of Thunder Bay as a candidate location for national events. These events include the National Youth Envirothon Olympics, and the North American [Paddlesports] Water Trail Conference.

2. RESEARCH

- The NMS Program funded Michigan Sea Grant Extension in 1991–1992 to conduct an inventory of resources for the Thunder Bay region. The resulting document describes the environmental characteristics, natural and cultural

resources, and past and present human activities of the region.

- The NOAA Great Lakes Environmental Research Laboratory and Alpena Community College conducted biological research in Thunder Bay in 1995. The researchers studied the extent of zebra mussels on shipwrecks and their movement in the Bay using satellite technology and temperature profiling.

- The NMS Program funded Great Lakes Visual/Research, Inc. in 1995 – 1996 to evaluate the national significance of Thunder Bay underwater cultural resources. This project led to a collaborative effort between NOAA and the Department of Park, Recreation and Tourism Resources at Michigan State University to de-

velop concepts and preliminary proposals for a Theme Study of the Thunder Bay cultural landscape for consideration as a National Historical Landmark/Maritime Heritage Area. The concepts and preliminary proposals were presented to community leaders in 1995. The final report, "Preliminary Comparative and Theme Study of National Historic Landmark Potential for Thunder Bay, Michigan" was completed in 1996 (Martin 1996).

- The NMS Program provided funding for the Michigan State University Department of Anthropology in 1996 to conduct research in the Thunder Bay region. The purpose of the project was to learn more about the commercial fishing heritage of Thunder Bay.

Section 3 Management Plan



SECTION 3

MANAGEMENT PLAN

○ The Management Plan is a five-year plan that describes the management (operations and underwater cultural resource protection), education and research programs for the Thunder Bay NMS.

○ Protecting the 160 shipwrecks in the Thunder Bay region is important to maintaining and enhancing the recreational, educational, and scientific values of these resources.

○ Providing educational opportunities that promote understanding, appreciation, and involvement in the protection and stewardship of underwater cultural resources will be a primary function of the Thunder Bay NMS.

○ The knowledge acquired through the research and monitoring programs of the

Thunder Bay NMS will be used to evaluate existing management practices, enhance future management decisions, and educate the public.

○ The Memorandum of Understanding clarifies the jurisdiction, authority, conflict resolution and conditions of the NOAA-State partnership for managing the Thunder Bay NMS.

○ The Programmatic Agreement describes permit procedures and criteria, program goals and priority projects for the first five years.

○ The Sanctuary Advisory Council is a mechanism to encourage community participation in the management of a National Marine Sanctuary.

Vision Statement for the Thunder Bay National Marine Sanctuary

To establish a National Marine Sanctuary that actively promotes education and research on the underwater cultural resources of the Thunder Bay region, and that creates a framework for protection and management that relies on governmental cooperation and citizen participation.

A. INTRODUCTION

The Thunder Bay National Marine Sanctuary will be managed in partnership with governmental and non-governmental entities, including the local Sanctuary Advisory Council. The Sanctuary

will promote visitor/interpretive facilities and educational programs that increase knowledge and appreciation for Thunder Bay's underwater cultural resources and their connection with the broader maritime heritage of the region and nation. The vision for the Sanctuary includes a suite of activities that could include live video hook-ups from the shipwrecks to classrooms, a "shipwreck trail," adult and child educational programs, and research that better identifies and documents the importance of the underwater cultural resources.

The Thunder Bay NMS will be the:

○ first freshwater and Great Lakes National Marine Sanctuary;

- only National Marine Sanctuary located entirely within state waters; and
- first National Marine Sanctuary to focus solely on a large collection of underwater cultural resources.

PURPOSES OF THE THUNDER BAY NMS

- To complement and supplement existing management and enforcement authorities protecting underwater cultural resources;
- To provide educational opportunities that promote understanding, appreciation, and involvement in the protection and stewardship of underwater cultural resources;
- To develop scientific knowledge and enhance management practices related to underwater cultural resources by encouraging research and monitoring programs; and
- To encourage the exchange of knowledge and expertise to enhance sustainable uses of the Great Lakes and underwater cultural resources.

B. OUTLINE OF THE MANAGEMENT PLAN

The Management Plan (MP) outlines the administrative framework, goals, and possible activities

necessary to achieve the vision of a Thunder Bay NMS. The Thunder Bay NMS will focus on resource protection, education, and research related to underwater cultural resources and the region's maritime heritage.

The MP is a five-year plan describing management (operations and underwater cultural resource protection), education, and research programs for the Thunder Bay NMS. Individual strategic plans will be developed for each of these programs. The MP is based on sound practices for comprehensively managing and protecting underwater cultural resources, and for promoting awareness and understanding of Great Lakes maritime heritage. Possible activities in underwater cultural resource protection, education, and research are described in the MP to give the reader a more concrete view of benefits that can accrue to communities, organizations, and individuals from Sanctuary designation.

The MP is divided into the following categories:

- Management: Operating and Protecting the Sanctuary in Partnership
- Education: Learning to be Better Cooperative Stewards
- Research: Working Together to Better Understand Thunder Bay's Underwater Cultural Resources and Maritime Heritage

The MP first discusses Sanctuary Management, specifically, Operations and Underwater Cultural

Resource Protection. Sanctuary Operations explains how governmental and non-governmental partners can work together to operate the Sanctuary. Sanctuary staffing and facilities are also discussed. The Underwater Cultural Resource Protection program, and following that the Education and Research programs, are described in terms of: (1) how that program relates to the existing NMS Program strategic plan, and state and regional plans; (2) Sanctuary management goals; and (3) management activities identified for the Sanctuary.

C. MANAGEMENT: OPERATING AND PROTECTING THE SANCTUARY IN PARTNERSHIP

1. ADMINISTRATIVE FRAMEWORK

Administration refers to the roles and responsibilities of governmental and non-governmental entities that will be involved in the operation of the Sanctuary. The Thunder Bay NMS can be successful only by working in partnership with the agencies and organizations that have an interest in underwater cultural resource management.

The NMS Program, the State of Michigan, and local communities can work together to support the functions of the Sanctuary. The roles and responsibilities that agencies will have in Sanctuary underwater cultural resource protection, research, and education are described in Tables 3.1 – 3.3, at the end of this section. More detailed descriptions of these agencies are

provided in Section 4, The Sanctuary Setting.

The Memorandum of Understanding (MOU) is made between the State of Michigan and NOAA. The MOU clarifies the relative jurisdiction, authority, conflict resolution, and conditions of the NOAA-State partnership for managing the Thunder Bay NMS. It confirms the State's continuing sovereignty and jurisdiction over its State waters, submerged lands, and other resources within the Sanctuary.

The administrative roles and responsibilities of the State of Michigan, NOAA, and the Federal Advisory Council on Historic Preservation are described in the Programmatic Agreement. In particular, the Agreement documents permit procedures and criteria, and each agency's responsibilities in terms of permits. The Programmatic Agreement also describes the underwater cultural resource protection, education and research goals, and priority projects for the first five years.

The MOU and Programmatic Agreement both reflect public comments received during the designation process, including substantial local input by the Sanctuary Advisory Council. The MOU and Programmatic Agreement are attached at the end of the MP on pages 75 – 91. Additional MOUs may be developed for Sanctuary enforcement activities, or other Sanctuary activities as deemed necessary by NOAA, the State of Michigan, and local communities.

2. SANCTUARY STAFF AND FACILITIES

Sanctuary Staff

The focus of the Thunder Bay NMS is underwater cultural resources and maritime heritage. Sanctuary programs will emphasize underwater cultural resource protection, research, and education. Sanctuary staff, therefore, should collectively have skills in resource management, education, maritime history and archaeology, recreation and tourism, and administration.

The staff of the Thunder Bay NMS should, at a minimum, include a Manager, Education Coordinator, Research Coordinator, and Administrative Assistant. The number and expertise of staff will depend on budget allocations and the operating priorities and strategies of the Thunder Bay NMS. Funding and hiring of Sanctuary staff may be accomplished in phases, using a variety of mechanisms.

Sanctuary staff could be hired directly by the NMS Program, or hired through cooperative arrangements with other agencies, organizations, and businesses. For example, a Sanctuary Research Coordinator may be hired jointly by the NMS Program, the Michigan Department of Environmental Quality, the Department of State Michigan Historical Center, and Michigan State University; or an Education Coordinator may be hired jointly by the NMS Program, Alpena Community College, and the Alpena – Montmorency – Alcona Educational Service District. The NMS Program will hire the Sanctuary

Manager, rather than develop a cooperative arrangement for this position. The Sanctuary Manager will report directly to the NMS Program and be the primary spokesperson for the Sanctuary. The Sanctuary Manager will be hired and available upon designation to coordinate the new responsibilities of the Sanctuary. The Sanctuary Manager will be responsible for:

- working cooperatively with governmental and non-governmental entities, including the Sanctuary Advisory Council, to establish and implement priorities for Sanctuary underwater cultural resource protection, research, and education;
- allocating Sanctuary funds for underwater cultural resource protection, research, and education activities;
- working with the Michigan Department of Environmental Quality (DEQ), Michigan Department of State (DOS), and Michigan Department of Natural Resources (DNR) to protect underwater cultural resources (e.g., coordinating the permit application process, reaching agreement on priorities for Sanctuary management).
- representing the Thunder Bay NMS at functions relating to the Sanctuary and the NMS Program;
- assessing the effectiveness of Sanctuary management programs, especially of site-specific management strategies; and
- supervising other Sanctuary staff.

The Education Coordinator will be responsible for working with the Sanctuary Manager and appropriate governmental and non-governmental entities, including the Sanctuary Advisory Council, to establish education priorities and strategies for the Sanctuary. These priorities and strategies will be incorporated into a Sanctuary Education Plan. The Education Coordinator will be responsible for coordinating, implementing, and evaluating the priorities and strategies identified in the Education Plan.

The Research Coordinator will be responsible for working with the Sanctuary Manager and appropriate governmental and non-governmental entities, including the Sanctuary Advisory Council, to establish research priorities and strategies for the Sanctuary. These priorities and strategies will be incorporated into a Sanctuary Research Plan. The Research Coordinator will be responsible for coordinating, implementing, and evaluating the priorities and strategies identified in the Research Plan.

The Administrative Assistant will be responsible for assisting with the day-to-day operations of the Sanctuary office, and providing administrative support to Sanctuary staff.

Sanctuary Facilities

The Sanctuary office will be based in Alpena, Michigan. Alpena is centrally located on Thunder Bay and is a mid-point between the northern and southern boundaries of the Sanctuary. Other satellite offices could be established north

and south of Alpena if deemed necessary. For example, seasonal offices could be established at the Presque Isle Lighthouses or at Sturgeon Point Lighthouse to accommodate the needs of summer visitors.

The Thunder Bay community indicated that a Maritime Heritage Center is important to enhance educational opportunities for both local residents and visitors. Development of such an education/research facility also supports the mission of the NMS Program and the purposes of the Thunder Bay NMS. The Thunder Bay NMS will work actively with local interests and the State of Michigan to develop the concept for, and to secure the resources necessary for, the construction and long-term maintenance of a Maritime Heritage Center. Additional Sanctuary facilities may be developed through various partnerships as the Sanctuary becomes established over time. These facilities could include an education/research vessel, seasonal office space, and related equipment.

Potential Five-Year Budget

The potential of Sanctuary operating budgets and cost-share partnerships are estimated in Table 3.4, at the end of this section (Mahoney et al. 1996).

Sanctuary Advisory Council

A Sanctuary Advisory Council (SAC) is a mechanism to encourage community participation in the management of a NMS. It is a means by which the NMS Program and the State of Michigan will work cooperatively with a variety of local interests to comprehensively manage the Thunder Bay NMS. Each Sanctuary is given the authority to establish a SAC in accordance with the National Marine Sanctuaries Act. The Thunder Bay SAC was appointed in August 1997 during the feasibility process. The purpose of the SAC was to provide local input on the Draft Environmental Impact Statement/Draft Management Plan, the Memorandum of Understanding, the Programmatic Agreement, and other issues related to the Sanctuary.

Once the Sanctuary is designated, a new SAC will be appointed. The SAC will advise and provide recommendations to the Sanctuary Manager about issues relating to Sanctuary underwater cultural resource protection, research, and education, and in implementing the overall Management Plan. Under an existing National Marine Sanctuaries Act provision, the SAC will be comprised of up to 15 local members. Membership could include, but is not limited to, local governments, user groups, nonprofit organizations, education and research institutions, and private businesses. Membership will not include state or federal agency representatives. NOAA and the State of Michigan will determine the SAC membership. NOAA will request expressions of interest in

membership on the Thunder Bay SAC.

Applications will be reviewed, and members mutually agreed upon by NOAA and the State of Michigan. SAC membership will be limited to two-year terms.

3. PROTECTING THE SANCTUARY UNDERWATER CULTURAL RESOURCES IN PARTNERSHIP

Introduction

Protecting underwater cultural resources to ensure their long-term use and integrity is the primary function of the Thunder Bay NMS. Protecting the 160 shipwrecks and other underwater cultural resources in the Thunder Bay region is important to maintaining and enhancing the recreational, educational, and scientific values of these resources.

Protection of Sanctuary underwater cultural resources can be accomplished only through active participation of the agencies and organizations that have an interest in managing these resources. The NMS Program strategic plan and state and regional plans (Table 3.5) support the function of underwater cultural resource protection for the Thunder Bay NMS. The process of protecting underwater cultural resources through the involvement of many stakeholders and interest groups has been termed "cooperative stewardship" by the Michigan Underwater Preserve Council and other organizations. The Thunder Bay NMS will protect Thunder Bay's underwater cultural resources through cooperative stewardship.

National Marine Sanctuary Program

Protecting underwater cultural resources is consistent with the core purpose of the NMS Program which is to “protect and rebuild marine and coastal resources, both biological and cultural, by creating a network of unique protected areas” (NOAA 1998:3). The NMS Program believes it must “serve as a trustee for the nation’s system of marine protected areas to conserve, protect, and enhance the biodiversity, ecological integrity and cultural legacy of these ecosystems” (NOAA 1998:8). In addition, the NMS Program is committed to adopting management policies, practices, and initiatives that ensure the compatibility of human activities with long-term protection of Sanctuary resources (NOAA 1998:6).

State and Regional Plans

Similarly, protection of underwater cultural resources is an important purpose of Michigan underwater preserves. The Thunder Bay Underwater Preserve, as with all state underwater preserves, was created to “protect abandoned property of historical value, or ecological, educational, geological, or scenic features or formations having recreational, educational, or scientific value” (Part 761, Aboriginal Records and Antiquities of P. A. 451 [1994], as amended).

The Sanctuary will support one of the goals for historic preservation in Michigan which is “...to increase protection of resources of historic value” (Michigan DOS 1995: xi). The coastal

communities of the Thunder Bay region also recognize the value of underwater cultural resource protection. Recreation and county coastal land management plans have been, or are being, developed by the three counties adjacent to the Sanctuary boundary (Presque Isle, Alpena, and Alcona). All of these plans recognize that coastal resources are important to education, recreation, and economic development in their communities.

Sanctuary Goals for Underwater Cultural Resource Protection

The following goals support the mission of the NMS Program and reflect the purposes and intentions of state and regional plans. The goals will be used to develop a comprehensive resource protection program, including priorities and strategies for protecting underwater cultural resources in the Thunder Bay NMS. The Thunder Bay NMS will work cooperatively with appropriate governmental and non-governmental entities, including the SAC, to create innovative partnerships to develop and implement these underwater cultural resource protection priorities and strategies.

In order to effectively and efficiently protect Sanctuary underwater cultural resources, the goals of the Thunder Bay NMS will be to:

- establish innovative partnerships with agencies, organizations and institutions that support the underwater cultural resource protection mission of the Sanctuary;

- develop and maintain community involvement through diverse volunteer and private sector initiatives;
- establish an effective enforcement program for Sanctuary regulations that protects underwater cultural resources;
- coordinate management activities with other governmental and non-governmental programs that protect underwater cultural resources;
- develop and implement effective emergency response and underwater cultural resource damage assessment programs; and
- ensure that management decisions are based on the best available information, but where such information is incomplete, follow those options that best protect Sanctuary underwater cultural resources.

Management Activities for Underwater Cultural Resource Protection

Discussions were held among the NMS Program, the Thunder Bay Core Group, the SAC, and regional communities throughout the feasibility process to identify possible management activities for protecting the underwater cultural resources of the Sanctuary. These activities are not inclusive. Priorities for resource protection activities and strategies for implementing these priorities will be incorporated into the Underwater Cultural Resource Protection Plan. This Plan will be developed cooperatively by

NOAA, the State, the SAC, and appropriate local and regional organizations and institutions.

Management activities for protecting underwater cultural resources in the Thunder Bay NMS could include:

Developing and Maintaining a Mooring Buoy System

The Sanctuary could work with other resource management agencies, and local organizations and businesses to develop and maintain a mooring buoy system that provides safe access to shipwrecks with minimum impact to the resources. Mooring buoys also make the location of sites more visible to both divers and non-divers. The Sanctuary would facilitate efforts to fund and maintain the mooring buoy program.

Coordinating Management Agencies

The Sanctuary could facilitate coordination among management agencies having responsibilities for the Thunder Bay maritime cultural landscape. These agencies include the NMS Program, Michigan DEQ, Michigan DOS, Michigan DNR, and others as appropriate. These management agencies could identify and address research and education activities, and coordinate enforcement of Sanctuary regulations.

Cross-deputizing and Supporting Enforcement

Enforcement personnel will be responsible for enforcing Sanctuary regulations and providing on-the-water information and assistance to Sanctuary visitors. The Sanctuary can utilize existing enforcement personnel by

cross-deputizing County Sheriff Marine Patrol Officers, Michigan DNR Conservation Officers, Michigan State Police, and U.S. Coast Guard Officers to enforce Sanctuary regulations. Additional training, equipment, and support could be provided to enforcement officers as indicated by priorities and permitted by budgets.

Science-based Decision Making

The Sanctuary could support a scientific research and monitoring program focusing on underwater cultural resources. Initial research activities could provide baseline inventory information on which to base management decisions. Research and monitoring efforts would provide additional inventory and assessment information on which to develop management programs that balance underwater cultural resource protection and sustainable uses of these resources.

Sanctuary Regulations for Underwater Cultural Resource Protection

To ensure the protection of underwater cultural resources, NOAA is proposing final regulations for the Thunder Bay National Marine Sanctuary. The regulations focus only on underwater cultural resources; NOAA does not have the authority under these regulations to manage natural resources such as fish, wildlife and wetlands. The regulations identify terms (e.g., “underwater cultural resource”), set forth the Sanctuary boundary, identify prohibited activities, and describe permit procedures. For additional discussion of the regulations, refer to Chapter 5, Alternatives (pp. 200 – 208). For the text of the

regulations, refer to Attachment 2 of the Management Plan (pp. 58 – 74).

The regulations identify three prohibited activities in the Sanctuary. The first prohibited activity is recovering, altering, destroying, possessing or attempting to recover, destroy, alter or possess an underwater cultural resource. The intent of this regulation is to protect the underwater cultural resources of the Sanctuary for the benefit of the public through education, observation in situ, and research. NOAA does not envision issuing permits for recovery of artifacts, except in rare circumstances (e.g., an isolated object that cannot be associated with a particular shipwreck).

The second prohibited activity is drilling into, dredging or otherwise altering the lakebottom associated with underwater cultural resources; or constructing, placing or abandoning any structure, material or other matter on the lakebottom associated with underwater cultural resources. This prohibited activity makes exceptions for the incidental result of the following activities: anchoring vessels, traditional fishing operations (as defined in the regulations), or minor projects that do not adversely affect underwater cultural resources. The intent of this regulation is to protect the underwater cultural resources of the Sanctuary from the harmful effects of activities such as dredging, excavations, drilling into the lakebottom, and dumping of dredged materials.

The third prohibited activity, which was added to

the final regulations, is the use of grappling hooks or other anchoring devices on underwater cultural resource sites that are marked with a mooring buoy. The intent of this regulation is to prohibit damage to underwater cultural resources caused by grappling hooks or other anchoring devices.

D. EDUCATION: LEARNING TO BE BETTER COOPERATIVE STEWARDS

1. INTRODUCTION

Focused and sustainable educational programs are necessary to encourage and support cooperative stewardship of National Marine Sanctuaries. Providing educational opportunities that promote understanding, appreciation, and involvement in the protection and stewardship of underwater cultural resources will be a primary function of the Thunder Bay NMS. For the purposes of this Management Plan, “education” includes a wide range of programs, facilities, and services associated with education through schools, interpretation, and outreach. Meaningful Sanctuary educational programs can be accomplished only through the active participation of the agencies and organizations that have an interest in underwater cultural resource management. Development and implementation of educational programs, facilities, and services as part of the Thunder Bay NMS are supported by the NMS Program strategic plan, and state plans (Table 3.5).

National Marine Sanctuary Program

Development and implementation of educational programs is consistent with the NMS Program mission to “enhance public awareness, understanding, appreciation and wise use of the marine [and Great Lakes] environment [both natural and cultural]” (NOAA 1998:5). Educational activities, products, and facilities will constitute important attractions and services to the residents and visitors of Thunder Bay. Educational programs will be developed to encourage responsible behaviors on the part of recreationists and tourists.

State Programs

Sanctuary educational programs also support the educational interests of the Thunder Bay Underwater Preserve and the Michigan underwater preserves. The State of Michigan places high priority on environmental education. A goal of environmental education programs is to assist citizens in becoming more aware and better informed of environmental issues, and, thereby, placing a greater value on the State’s resources (Michigan Senate 1993).

Regional Programs

The Thunder Bay NMS will work in partnership to support and complement existing education efforts relating to the maritime heritage of the

Thunder Bay region, and to develop and maintain new education initiatives as appropriate. A primary emphasis will be to promote the development of partnerships that create, integrate, and package educational opportunities and make these opportunities accessible to all Sanctuary visitors (e.g., school children, adult residents, and tourists). Throughout the feasibility process for the Sanctuary, the Thunder Bay regional community indicated a strong interest in enhancing the quality and availability of education relating to Thunder Bay. An inventory and assessment of current Great Lakes education programs and activities in the Thunder Bay region was conducted by the Michigan State University Department of Park, Recreation and Tourism Resources (Denton and Mahoney, in progress). The purpose of the study was to identify ongoing environmental education activities in the Thunder Bay region. The study included a series of focus groups that involved schools, agencies, and other organizations that provide and/or support environmental, natural resource, and cultural resource education.

The focus groups revealed that agencies and organizations in the region have made significant investments in education-related projects, programs, and materials. However, focus group participants indicated there is still a general lack of awareness about the cultural, economic, and ecological significance of Thunder Bay, despite the contributions and efforts of these organizations. This may be in part due to the lack of: (1) coordination of educational materials and investments; (2) promotion, access, and distribution of

materials and programs; (3) an organization to maintain and update educational materials and programs; (4) teacher training and encouragement to incorporate Great Lakes education concepts into classroom activities; and (5) educational access to resources (e.g., on-the-water field trips to Thunder Bay and its resources).

The focus group participants expressed interest in having educational opportunities for people of all ages, including local residents and visitors to the area, particularly the growing population of retired persons. They expressed a strong need to develop, incorporate, and distribute Great Lakes educational materials to enhance regional tourism and recreation opportunities. Several organizations are currently involved in efforts to promote eco- and heritage tourism in the Thunder Bay region.

2. SANCTUARY GOALS FOR EDUCATION

The following goals support the mission of the NMS Program, reinforce the purposes and intentions of state programs, and reflect the findings of the Great Lakes education study conducted in the Thunder Bay region. The goals will be used to develop an Education Plan, including priorities and strategies for education programs in the Thunder Bay NMS. The Thunder Bay NMS will work cooperatively with appropriate governmental and non-governmental entities, including the SAC, to create innovative partnerships to develop and implement these education priorities and strategies.

Goals

In order to conduct meaningful educational programs that focus on underwater cultural resources and the maritime heritage of the region, the goals of the Thunder Bay NMS will be to:

- develop and implement educational programs that promote awareness and understanding of Sanctuary underwater cultural resources, Thunder Bay maritime heritage, and the NMS Program;
- provide leadership to develop and implement collaborative educational programs that meet the needs and interests of residents, local and regional schools, and visitors to the area;
- act as a clearinghouse of quality educational materials (e.g., curricula, equipment, technology, and expertise), and assist in developing and maintaining an inventory of existing educational programs so they are accessible to educators;
- encourage the involvement of volunteers to foster understanding of and participation in the protection and stewardship of Sanctuary resources;
- ensure that educational programs support overall management goals for underwater cultural resource protection, research, and administration; and

- facilitate the transfer of Sanctuary information and experiences for use locally, regionally, nationally, and globally.

Management Activities for Sanctuary Education

There are many opportunities for the development of Sanctuary educational programs.

Denton and Mahoney (in progress) provide an inventory of existing Great Lakes educational programs. The Great Lakes education study for the Thunder Bay region identifies opportunities to develop educational activities that can be supported and coordinated by the Thunder Bay NMS. These activities are not inclusive. Priorities for Sanctuary education and strategies for implementing these activities will be included in the Education Plan. The Education Plan and education themes will be developed cooperatively by the Sanctuary, the State, the SAC, and appropriate local and regional organizations and institutions.

Educational activities for the Thunder Bay NMS could include:

Establishing Remote Video Hook-ups

The Sanctuary could establish remote video hook-ups of researchers documenting the shipwrecks. This technology would provide visual access to shipwrecks for non-divers. The Sanctuary could also use this video footage to develop presentations for specific age groups. Sanctuary education staff, volunteers, and government or private interests could produce the educational presentations.

Developing a "Thunder Bay Shipwreck Trail"

The Sanctuary could select and interpret a series of shipwrecks as a "shipwreck trail" to highlight Thunder Bay's maritime heritage. Themes would be developed and matched with appropriate shipwreck sites to educate divers and non-divers about such subjects as ship construction, Great Lakes shipping, the effect of environmental processes on shipwrecks, and the effects of salvage on historic shipwrecks. Interpretive materials would be developed to help divers understand what they see underwater. Landside interpretation would be developed to offer both divers and non-diving visitors a glimpse into the rich maritime history of Thunder Bay.

Create a Maritime Heritage Center

The Sanctuary could facilitate access to Sanctuary resources and materials. For example, the Sanctuary could work in partnership to develop the concept and secure funding for the construction of a Maritime Heritage Center. Such a facility would provide opportunities for both residents and tourists, and would accommodate a wide range of education and research activities from auditorium lectures, to interactive exhibits that provide visual access to shipwrecks for non-divers. The facility could also provide space for visiting scholars and volunteers.

Acquire a Vessel

The Sanctuary could work with appropriate governmental and non-governmental entities to acquire and maintain a vessel for conducting on-the-water education and research activities.

Designate a Thunder Bay Kids' Week

The Sanctuary could designate an annual, weeklong celebration of maritime heritage for local school children. Special events kindle an interest in the maritime history of Thunder Bay and the Great Lakes, and inspire a sense of stewardship. Sanctuary education staff, in cooperation with volunteers and other co-sponsors, could organize Kids' Week events. Activities could consist of lectures, classroom visits, field experiences, and audio-visual presentations.

Producing an Historical Guide

The Sanctuary could produce an historical guide to maritime resources in the Thunder Bay region. The guide would be of value to a broad spectrum of user groups and further publicize the Sanctuary's role in protecting underwater cultural resources. The guide would help to interpret the history of Thunder Bay within the regional, national, and international context and involve local communities in discovering and documenting their maritime heritage.

*Develop Public Outreach Activities**to Promote the Sanctuary*

The Sanctuary could develop public outreach activities and events to promote the Thunder Bay NMS locally and regionally. The Sanctuary could also utilize the expertise of the NMS Program public outreach staff to broaden outreach efforts to a national and international scope. Activities could include a Sanctuary presence at festivals, conferences, and conventions, national media attention, and celebrity spokespeople.

Identifying and Supporting a Network of Volunteers

The Sanctuary could identify and support a network of volunteers to assist with activities consistent with Sanctuary education themes. The Sanctuary would utilize community expertise and interests in matching volunteers with needed activities. Training, support, and incentives could be provided to volunteers as needs and opportunities arise.

Developing Sanctuary Education Themes

The Sanctuary could work cooperatively with Great Lakes educators (e.g., schools, colleges, universities, and museums) and other appropriate entities interested in Great Lakes education to identify education themes based on the maritime cultural landscape focus of the Sanctuary (e.g., industrial development, western expansion, and relationships between cultural resources and the natural environment). These themes would focus the Education Plan, and help to prioritize the needs of the community, the State of Michigan, and the Sanctuary.

Providing Leadership in Technology

The Sanctuary could encourage and develop the use of educational technologies in supporting education themes. These include utilization of the Internet, the World Wide Web, and multimedia programs.

*Supporting and Enhancing**Existing Education Programs*

The Sanctuary could use the Great Lakes education inventory to identify existing educational programs that support Sanctuary education

themes. The Sanctuary could work to complement and assist in maintaining and enhancing these programs. In addition, the Sanctuary would develop and maintain a database of current and developmental educational programs, services, and products, and facilitate access to these educational resources.

*Developing and Maintaining**Supplemental Education Programs*

The Sanctuary could utilize the Great Lakes education inventory to evaluate the gaps in existing educational programs relative to Sanctuary themes. This evaluation would consider publics not served, themes not addressed, and opportunities for using new technologies. For example, there currently are no Great Lakes educational opportunities for adults or substantive information for tourists visiting the region. The Sanctuary, in cooperation with appropriate partners, could better prioritize education needs, and assist in securing funds to develop and maintain educational programs, products, and services.

E. RESEARCH: WORKING TOGETHER TO BETTER UNDERSTAND THUNDER BAY'S UNDERWATER CULTURAL RESOURCES AND MARITIME HERITAGE

1. INTRODUCTION

Developing knowledge about underwater cultural resources by encouraging research and monitoring programs will be a primary function of the Thunder Bay NMS. The knowledge

acquired through research and monitoring will be used to evaluate existing management practices, enhance future management decisions, and educate the public. Effective Sanctuary research and monitoring programs can only be accomplished through the active participation of the agencies and organizations that have an interest in underwater cultural resource management. The NMS Program strategic plan and state and regional plans (Table 3.5) support the function of conducting research and monitoring in the Thunder Bay NMS.

National Marine Sanctuary Program

Development of a scientific research program is consistent with the NMS Program mission to “support, promote, and coordinate scientific research on the resources [both natural and cultural], especially long-term research” (NOAA 1998: 5). The NMS Program headquarters and field offices use the best scientific information available in decision-making and support relevant scientific research in the sanctuaries to expand that knowledge base (NOAA 1998:6).

State and Regional Plans

A Sanctuary research program contributes to the Thunder Bay Underwater Preserve and the Michigan underwater preserve program by supporting the inventory, assessment, scientific study, and monitoring of underwater cultural resources. It also complements a second goal of historic preservation in Michigan to “document Michigan historic resources more fully” (Michigan

DOS 1995: xi). An effective research and monitoring program for Thunder Bay underwater cultural resources can help counties implement coastal management plans. Identification, evaluation, and monitoring of Sanctuary resources supports county recreation and economic development plans by providing accurate resource information on which to base decisions for tourism, recreation, and economic development.

2. SANCTUARY GOALS FOR RESEARCH

The following goals support the mission of the NMS Program and reflect the purposes and intentions of state and regional plans. The goals will be used to develop the Research Plan, including priorities and strategies for research and monitoring programs in the Thunder Bay NMS. The Thunder Bay NMS will work cooperatively with appropriate governmental and non-governmental entities, including the SAC, to create innovative partnerships to develop and implement these research and monitoring priorities and strategies.

Goals

In order to conduct effective and efficient research and monitoring programs, the Thunder Bay NMS will:

- inventory and assess Sanctuary underwater cultural resources, and existing and potential threats to those resources (both natural and human-induced);

- monitor Sanctuary underwater cultural resources to ensure their long-term protection and to evaluate management practices;
- develop a research plan that places the highest priority upon research that addresses threats to Sanctuary underwater cultural resources;
- develop and encourage collaborative programs with other agencies, organizations, and businesses;
- identify and evaluate the monetary and intrinsic values associated with Sanctuary underwater cultural resources (e.g., historical, recreational, economic, aesthetic); and
- encourage research targeted at management issues such as resolving multiple-use conflicts and understanding user impacts.

Management Activities for Sanctuary Research

Discussions were held during community and Core Group meetings throughout the feasibility process to identify possible management activities for Sanctuary research and monitoring programs. In addition, Martin (1996) identified important next steps for Sanctuary research efforts. These activities are not inclusive. Priorities for research activities and strategies for implementing these priorities will be incorporated into the Research Plan. The Research Plan will be developed cooperatively by the Sanctuary, the State, the SAC, and appropriate local

and regional organizations and institutions.

Research activities for the Thunder Bay NMS, including those recommended by Martin (1996), could include:

Archaeological Inventory and Assessment

The Sanctuary could facilitate an archaeological inventory and assessment of known shipwrecks in the Sanctuary. This is important for informed decision-making and site planning.

Completing Preliminary Historic Research

The Sanctuary could complete preliminary historical research on all vessels identified as having been lost in the vicinity of Thunder Bay. This research would include a search of enrollment and registration documents, court records, insurance files, and regional newspapers for information on individual vessels. All of these data would be critical in further analysis of the collection of wrecks and its eventual interpretation to both popular and scholarly audiences.

Inventorying and Locating Historical Materials

The Sanctuary could locate, inventory, and, as possible, obtain copies of iconographic materials and items of material culture related to Thunder Bay shipwrecks from regional libraries, archives, museums, and private collections. This step would be important in the broader interpretation of the maritime history of Thunder Bay and the Great Lakes to the general public. This work would involve research in local and regional archives.

Recreational Diving Impacts

The Sanctuary could investigate the factors associated with depreciative behavior (e.g., theft and vandalism) and its negative effects on shipwrecks. The positive personal and social benefits from recreational diving could also be identified and evaluated. This scientific information would enhance underwater cultural resource management and the development of monitoring programs.

Zebra Mussels, Shipwrecks, and Recreational Diving

The Sanctuary could investigate factors associated with the infestation of zebra mussels and the impacts upon shipwrecks and recreational diving. This information would help enhance visitor experiences and historic preservation efforts.

Monitoring of Tourism-Related Impacts

The Sanctuary could develop a tourism research and monitoring program to identify and evaluate the economic benefits and costs to the Sanctuary and coastal communities. The results would assist in regional decision-making.

Conducting a Theme Study

The Sanctuary could conduct a full-scale contextual theme study and develop a larger database of Great Lakes shipwrecks to further evaluate the shipwrecks of the Thunder Bay region. This information would be used to formally nominate the collection of shipwrecks for National Landmark Status. The contextual theme study and enlarged database would require extensive research in the regional, national, and international archives.

Table 3.1 Resource protection in the Thunder Bay NMS.

<p>Federal/Tribal</p> <p>NMS Program:</p> <ul style="list-style-type: none"> • Coordinates protection of Sanctuary resources; • Allocates Sanctuary funds based on recommendations of appropriate agencies, organizations, and businesses and the SAC; • Works cooperatively with US Coast Guard and other appropriate agencies, organizations, and businesses, and the SAC to develop and maintain emergency response plans for the Sanctuary; • Works cooperatively with designated Sanctuary enforcement personnel to conduct surveillance and enforcement activities in the Sanctuary; • Develops and maintains an active volunteer program for protecting underwater cultural resources; • Scientifically monitors and evaluates the overall progress toward Sanctuary resource protection; • Works cooperatively with the Michigan Department of Environmental Quality and Michigan Historical Center, and participates in the public comment process for permits being issued for underwater salvage operations and other activities impacting underwater cultural resources; and • Participates in the state public comment process for permits issued within the boundaries of the Sanctuary. <p>U.S. Coast Guard:</p> <ul style="list-style-type: none"> • Enforces federal laws throughout the Sanctuary; • Provides on-scene coordination and Regional Response Center facilities under the National Contingency Plan for the removal of oil and hazardous substances in the event of a spill that threatens Sanctuary resources; and • Conducts search and rescue operations within the boundaries of the Sanctuary.
<p>State</p> <p>Michigan Department of Environmental Quality (Michigan DEQ):</p> <ul style="list-style-type: none"> • Maintains joint responsibilities with the Michigan Historical Center for management of underwater cultural resources in the Thunder Bay Underwater Preserve and throughout the boundaries of the Sanctuary; • Works cooperatively with the NMS Program to protect and manage underwater cultural resources within the boundaries of the Sanctuary; • Issues permits for underwater salvage operations in conjunction with the Michigan Historical Center; • Issues permits for construction and other activities impacting Great Lakes bottomlands; • Works cooperatively with SAC membership to monitor and evaluate the progress toward Sanctuary resource protection; and • Supports and encourages the efforts of volunteers involved in the protection of underwater cultural resources. <p>Michigan Department of State (Michigan DOS), Michigan Historical Center:</p> <ul style="list-style-type: none"> • Maintains joint responsibilities with the Michigan DEQ for management of underwater cultural resources in the Thunder Bay Underwater Preserve and throughout the boundaries of the Sanctuary; • Issues permits for underwater salvage operations in conjunction with the Michigan DEQ; • Works cooperatively with the SAC to monitor and evaluate the progress toward Sanctuary resource protection; and • Supports and encourages the efforts of volunteers in the protection of underwater cultural resources.

Table 3.1 Resource protection in the Thunder Bay NMS (continued).

<p>State (continued)</p> <p>Michigan Department of Natural Resources (Michigan DNR):</p> <ul style="list-style-type: none">• Maintains management responsibilities for natural resources under a public trust;• Law Enforcement Division works cooperatively with the NMS Program, the USCG, Michigan State Police, and County Sheriff's Departments to conduct enforcement and surveillance operations in the Sanctuary;• Works cooperatively with the SAC to monitor and evaluate the progress toward Sanctuary resource protection; and• Supports and encourages the efforts of volunteers in the protection of underwater cultural resources.
<p>Local Governments</p> <ul style="list-style-type: none">• County Sheriff's Departments work cooperatively with the NMS Program, the USCG, the Michigan DNR Law Enforcement Division, and the Michigan State Police to conduct enforcement and surveillance operations in the Sanctuary;• Participate on the SAC and work cooperatively with its membership to monitor and evaluate the progress toward Sanctuary resource protection; and• Support and participate as volunteers in the protection of underwater cultural resources.
<p>Sanctuary Advisory Council (SAC)</p> <ul style="list-style-type: none">• Advises the Sanctuary on the effectiveness of Sanctuary regulations in providing adequate resource protection;• Advises the Sanctuary on the effectiveness of cooperative agreements for surveillance and enforcement;• Recommends improved methods of resource protection;• Establishes working groups and/or subcommittees on resource protection and enforcement as needed to provide technical advice and recommendations; and• Supports, encourages, and participates as volunteers in the protection of underwater cultural resources.

Table 3.2 Education in the Thunder Bay NMS.

<p>Federal/Tribal</p>	<p>NMS Program:</p> <ul style="list-style-type: none"> • Coordinates education efforts in the Sanctuary; • Allocates Sanctuary funds for education based on the recommendations of appropriate agencies, organizations, businesses, and the SAC; • Works cooperatively with agencies, organizations, businesses, and the SAC to prioritize education programs; • Encourages and facilitates collaborative education efforts in the Sanctuary; and • Supports and encourages volunteer education efforts in the Sanctuary. <p>Other Federal/Tribal Agencies:</p> <ul style="list-style-type: none"> • Work cooperatively with the Sanctuary to encourage and support education efforts in the Sanctuary; • Advise the Sanctuary on education priorities and opportunities; and • Support and encourage volunteers in Sanctuary education efforts.
<p>State Agencies</p>	<p>Michigan DEQ, Michigan DOS, and Michigan DNR:</p> <ul style="list-style-type: none"> • Work cooperatively with the Sanctuary to encourage and support education efforts in the Sanctuary; • Advise the Sanctuary on education priorities and opportunities; and • Support and encourage volunteers in Sanctuary education efforts.
<p>Local Governments</p>	<ul style="list-style-type: none"> • Work cooperatively with the Sanctuary to encourage and support education efforts in the Sanctuary; • Participate on the SAC to advise the Sanctuary on education priorities and opportunities; and • Support, encourage, and participate as volunteers in Sanctuary education efforts.
<p>Sanctuary Advisory Council</p>	<ul style="list-style-type: none"> • Reviews education proposals and projects and advises the Sanctuary; • Advises the Sanctuary on education needs and opportunities; and • Supports, encourages, and participates as volunteers in education efforts.

Table 3.3 Research in the Thunder Bay NMS.

Federal/Tribal	<p>NMS Program:</p> <ul style="list-style-type: none"> • Coordinates research and monitoring efforts in the Sanctuary; • Allocates Sanctuary funds for research based on the recommendations of appropriate agencies, organizations, and businesses and the SAC; • Works cooperatively with agencies, organizations, businesses, and the SAC to prioritize research projects based on criteria such as management issues; • Encourages and facilitates collaborative research and monitoring efforts in the Sanctuary; and • Supports and encourages volunteers in Sanctuary research and monitoring efforts. <p>Other Federal/Tribal Agencies:</p> <ul style="list-style-type: none"> • Work cooperatively with the Sanctuary to encourage and support research efforts in the Sanctuary; • Advise the Sanctuary on research priorities and opportunities; and • Support and encourage volunteers in Sanctuary research and monitoring efforts.
State Agencies	<p>Michigan DEQ, Michigan DOS, and Michigan DNR:</p> <ul style="list-style-type: none"> • Work cooperatively with the Sanctuary to encourage and support research efforts in the Sanctuary; • Advise the Sanctuary on research priorities and opportunities; and • Support and encourage volunteers in Sanctuary research and monitoring efforts.
Local Governments	<ul style="list-style-type: none"> • Work cooperatively with the Sanctuary to encourage and support research efforts in the Sanctuary; • Participate on the SAC to advise the Sanctuary on research priorities and opportunities; and • Support, encourage, and participate as volunteers in Sanctuary research and monitoring efforts.
Sanctuary Advisory Council	<ul style="list-style-type: none"> • Advises the Sanctuary on the review of Sanctuary research and monitoring projects and proposals; • Advises the Sanctuary on research needs and opportunities; and • Supports, encourages, and participates as volunteers in research and monitoring efforts.

Table 3.4 Potential Sanctuary operating budgets and cost-share partnerships.

	Year 1	Year 2	Year 3	Year 4	Year 5
Thunder Bay NIMS Operating Budget	\$200,000	\$300,000	\$400,000	\$500,000	\$500,000
State and Local Partners	\$10,000 (Services)	\$29,000 (\$10,000 Services, \$19,000 Salary)	\$60,000 (\$20,000 Services, \$40,000 Salary)	\$71,800 (\$30,600 Services, \$41,200 Salary)	\$83,400 (\$41,000 Services, \$42,400 Salary)
Capital Expenditures			\$84,000 (Boat)		\$1,300,000 (Maritime Heritage C
Functions of the Thunder Bay NIMS	<ul style="list-style-type: none"> Sanctuary designation Establishment of Sanctuary Advisory Council (SAC) Programs to develop awareness of Sanctuary and resources Work with SAC to finalize management priorities (e.g., mooring buoy program, enforcement program, volunteer program) Hire Research Coordinator/Maritime Archaeologist 	<ul style="list-style-type: none"> Hire Education Coordinator Development of education and research plans Programs to develop awareness of Sanctuary and resources Volunteer program Continue implementation of management plan 	<ul style="list-style-type: none"> Implementation of education and research plans Develop plan and fundraising strategies for Maritime Heritage Center Volunteer program Continue implementation of management plan Acquisition of Sanctuary research and education vessel 	<ul style="list-style-type: none"> Fundraising for the Maritime Heritage Center Continue implementation of research and education plans Continue implementation of management plan 	<ul style="list-style-type: none"> Construction of the Maritime Heritage Center Continue implementation of research and education plans Continue implementation of management plan

Table 3.5 Comparison of federal, state, and local plans to the functions of the Thunder Bay NMS.

Strategic, Recreation, and Economic Development Plans	Functions of the Thunder Bay NMS		
	Resource Protection	Research	Education
Federal Plans			
NOAA Strategic Plan	"...to conserve and manage wisely the Nation's coastal and marine resources..."	"...to describe and predict changes in the Earth's environment..."	
National Marine Sanctuary Program	"...to manage marine and Great Lakes areas of special national significance to protect their ecological and cultural integrity..."	"...develop research programs that ... promote the ecologically sustainable use of the nation's... cultural resources."	"develop and implement stewardship, education, ...programs that foster public understanding, support and participation of the nation's natural and cultural marine resources."
U.S. Coast Guard Sault Ste. Marie Local Contingency plan	"...to provide for a well coordinated, multi-organizational response at the local level to protect human and environmental resources threatened by an actual or anticipated pollution incident."		
State Plans			
Comprehensive Historic Preservation Plan	"...increase protection of Michigan's historic resources..."	"...document Michigan's historic resources more fully..."	"...increase public knowledge of Michigan's historic resources and the benefits of historic preservation."
Environmental Education Plan			The goal of environmental education programs is to assist citizens in becoming more aware and informed of environmental issues, and thereby, place a greater value on the State's resources.
Local Plans (City of Alpena)			
Coastal Land Use & Design Plan	Focus efforts on the Thunder Bay Underwater Preserve, and the waterfront for tourism and associated development.	Analyze coastal area features to determine the best uses of the coastal area while maintaining ties with the City's heritage.	Focus efforts on the Thunder Bay Underwater Preserve, and the waterfront for tourism and associated development.
City of Alpena Comprehensive Development Plan	Focus efforts on the waterfront and the area's other natural resources.	Focus efforts on the waterfront and the area's other natural resources.	Promote the Thunder Bay Underwater Preserve, and facilities and services for scuba divers. Provide a permanent shipwreck interpretive center.

Table 3.5 Comparison of federal, state, and local plans to the functions of the Thunder Bay NMS (continued).

Strategic, Recreation, and Economic Development Plans	Functions of the Thunder Bay NMS		
	Resource Protection	Research	Education
Local Plans (City of Alpena)			
City of Alpena Downtown- Waterfront Linkage Plan			Recognize the importance of waterfront visitors, and provide high quality community experiences.
Alpena, Michigan Retail Market Assessment & Strategic Plan			"...acquire frontage along the Thunder Bay River or waterfront as a site for an Underwater Park and Museum based on Alpena's shipwreck history"
Local Plans (County of Alpena)			
Alpena County Coastal Land Management Plan	Local governments should recognize the importance of coastal resources, including the numerous shipwrecks found in the coastal areas and shallows. National Marine Sanctuary designation should be sought in order to promote the management of these cultural resources.	Analyze coastal area resources and issues, and propose alternative management options and strategies focusing on important coastal resources.	Promote the Thunder Bay Underwater Preserve.
County of Alpena Recreation Master Plan	Recognizes the Thunder Bay Underwater Preserve and the proposed Sanctuary as unique county features.		Describes the need to establish a Great Lakes visitor center.
Economic Adjustment Strategy for Alpena County	Recognizes the importance of coastal and water resources, and for having high quality designated natural areas (e.g., state parks) for tourism and recreation.		
Local Plans (Presque Isle County)			
Recreation Plan for Presque Isle County	Recognizes the abundance and importance of high quality water resources.		Discusses renovations of the Presque Isle Lighthouse Park, a popular tourist attraction.

Table 3.5 Comparison of federal, state, and local plans to the functions of the Thunder Bay NMS (continued).

Strategic, Recreation, and Economic Development Plans	Functions of the Thunder Bay NMS		
	Resource Protection	Research	Education
Local Plans (Alcona County)			
Area-wide Recreation Master Plan for Alcona County, Alcona Township, and Curtis Township	Places high priority on protecting county shorelines, lakes, streams, wetlands, forestlands, and recreational properties.		High priority placed on the Black River/Lake Huron Fishing Pier Project along 160 feet of Lake Huron shoreline.
Alcona County Economic Development Strategy and Action Summary	Recognizes the importance of economic development without a decline in environmental quality.		
Regional Plans (Northeast Michigan)			
Northeast Michigan Economic Strategy Directions for Regional Strategic Planning	Recommendations include preserving the natural resources that attract tourists.		Recommendations include nurturing of education at all levels, and acting upon opportunities that exist in tourism and water-related recreational development.
Northeast Michigan Overall Economic Development Program Annual Report	Utilize Northeast Michigan's natural resources to enhance economic development; employ sound management practices that also preserve these resources.		
Northeastern Michigan Growth Trends	Tourism in Michigan is the third largest industry. The major attraction is the quality of the natural resources.		

Attachment 1:**Draft Designation Document and Draft Final Regulations
for the
Thunder Bay National Marine Sanctuary****A. Draft Designation Document for the Thunder Bay National Marine Sanctuary**

Section 304(a)(4) of the National Marine Sanctuaries Act requires that the terms of designation include the geographic area included within the Sanctuary; the characteristics of the area that give it conservation, recreational, ecological, historical, research, educational, or esthetic value; and the types of activities that will be subject to regulation by the Secretary of Commerce to protect those characteristics. The terms of designation may be modified only by the procedures provided in section 304(a) of the Act (the same procedures by which the original designation is made). Thus, the terms of designation serve as a constitution for the Sanctuary.

Under the authority of the National Marine Sanctuaries Act, as amended (the "Act" or "NMSA"), 16 U.S.C. §§ 1431 *et seq.*, Thunder Bay and its surrounding waters offshore of Michigan, and the submerged lands under Thunder Bay and its surrounding waters, as described in Article II, are hereby designated as the Thunder Bay National Marine Sanctuary for the purposes of providing long-term protection and management to the conservation, recreational, research, educational, and historical resources and qualities of the area.

Article I. Effect of Designation

The NMSA authorizes the issuance of such regulations as are necessary and reasonable to implement the designation, including managing and protecting the conservation, recreational, historical, research, and educational resources and qualities of the Thunder Bay National Marine Sanctuary (the "Sanctuary"). Section 1 of Article IV of this Designation Document lists those activities that may be regulated on the effective date of designation, or at some later date, in order to protect Sanctuary resources and qualities. Listing does not necessarily mean that an activity will be regulated; however, if an activity is not listed it may not be regulated, except on an emergency basis, unless Section 1 of Article IV is amended to include the type of activity by the same procedures by which the original Sanctuary designation was made, as outlined in section 304(a) of the NMSA.

Article II. Description of the Area

The Thunder Bay National Marine Sanctuary boundary encompasses a total of 808 square miles of surface waters of Lake Huron and the submerged lands thereunder, over and around the underwater cultural resources in Thunder Bay. The boundary forms an approximately rectangular area by extending along the ordinary high water mark of the Michigan shoreline from Presque Isle Lighthouse, at 45°21'24" N latitude, south to Sturgeon Point Lighthouse, at 44°42'46" N latitude, and lakeward from those points along latitude lines to longitude 83 degrees west . The precise boundary is set forth in Appendix A to the regulations.

Article III. Characteristics of the Area That Give It Particular Value

Thunder Bay and its surrounding waters contain approximately 160 shipwrecks spanning more than a century of Great Lakes maritime history. Virtually every type of vessel used on open Great Lakes waters has been documented in the Thunder Bay region, linking Thunder Bay inextricably to Great Lakes commerce. Most of the Great Lakes trades had a national, and sometimes an international, significance, and resulted in uniquely-designed vessels. Although not all of Thunder Bay's shipwrecks have been identified, studies undertaken to date indicate strong evidence of the Bay's national historic significance. The sunken vessels reflect transitions in ship architecture and construction methods, from wooden sailboats to early iron-hulled steamers.

Several major conclusions regarding Thunder Bay's shipwrecks may be drawn from research and analysis undertaken to date: they are representative of the composition of the Great Lakes merchant marine from 1840 to 1970; they provide information on the various phases of American westward expansion; they provide information on the growth of American extraction and use of natural resources; they illustrate various phases of American industrialization; one shipwreck (*Isaac M. Scott*) may be used to study and interpret a specific event (the Great Storm of 1913) that had strong repercussions regionally, nationally, and internationally; and they provide interpretive material for understanding American foreign intercontinental trade within the Great Lakes.

Thunder Bay was established as the first State of Michigan Bottomland Preserve in 1981 to protect underwater cultural resources. Increasing public interest in underwater cultural resources underscores the importance of continued efforts to discover, explore, document, study and to provide long-term, comprehensive protection for the Bay's shipwrecks and other underwater cultural resources.

Article IV. Scope of Regulations

Section 1. Activities Subject to Regulation. The following activities are subject to regulation under the NMSA, including prohibition, to the extent necessary and reasonable to ensure the protection and management of the conservation, recreational, historical, research and educational resources and qualities of the area:

a. Recovering, altering, destroying, possessing, or attempting to recover, alter, destroy or possess, an underwater cultural resource;

b. Drilling into, dredging or otherwise altering the lakebottom associated with underwater cultural resources, including contextual information; or constructing, placing or abandoning any structure, material or other matter on the lakebottom associated with underwater cultural resources, except as an incidental result of:

(i) Anchoring vessels;

(ii) Traditional fishing operations (as defined in the regulations); or

(iii) Minor projects as defined upon adoption of this regulation in R.322.1013 of Part 325, Great Lakes Submerged Lands of Public Act 451 (1994), as amended, that do not adversely affect underwater cultural resources (see Appendix B of Subpart R);

c. Using grappling hooks or other anchoring devices on underwater cultural resource sites that are marked with a mooring buoy.

d. Interfering with, obstructing, delaying or preventing an investigation, search, seizure or disposition of seized property in connection with enforcement of the NMSA or any regulations issued under the NMSA.

Section 2. Consistency With International Law. The regulations governing the activities listed in Section 1 of this Article shall apply to United States-flag vessels and to persons who are citizens, nationals, or resident aliens of the United States to the extent consistent with generally recognized principles of international law, and in accordance with treaties, conventions, and other agreements to which the United States is a party.

Section 3. Emergencies. Where necessary to prevent or minimize the destruction of, loss of, or injury to a Sanctuary resource or quality; or minimize the imminent risk of such destruction, loss, or injury, any and all such activities, including those not listed in Section 1, are subject to immediate

temporary regulation, including prohibition. NOAA will obtain concurrence from the Governor of Michigan prior to imposing emergency regulations.

Article V. Effect on Other Regulations, Leases, Permits, Licenses, and Rights

Section 1. Fishing Regulations, Licenses, and Permits. Fishing in the Sanctuary shall not be regulated as part of the Sanctuary management regime authorized by the Act. However, fishing in the Sanctuary may be regulated other than under the Act by Federal, State, Tribal and local authorities of competent jurisdiction, and designation of the Sanctuary shall have no effect on any regulation, permit, or license issued thereunder.

Section 2. Other. If any valid regulation issued by any Federal, State, or local authority of competent jurisdiction, regardless of when issued, conflicts with a Sanctuary regulation, the regulation deemed by the Director, Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration, or his or her designee, in consultation with the State of Michigan, to be more protective of Sanctuary resources shall govern.

Pursuant to section 304(c)(1) of the Act, 16 U.S.C. § 1434(c)(1), no valid lease, permit, license, approval, or other authorization issued by any Federal, State, or local authority of competent jurisdiction, or any right of subsistence use or access, may be terminated by the Secretary of Commerce, or his or her designee, as a result of this designation, or as a result of any Sanctuary regulation, if such lease, permit, license, approval, or other authorization, or right of subsistence use or access was issued or in existence as of the effective date of this designation. However, the Secretary of Commerce, or his or her designee, in consultation with the State of Michigan, may regulate the exercise of such authorization or right consistent with the purposes for which the Sanctuary is designated.

Article VI. Alteration of This Designation

The terms of designation, as defined under Section 304 (e) of the Act, may be modified only by the same procedures by which the original designation is made, including public hearings, consultations with interested Federal, State, Tribal, regional, and local authorities and agencies, review by the appropriate Congressional committees, and review and non-objection by the Governor of the State of Michigan, and approval by the Secretary of Commerce, or his or her designee.

B. Draft Final Regulations for the Thunder Bay National Marine Sanctuary**Subpart R — Thunder Bay National Marine Sanctuary**

- 922.190** **Boundary.**
- 922.191** **Definitions.**
- 922.192** **Prohibited or otherwise regulated activities.**
- 922.193** **Certification of preexisting leases, licenses, permits, approvals, other authorizations, or rights to conduct a prohibited activity.**
- 922.194** **Permit procedures and criteria.**
- 922.195** **Emergency regulations.**
- 922.196** **Procedures for adding underwater cultural resources to the Sanctuary boundary.**

Appendix A to Subpart R of Part 922 – Thunder Bay National Marine Sanctuary Boundary Coordinates**Appendix B to Subpart R of Part 922 – Minor Projects for Purposes of Section 922.192(a)(2)(iii)**

Authority: Sections 302, 303, 304, 305, 306, 307, 310, and 312 of the National Marine Sanctuaries Act (NMSA) (16 U.S.C. 1431 *et seq.*)

§ 922.190 Boundary.

(a) The Thunder Bay National Marine Sanctuary (Sanctuary) consists of an area of approximately 808 square miles of waters of Lake Huron and the submerged lands thereunder, over, around, and under the underwater cultural resources in Thunder Bay. The boundary forms an approximately rectangular area by extending along the ordinary high water mark of the Michigan shoreline from Presque Isle Lighthouse, at 45°21'.24" N latitude, south to Sturgeon Point Lighthouse, at 44°42'.46" N latitude, cutting across the mouths of rivers and streams, and lakeward from those points along latitude lines to longitude 83 degrees west. The coordinates of the boundary are set forth in Appendix A to this Subpart.

§ 922.191 Definitions.

- (a) The following terms are defined for purposes of Subpart R:
- Minor project means any project listed in Appendix B to this Subpart.

Programmatic Agreement means the agreement among NOAA, the Federal Advisory Council on Historic Preservation, and the State of Michigan, developed pursuant to the NMSA and Section 106 of the National Historic Preservation Act, which, in part, sets forth the procedures for review and approval of State Permits that authorize activities prohibited by the Sanctuary regulations.

Sanctuary resource means any underwater cultural resource as defined in this section.

State Archaeologist means the State Archaeologist, Michigan Historical Center, Michigan Department of State.

State Permit means any lease, permit, license, approval, or other authorization issued by the State of Michigan for the conduct of activities or projects within the Thunder Bay National Marine Sanctuary that are prohibited by the regulations at § 922.192.

Traditional fishing means those commercial or recreational fishing activities that were customarily conducted within the Sanctuary prior to its designation, as identified in the Final Environmental Impact Statement and Management Plan for this Sanctuary. Traditional fishing covers tribal fishing rights as provided for in the 1836 Treaty of Washington and subsequent court decisions related to the Treaty.

Underwater cultural resource means any sunken watercraft, including a ship, boat, canoe, skiff, raft, or barge; the rigging, gear, fittings, trappings, and equipment of any watercraft; the personal property of the officers, crew, and passengers of any sunken watercraft; and the cargo of any sunken watercraft, that existed prior to the effective date of Sanctuary designation. Underwater cultural resource also means any historical remnant of docks or piers or associated material, or materials resulting from activities of historic and prehistoric Native Americans. For any other underwater cultural resource to be considered a Sanctuary resource, it must meet the criteria set forth in § 922.196.

(b) Other terms appearing in the regulations are defined at 15 CFR Part 922 Subpart A, and/or in the National Marine Sanctuaries Act, as amended, 16 U.S.C. 1431 *et seq.*

§ 922.192 Prohibited or otherwise regulated activities.

(a) Except as specified in paragraphs (b) through (c) of this section, and consistent with all treaty rights, the following activities are prohibited and thus are unlawful for any person to conduct or to cause to be conducted:

(1) Recovering, altering, destroying, possessing, or attempting to recover, alter, destroy, or possess an underwater cultural resource.

(2) Drilling into, dredging or otherwise altering the lakebottom associated with underwater cultural resources, including contextual information; or constructing, placing or abandoning any structure, material or other matter on the lakebottom associated with underwater cultural resources, except as an incidental result of:

- (i) anchoring vessels;
- (ii) traditional fishing operations; or
- (iii) minor projects (as defined in Appendix B of this subpart) that do not adversely affect underwater cultural resources.

(3) Using grappling hooks or other anchoring devices on underwater cultural resource sites that are marked with a mooring buoy.

(4) Interfering with, obstructing, delaying or preventing an investigation, search, seizure or disposition of seized property in connection with enforcement of the Act or any regulations issued under the Act.

(b) The prohibitions in paragraphs (a)(1) through (3) of this section do not apply to valid law enforcement activities, or any activity necessary to respond to an emergency threatening life or the environment.

(c) The prohibitions in paragraphs (a)(1) through (3) of this section do not apply to any activity:

(1) Specifically authorized by, and conducted in accordance with the scope, purpose, terms and conditions of, a permit issued pursuant to § 922.194 or a Special Use Permit issued pursuant to section 310 of the NMSA.

(2) Specifically authorized by any valid Federal, State, or local lease, permit, license, approval, or other authorization in existence on the effective date of these regulations, or by any valid right of subsistence use or access in existence on the effective date of these regulations, provided that the holder of such authorization or right complies with § 922.193 and § 922.47 and with any terms and conditions for the exercise of such authorization or right imposed by the Director as a condition of certification as he or she deems reasonably necessary to achieve the purposes for which the Sanctuary was designated.

(3) Specifically authorized by any valid Federal, State, or local lease, permit, license, approval, or other authorization issued after the effective date of these regulations, provided that the applicant complies with § 922.49, the Director notifies the applicant and authorizing agency that he or she does not object to issuance of the authorization, and the applicant complies with any terms and conditions the Director deems reasonably necessary protect Sanctuary resources. Amendments, renewals and extensions of authorizations in existence on the effective date of these regulations constitute authorizations issued after the effective date of these regulations.

§ 922.193 Certification of preexisting leases, licenses, permits, approvals, other authorizations, or rights to conduct a prohibited activity.

(a) A person may conduct an activity prohibited by § 922.192 (a)(1) through (3) if such activity is specifically authorized by a valid Federal, State, or local lease, permit, license, approval, or other authorization in existence on the effective date of Sanctuary designation, or by any valid right of subsistence use or access in existence on the effective date of Sanctuary designation, provided that:

(1) for any State or local lease, permit, license, approval, or other authorization, or any right of subsistence use, the State Archaeologist certifies to the Director, within 90 days of the effective date of designation, that the activity authorized under the State or local lease, permit, license, approval, or other authorization, or any right of subsistence use, is being conducted consistent with the Programmatic Agreement, in which case such activity shall be deemed to have met the requirements of this section and § 922.47; or

(2) in the case where either (i) the State Archaeologist does not certify that the activity authorized under a State or local lease, permit, license, approval, or other authorization, or right of subsistence use is being conducted consistent with the Programmatic Agreement; or (ii) the activity is conducted pursuant only to a Federal permit, the holder of the authorization or right complies with paragraphs (b) through (k) of this section.

(b) For an activity described in paragraph (a)(2) of this section, the holder of the authorization or right may conduct the activity prohibited by § 922.192(a)(1) through (3) provided that: (1) the holder of such authorization or right notifies the Director, in writing, within 90 days of the effective date of Sanctuary designation, of the existence of such authorization or right and requests certification of such authorization or right; (2) the holder complies with the other provisions of § 922.193; and (3) the holder complies with any terms and conditions on the exercise of such authorization or right imposed as a condition of certification, by the Director, to achieve the purposes for which the Sanctuary was designated.

(c) The holder of an authorization or right described in paragraph (a)(2) above authorizing an activity prohibited by § 922.192 may conduct the activity without being in violation of applicable provisions of § 922.192, pending final agency action on his or her certification request, provided the holder is in compliance with this § 922.193.

(d) Any holder of an authorization or right described in paragraph (a)(2) above may request the Director to issue a finding as to whether the activity for which the authorization has been issued, or the right given, is prohibited by § 922.192, thus requiring certification under this section.

(e) Requests for findings or certifications should be addressed to the Director, Office of Ocean and Coastal Resource Management; ATTN: Sanctuary Manager, Thunder Bay National Marine Sanctuary, 1305 East-West Highway, N/ORM, Silver Spring, Maryland, 20910. A copy of the lease, permit, license, approval, or other authorization must accompany the request.

(f) The Director may request additional information from the certification requester as he or she deems reasonably necessary to condition appropriately the exercise of the certified authorization or right to achieve the purposes for which the Sanctuary was designated. The Director must receive the information requested within 45 days of the postmark date of the request. The Director may seek the views of any persons on the certification request.

(g) The Director may amend any certification made under this § 922.193 whenever additional information becomes available justifying such an amendment.

(h) Upon completion of review of the authorization or right and information received with respect thereto, the Director shall communicate, in writing, any decision on a certification request or any action taken with respect to any certification made under this § 922.193, in writing, to both the

holder of the certified lease, permit, license, approval, other authorization, or right, and the issuing agency, and shall set forth the reason(s) for the decision or action taken.

(i) Any time limit prescribed in or established under this § 922.193 may be extended by the Director for good cause.

(j) The holder may appeal any action conditioning, amending, suspending, or revoking any certification in accordance with the procedures set forth in § 922.50.

(k) Any amendment, renewal, or extension made after the effective date of Sanctuary designation, to a lease, permit, license, approval, other authorization or right is subject to the provisions of § 922.194 and § 922.49.

§ 922.194 Permit procedures and criteria.

(a) A person may conduct an activity prohibited by § 922.192 (a)(1) through (3), if conducted in accordance with the scope, purpose, terms and conditions of a State Permit provided that:

(1) the State Archaeologist certifies to NOAA that the activity authorized under the State Permit will be conducted consistent with the Programmatic Agreement, in which case such State Permit shall be deemed to have met the requirements of § 922.49; or

(2) in the case where the State Archaeologist does not certify that the activity to be authorized under a State Permit will be conducted consistent with the Programmatic Agreement, the person complies with the requirements of § 922.49 of this part.

(b) If no State Permit is required to conduct an activity prohibited by § 922.192 (a)(1) through (3) of this subpart, a person may conduct such activity if it is conducted in accordance with the scope, purpose, terms and conditions of a Federal permit, provided that the person complies with the provisions of § 922.49 of this part.

(c) In instances where the conduct of an activity is prohibited by § 922.192 (a)(1) through (3) of this subpart is not addressed under a State or other Federal lease, license, permit or other authorization, a person must obtain a Sanctuary permit from NOAA pursuant to § 922.48 (c) through (f) of this part and the Programmatic Agreement in order to conduct the activity.

(d) A permit may be issued if (i) the proposed activity satisfies the requirements for permits described under paragraphs (a) through (c) of this section; (ii) the recovery of the underwater cultural resource is in the public interest; (iii) recovery of the underwater cultural resource is part of research to preserve historic information for public use; and (iv) recovery of the underwater cultural resource is necessary or appropriate to protect the resource, preserve historical information, or further the policies of the Thunder Bay National Marine Sanctuary.

(e) A person shall file an application for a permit with the Michigan Department of Environmental Quality, Land and Water Management Division, P.O. Box 30458, Lansing, MI, 48909-7958. The application shall contain all of the following information:

- i) the name and address of the applicant;
- ii) research plan that describes in detail the specific research objectives and previous work done at the site. An archaeological survey must be conducted on a site before an archaeological permit allowing excavation can be issued;
- iii) description of significant previous work in the area of interest, how the proposed effort would enhance or contribute to improving the state of knowledge, why the proposed effort should be performed in the Sanctuary, and its potential benefits to the Sanctuary;
- iv) an operational plan that describes the tasks required to accomplish the project's objectives and the professional qualifications of those conducting and supervising those tasks (see § 922.194(e)(ix) below). The plan should provide adequate description of methods to be used for excavation, recovery and the storage of artifacts and related materials on site, and describe the rationale for selecting the proposed methods over any alternative methods;
- v) archaeological recording, including site maps, feature maps, scaled photographs, and field notes;
- vi) an excavation plan describing the excavation, recovery and handling of artifacts;
- vii) a conservation plan documenting: (1) the conservation facility's equipment; (2) ventilation temperature and humidity control; and (3) storage space. Documentation of intended conservation methods and processes should also be included;
- viii) a curation and display plan for the curation of the conserved artifacts to ensure the maintenance

and safety of the artifacts in keeping with the Sanctuary's federal stewardship responsibilities under the Federal Archaeology Program (36 CFR Part 79, Curation of Federally-Owned and Administered Archaeological Collections);

- ix) documentation of the professional standards of an archaeologist supervising the archaeological recovery of historical artifacts. The minimum professional qualifications in archaeology are a graduate degree in archaeology, anthropology, or closely related field plus:
1. At least one year of full-time professional experience or equivalent specialized training in archeological research, administration or management;
 2. At least four months of supervised field and analytic experience in general North American archaeology;
 3. Demonstrated ability to carry research to completion; and
 4. At least one year of full-time professional experience at a supervisory level in the study of archeological resources in the underwater environment.

922.195 Emergency regulations

(a) Where necessary to prevent or minimize the destruction of, loss of, or injury to an underwater cultural resource, or to minimize the imminent risk of such destruction, loss, or injury, any and all activities are subject to immediate temporary regulation, including prohibition. Such emergency regulations shall not take effect without concurrence from the Governor of Michigan.

922.196 Procedures for adding underwater cultural resources to the Sanctuary boundary

(a) Only those underwater cultural resources that existed in the Sanctuary boundary prior to the effective date of Sanctuary designation are considered Sanctuary resources. In order for any other resource to be considered an underwater cultural resource as defined in these regulations, the Director, in consultation with the State and relevant federal agencies, must:

(1) determine that the resource is 50 years or older and of special national significance due to architectural significance or association with individuals or events that are significant to local or national history; and

(2) provide a 45-day public comment period.

Appendix A to Subpart R of Part 922 – Thunder Bay National Marine Sanctuary Boundary Coordinates

[Based on North American Datum of 1983]

Point	Latitude	Longitude
1.....	45°21'24"	83°29'38"
2.....	45°21'24"	83°00'00"
3.....	44°42'46"	83°00'00"
4	44°42'46"	83°16'26"

Appendix B to Subpart R of Part 922 – Minor Projects for Purposes of Section 922.192(a)(2)(iii)

Pursuant to R 322.1013 of Part 325, Great Lakes Submerged Lands of Public Act 451, the Michigan Department of Environmental Quality (Department) issues permits for projects that are of a minor nature which are not controversial, which have minimal adverse environmental impact, which will be constructed of clean, non-polluting materials, which do not impair the use of the adjacent bottomlands by the public, and which do not adversely affect riparian interests of adjacent owners. The following projects are minor projects:

- (a) Noncommercial single piers, docks, and boat hoists which meet the following design criteria:
 - (i) are of a length or size not greater than the length or size of similar structures in the vicinity and on the watercourse involved; and
 - (ii) provide for the free littoral flow of water and drift material.

- (b) Spring piles and pile clusters when their design and purpose is usual for such projects in the vicinity and on the watercourse involved.

- (c) Seawalls, bulkheads, and other permanent revetment structures which meet all of the following purpose and design criteria:
 - (i) the proposed structure fulfills an identifiable need for erosion protection, bank stabilization, protection of uplands, or improvements on uplands;
 - (ii) the structure will be constructed of suitable materials free from pollutants, waste metal products, debris, or organic materials;
 - (iii) the structure is not more than 300 feet in length and is located in an area on the body of water where other similar structures already exist;

(iv) the placement of backfill or other fill associated with the construction does not exceed an average of 3 cubic yards per running foot along the shoreline and a maximum of 300 cubic yards; and

(v) the structure or any associated fill will not be placed in a wetland area or placed in any manner that impairs surface water flow into or out of any wetland area.

(d) Groins 50 feet or less in length, as measures from the toe to bluff, which meet all of the following criteria:

(i) the groin is low profile, with the lakeward end not more than 1 foot above the existing water level; and

(ii) the groin is placed at least 1/2 of the groin length from the adjacent property line or closer with written approval of the adjacent riparian.

(e) Filling for restoration of existing permitted fill, fills placed incidental to construction of other structures, and fills that do not exceed 300 cubic yards as a single and complete project, where the fill is of suitable material free from pollutants, waste metal products, debris, or organic materials.

(f) Dredging for the maintenance of previously dredged areas or dredging of not more than 300 cubic yards as a single and complete project when both of the following criteria are met:

(i) no reasonable expectation exists that the materials to be dredged are polluted; and

(ii) all dredging materials will be removed to an upland site exclusive of wetland areas.

(g) Structural repair of man-made structures, except as exempted by R 322.1008(3), when their design and purpose meet both of the following criteria:

(i) the repair does not alter the original use of a recently serviceable structure; and

(ii) the repair will not adversely affect public trust values or interests, including navigation and water quality.

(h) Fish or wildlife habitat structures which meet both of the following criteria:

(i) are placed so the structures do not impede or create a navigational hazard; and

(ii) are anchored to the bottomlands.

(i) Scientific structures such as staff gauges, water monitoring devices, water quality testing devices, survey devices, and core sampling devices, if the structures do not impede or create a navigational hazard.

(j) Navigational aids which meet both of the following criteria:

- (i) are approved by the United States Coast Guard; and
 - (ii) are approved under Act No. 303 of the Public Acts of 1967, as amended, being §281.1001 et seq. of the Michigan Compiled Laws, and known as the Marine Safety Act.
- (k) Extension of a project where work is being performed under a current permit and which will result in no damage to natural resources.
- (l) A sand trap wall which meets all of the following criteria:
- (i) the wall is 300 feet or less in length along the shoreline;
 - (ii) the wall does not extend more than 30 feet lakeward of the toe of bluff;
 - (iii) the wall is low profile, that is, it is not more than 1 foot above the existing water level; and
 - (iv) the wall is constructed of wood or steel or other non-polluting material.
- (m) Physical removal of man-made structures or natural obstructions which meet all of the following criteria:
- (i) the debris and spoils shall be removed to an upland site, not in a wetland, in a manner which will not allow erosion into public waters;
 - (ii) the shoreline and bottom contours shall be restored to an acceptable condition; and
 - (iii) upon completion of structure removal, the site does not constitute a safety or navigational hazard. Department staff shall consider fisheries and wildlife resource values when evaluating applications for natural obstruction removal.

PROPOSED AMENDMENTS TO GENERIC SANCTUARY REGULATIONS

§ 922.1 Applicability of regulations.

Unless noted otherwise, the regulations in Subparts A, D and E apply to all thirteen National Marine Sanctuaries for which site-specific regulations appear in Subparts F through R, respectively. Subparts B and C apply to the site evaluation list and to the designation of future Sanctuaries.

§ 922.3 Definitions.

Sanctuary resource means any living or non-living resource of a National Marine Sanctuary that contributes to the conservation, recreational, ecological, historical, research, educational, or aesthetic value of the Sanctuary, including, but not limited to, the substratum of the area of the Sanctuary, other submerged features and the surrounding seabed, carbonate rock, corals and other bottom forma-

tions, coralline algae and other marine plants and algae, marine invertebrates, brine-seep biota, phytoplankton, zooplankton, fish, seabirds, sea turtles and other marine reptiles, marine mammals and historical resources. For Thunder Bay National Marine Sanctuary, Sanctuary resource means an underwater cultural resource defined at §922.191.

§ 922.40 Purpose.

The purpose of the regulations in this Subpart and in Subparts F through R is to implement the designations of the thirteen National Marine Sanctuaries for which site specific regulations appear in Subparts F through R, respectively, by regulating activities affecting them, consistent with their respective terms of designation in order to protect, preserve and manage and thereby ensure the health, integrity and continued availability of the conservation, ecological, recreational, research, educational, historical and aesthetic resources and qualities of these areas. Additional purposes of the regulations implementing the designation of the Florida Keys and Hawaiian Islands Humpback Whale National Marine Sanctuaries are found at §§ 922.160, and 922.180, respectively.

§ 922.41 Boundaries.

The boundary for each of the thirteen National Marine Sanctuaries covered by this part is described in Subparts F through R, respectively.

§ 922.42 Allowed Activities.

All activities (e.g., fishing, boating, diving, research, education) may be conducted unless prohibited or otherwise regulated in Subparts F through R, subject to any emergency regulations promulgated pursuant to §§ 922.44, 922.111(c), 922.165, 922.186, or 922.195, subject to all prohibitions, regulations, restrictions, and conditions validly imposed by any Federal, State, or local authority of competent jurisdiction, including Federal and State fishery management authorities, and subject to the provisions of § 312 of the Act. The Assistant Administrator may only directly regulate fishing activities pursuant to the procedure set forth in § 304(a)(5) of the NMSA.

§ 922.43 Prohibited or otherwise regulated activities.

Subparts F through R set forth site-specific regulations applicable to the activities specified therein.

§ 922.44 Emergency regulations.

Where necessary to prevent or minimize the destruction of, loss of, or injury to a Sanctuary resource or quality, or minimize the imminent risk of such destruction, loss, or injury, any and all such activities are subject to immediate temporary regulation, including prohibition. The provisions of this

section do not apply to the Cordell Bank, Florida Keys, Hawaiian Islands Humpback Whale, and Thunder Bay National Marine Sanctuaries. See §§ 922.111(c), 922.165, and 922.186, 922.195, respectively, for the authority to issue emergency regulations with respect to those sanctuaries.

§ 922.45 Penalties.

(a) Each violation of the NMSA or FKNMSPA, any regulation in this part, or any permit issued pursuant thereto, is subject to a civil penalty of not more than \$100,000. Each day of a continuing violation constitutes a separate violation.

(b) Regulations setting forth the procedures governing administrative proceedings for assessment of civil penalties, permit sanctions, and denials for enforcement reasons, issuance and use of written warnings, and release or forfeiture of seized property appear at 15 CFR Part 904.

§ 922.46 Response costs and damages.

Under § 312 of the Act, any person who destroys, causes the loss of, or injures any Sanctuary resource is liable to the United States for response costs and damages resulting from such destruction, loss or injury, and any vessel used to destroy, cause the loss of, or injure any Sanctuary resource is liable in rem to the United States for response costs and damages resulting from such destruction, loss or injury.

§ 922.47 Pre-existing authorizations or rights and certifications of pre-existing authorizations or rights.

(a) Leases, permits, licenses, or rights of subsistence use or access in existence on the date of designation of any National Marine Sanctuary shall not be terminated by the Director. The Director may, however, regulate the exercise of such leases, permits, licenses, or rights consistent with the purposes for which the Sanctuary was designated.

(b) The prohibitions listed in Subparts F through P, and Subpart R do not apply to any activity authorized by a valid lease, permit, license, approval or other authorization in existence on the effective date of Sanctuary designation, or in the case of the Florida Keys National Marine Sanctuary the effective date of the regulations in Subpart P, and issued by any Federal, State or local authority of competent jurisdiction, or by any valid right of subsistence use or access in existence on the effective date of Sanctuary designation, or in the case of the Florida Keys National Marine Sanctuary the effective date of the regulations in Subpart P, provided that the holder of such authorization or right complies with certification procedures and criteria promulgated at the time of Sanctuary designation, or in the case of the Florida Keys National Marine Sanctuary the effective date of the regulations in Subpart P, and with any terms and conditions on the exercise of such authorization or right imposed by the

Director as a condition of certification as the Director deems necessary to achieve the purposes for which the Sanctuary was designated.

§ 922.48 National marine sanctuary permits—application procedures and issuance criteria.

(a) A person may conduct an activity prohibited by Subparts F through O, if conducted in accordance with the scope, purpose, terms and conditions of a permit issued under this section and Subparts F through O, as appropriate. For the Florida Keys National Marine Sanctuary, a person may conduct an activity prohibited by Subpart P if conducted in accordance with the scope, purpose, terms and conditions of a permit issued under § 922.166. For the Thunder Bay National Marine Sanctuary, a person may conduct an activity prohibited by Subpart R in accordance with the scope, purpose, terms and conditions of a permit issued under § 922.194.

(b) Applications for permits to conduct activities otherwise prohibited by Subparts F through O should be addressed to the Director and sent to the address specified in Subparts F through O, or Subpart R, as appropriate. An application must include: (1) a detailed description of the proposed activity including a timetable for completion; (2) the equipment, personnel and methodology to be employed; (3) the qualifications and experience of all personnel; (4) the potential effects of the activity, if any, on Sanctuary resources and qualities; and (5) copies of all other required licenses, permits, approvals or other authorizations.

(c) Upon receipt of an application, the Director may request such additional information from the applicant as he or she deems necessary to act on the application and may seek the views of any persons or entity, within or outside the Federal government, and may hold a public hearing, as deemed appropriate.

(d) The Director, at his or her discretion, may issue a permit, subject to such terms and conditions as he or she deems appropriate, to conduct a prohibited activity, in accordance with the criteria found in Subparts F through O, or Subpart R, as appropriate. The Director shall further impose, at a minimum, the conditions set forth in the relevant subpart.

(e) A permit granted pursuant to this section is nontransferable.

(f) The Director may amend, suspend, or revoke a permit issued pursuant to this section for good cause. The Director may deny a permit application pursuant to this section, in whole or in part, if it is determined that the permittee or applicant has acted in violation of the terms and conditions of a permit or of the regulations set forth in this section or Subparts F through O, Subpart R or for other

good cause. Any such action shall be communicated in writing to the permittee or applicant by certified mail and shall set forth the reason(s) for the action taken. Procedures governing permit sanctions and denials for enforcement reasons are set forth in Subpart D of 15 CFR Part 904.

§ 922.49 Notification and review of applications for leases, licenses, permits, approvals or other authorizations to conduct a prohibited activity.

(a) A person may conduct an activity prohibited by Subparts L through P, or Subpart R, if such activity is specifically authorized by any valid Federal, State, or local lease, permit, license, approval, or other authorization issued after the effective date of Sanctuary designation, or in the case of the Florida Keys National Marine Sanctuary after the effective date of the regulations in Subpart P, provided that: 1) the applicant notifies the Director, in writing, of the application for such authorization (and of any application for an amendment, renewal, or extension of such authorization) within fifteen (15) days of the date of filing of the application or the effective date of Sanctuary designation, or in the case of the Florida Keys National Marine Sanctuary the effective date of the regulations in Subpart P, whichever is later; 2) the applicant complies with the other provisions of this § 922.49; 3) the Director notifies the applicant and authorizing agency that he or she does not object to issuance of the authorization (or amendment, renewal, or extension); and 4) the applicant complies with any terms and conditions the Director deems reasonably necessary to protect Sanctuary resources and qualities.

(b) Any potential applicant for an authorization described in paragraph (a) above may request the Director to issue a finding as to whether the activity for which an application is intended to be made is prohibited by Subparts L through P, or Subpart R, as appropriate.

(c) Notification of filings of applications should be sent to the Director, Office of Ocean and Coastal Resource Management at the address specified in Subparts L through P, or Subpart R, as appropriate. A copy of the application must accompany the notification.

(d) The Director may request additional information from the applicant as he or she deems reasonably necessary to determine whether to object to issuance of an authorization described in paragraph (a) above, or what terms and conditions are reasonably necessary to protect Sanctuary resources and qualities. The information requested must be received by the Director within 45 days of the postmark date of the request. The Director may seek the views of any persons on the application.

(e) The Director shall notify, in writing, the agency to which application has been made of his or her pending review of the application and possible objection to issuance. Upon completion of review of the application and information received with respect thereto, the Director shall notify both

the agency and applicant, in writing, whether he or she has an objection to issuance and what terms and conditions he or she deems reasonably necessary to protect Sanctuary resources and qualities, and reasons therefor.

(f) The Director may amend the terms and conditions deemed reasonably necessary to protect Sanctuary resources and qualities whenever additional information becomes available justifying such an amendment.

(g) Any time limit prescribed in or established under this § 922.49 may be extended by the Director for good cause.

(h) The applicant may appeal any objection by, or terms or conditions imposed by, the Director to the Assistant Administrator or designee in accordance with the provisions of § 922.50.

§ 922.50 Appeals of administrative action.

(a)(1) Except for permit actions taken for enforcement reasons (see Subpart D of 15 CFR Part 904 for applicable procedures), an applicant for, or a holder of, a National Marine Sanctuary permit; an applicant for, or a holder of, a Special Use permit issued pursuant to § 310 of the Act; a person requesting certification of an existing lease, permit, license or right of subsistence use or access under § 922.47; or, for those Sanctuaries described in Subparts L through P and Subpart R, an applicant for a lease, permit, license or other authorization issued by any Federal, State, or local authority of competent jurisdiction (hereinafter appellant) may appeal to the Assistant Administrator:

(A) the granting, denial, conditioning, amendment, suspension or revocation by the Director of a National Marine Sanctuary or Special Use permit;

(B) the conditioning, amendment, suspension or revocation of a certification under § 922.47; or

(C) for those Sanctuaries described in Subparts L through P and Subpart R, the objection to issuance of or the imposition of terms and conditions on a lease, permit, license or other authorization issued by any Federal, State, or local authority of competent jurisdiction.

(2) For those National Marine Sanctuaries described in Subparts F through K, any interested person may also appeal the same actions described in § 922.50(a)(1)(A)-(B). For appeals arising from actions taken with respect to these National Marine Sanctuaries, the term "appellant" includes any

such interested persons.

(b) An appeal under paragraph (a) of this section must be in writing, state the action(s) by the Director appealed and the reason(s) for the appeal, and be received within 30 days of receipt of notice of the action by the Director. Appeals should be addressed to the Assistant Administrator for Ocean Services and Coastal Zone Management, NOAA 1305 East-West Highway, 13th Floor, Silver Spring, MD 20910.

(c) The Assistant Administrator may request the appellant to submit such information as the Assistant Administrator deems necessary in order for him or her to decide the appeal. The information requested must be received by the Assistant Administrator within 45 days of the postmark date of the request. The Assistant Administrator may seek the views of any other persons. For the Monitor National Marine Sanctuary, if the appellant has requested a hearing, the Assistant Administrator shall grant an informal hearing. For all other National Marine Sanctuaries, the Assistant Administrator may determine whether to hold an informal hearing on the appeal. If the Assistant Administrator determines that an informal hearing should be held, the Assistant Administrator may designate an officer before whom the hearing shall be held.

The hearing officer shall give notice in the *Federal Register* of the time, place and subject matter of the hearing. The appellant and the Director may appear personally or by counsel at the hearing and submit such material and present such arguments as deemed appropriate by the hearing officer. Within 60 days after the record for the hearing closes, the hearing officer shall recommend a decision in writing to the Assistant Administrator.

(d) The Assistant Administrator shall decide the appeal using the same regulatory criteria as for the initial decision and shall base the appeal decision on the record before the Director and any information submitted regarding the appeal, and, if a hearing has been held, on the record before the hearing officer and the hearing officer's recommended decision. The Assistant Administrator shall notify the appellant of the final decision and the reason(s) therefore in writing. The Assistant Administrator's decision shall constitute final agency action for the purposes of the Administrative Procedure Act.

(e) Any time limit prescribed in or established under this section other than the 30-day limit for filing an appeal may be extended by the Assistant Administrator or hearing officer for good cause.

Attachment 2:**Draft Memorandum of Understanding
For the Coordinated Management of
The Thunder Bay National Marine Sanctuary**

Note: This Memorandum of Understanding is a working draft and is subject to further revision based on review by the State of Michigan and NOAA.

This Memorandum of Understanding (MOU) is made between the State of Michigan and the National Oceanic and Atmospheric Administration (NOAA) of the United States Department of Commerce (hereinafter referred to as "Parties"). The purpose of the MOU is to clarify the relative jurisdiction, authority, and conditions of the NOAA-State partnership for managing the Thunder Bay National Marine Sanctuary. It confirms the State's continuing sovereignty and jurisdiction over its State waters, submerged lands, and other resources within the Sanctuary. The MOU further establishes provisions with respect to NOAA's collaboration with the State of Michigan on Sanctuary management issues.

I. DEFINITIONS

For purposes of this MOU, the following terms are defined as follows:

Governor — means the Governor of the State of Michigan, or his or her designee.

Management Plan — means the final management plan and regulations for the Thunder Bay National Marine Sanctuary.

NOAA — means the National Oceanic and Atmospheric Administration.

State permit — means any lease, permit, license, approval, or other authorization issued by the State of Michigan for the conduct of activities or projects within the Thunder Bay National Marine Sanctuary.

Regulations — mean the final Sanctuary regulations implementing the Management Plan.

Sanctuary — means the Thunder Bay National Marine Sanctuary.

Sanctuary resource — means any underwater cultural resource, as defined in this section.

State — means the State of Michigan.

Underwater cultural resource — means any sunken watercraft, including a ship, boat, canoe, skiff, raft, or barge; the rigging, gear, fittings, trappings, and equipment of any watercraft; the personal property of the officers, crew, and passengers of any sunken watercraft; and the cargo of any sunken watercraft, that existed prior to the effective date of Sanctuary designation. Underwater cultural resource also means any historical remnant of docks or piers or associated material, or materials resulting from activities of historic and prehistoric Native Americans. For any other underwater cultural resource to be considered a Sanctuary resource, it must meet the criteria set forth in 15 CFR § 922.196.

II. AUTHORITIES

A. National Marine Sanctuaries Act (NMSA). The National Marine Sanctuaries Act, as amended (NMSA), 16 U.S.C. §§ 1431 *et seq.*, authorizes the designation, protection and management of discrete marine (or Great Lakes) areas of special national significance as National Marine Sanctuaries, based upon their “conservation, recreational, ecological, historical, research, educational, or aesthetic qualities.”

B. Part 761, Aboriginal Records and Antiquities, Public Act 451 of 1994, as amended. Part 761, Aboriginal Records and Antiquities, (Section 76101(e)) of the Michigan Compiled Laws (Section 1, Act No. 451 of the Public Acts of 1994), authorizes the establishment of State Bottomland Preserves to preserve and protect Michigan’s Great Lakes bottomland areas that contain property of historical or recreational value. Preserves are managed by the Michigan Department of Environmental Quality and Michigan Department of State (Michigan Historical Center). The statute also authorizes the State to issue permits to recover abandoned property from Great Lakes bottomlands.

C. Part 325, Great Lakes Submerged Lands, Public Act 451 of 1994, MCL 324.3250 *et seq.*, as amended. The Act authorizes the State to “grant, convey or lease certain unpatented lake bottomlands...in the Great Lakes...; to permit the private and public use of waters over submerged patented lands; to provide for disposition of revenue derived therefrom; and to provide penalties for violations of this act.” The Act also authorizes the State to regulate dredging, filling and placement of other materials on Great Lakes bottomlands. Responsibility for implementation of this statute rests with the Michigan Department of Environmental Quality.

III. RECITALS

Whereas, Michigan is bordered by four Great Lakes, including Lake Huron;

Whereas, the waters of Thunder Bay and surrounding area in Lake Huron contain one of the most concentrated areas of shipwrecks in the Great Lakes;

Whereas, these shipwrecks possess extensive historical, cultural, recreational, educational and research values of importance to the nation, the State of Michigan, and the residents of Alcona, Alpena and Presque Isle Counties;

Whereas, the State has designated the 288 square-mile Thunder Bay Bottomland Preserve to protect and manage the shipwrecks;

Whereas, the Sanctuary covers 808 square miles of State waters and wholly incorporates the Thunder Bay Bottomland Preserve;

Whereas, the purposes of the Sanctuary's Designation Document, implementing regulations, and Management Plan are to: (1) protect the underwater cultural resources of Thunder Bay and surrounding waters located within the boundaries of the Sanctuary; (2) educate and interpret for the public the maritime heritage of the Great Lakes; (3) conduct research on underwater cultural resources (e.g., inventory and document the shipwrecks); and (4) ensure coordination and cooperation between the Sanctuary and other relevant State, Federal and local authorities;

Whereas, the purpose of this MOU is to provide the mechanism for coordination of the efforts of NOAA and the State of Michigan to meet their common commitment to protect and manage the underwater cultural resources of the Thunder Bay National Marine Sanctuary, as defined in the Sanctuary's Management Plan;

Whereas, the Management Plan and MOU were developed with substantial input from a variety of federal, state and local agencies and institutions, the Sanctuary Advisory Council, and the public;

IV. NOW, THEREFORE, BE IT RESOLVED BY THE UNDERSIGNED THAT:

- A. The Parties recognize the Federal-State cooperative arrangement for management of the Sanctuary and its underwater cultural resources and that no Federal, State, or local title or authority to manage and regulate submerged lands, resources, or activities has been limited, conveyed or relinquished through this MOU.
- B. The State of Michigan has not conveyed title to or relinquished its sovereign authority over any State-owned submerged lands or other State-owned resources, by agreeing to include those submerged lands and resources within the Sanctuary boundary.
- C. NOAA and the State will co-manage the Sanctuary and its underwater cultural resources consistent with the National Marine Sanctuaries Act, the Management Plan, and Memoranda of Understanding developed thereunder.
- D. No State or local funding is required to implement the Management Plan, its implementing regulations, or any provisions of this MOU.
- E. The Sanctuary's Management Plan, Designation Document and its implementing regulations do not regulate commercial fishing, recreational fishing, and hunting within the boundaries of the Sanctuary.
- F. The Sanctuary will not interfere with or impair fishery management practices, such as stocking programs and fisheries research.
- G. NOAA does not have the authority to, and therefore cannot, acquire land to regulate activities landward of the ordinary high water mark (e.g., limiting public access from the shore to Lake Huron). NOAA does have the authority to co-manage activities lakeward of the ordinary high water mark pursuant to the Sanctuary regulations.
- H. NOAA and the State of Michigan agree that any person will be able to freely dive to or on, photograph, or otherwise enjoy shipwrecks, provided that the use or activity does not involve a prohibited activity under the Sanctuary regulations.
- I. NOAA does not have the authority to, and therefore cannot, charge user fees in the Sanctuary. Even if Congress passes legislation that provides NOAA with this authority, no user fee could be assessed without concurrence from the Governor.

- J. Any proposed change to the Management Plan or Sanctuary regulations shall be reviewed in consultation with the State. Substantive amendments (as opposed to minor editorial and technical changes or corrections) shall not take effect in State waters without first obtaining the approval of the Governor.
- K. The Governor reserves the right to propose changes to the Management Plan and, if appropriate, NOAA shall initiate the Federal rule promulgation process required to make revisions requested by the Governor to the regulations implementing the management plan. In accordance with the Administrative Procedure Act, NOAA will base its decision on whether and how to revise any regulation on the administrative record developed during the rulemaking process.
- L. The imposition, extension, or renewal of Sanctuary emergency regulations in State waters shall not be authorized without concurrence from the Governor.
- M. Civil penalties recovered under section 307 of the National Marine Sanctuaries Act shall be used by NOAA consistent with the requirements and priorities of the Management Plan. Amounts recovered under section 307 with respect to incidents within areas subject to State jurisdiction shall be used in consultation and agreement with the State consistent with the Plan. Similarly, to the maximum extent consistent with section 312(d) of the NMSA, any monetary recovery that may result from any civil action shall be used for the exclusive benefit of the Sanctuary.
- N. Section 304(e) of the National Marine Sanctuaries Act requires the Secretary of Commerce to review the Sanctuary's Management Plan and implementing regulations every five years and revise the management plan as necessary. In the first five-year review, the Secretary of Commerce will re-propose the designation of the Sanctuary, management plan, and the regulations in their entirety. The Governor will have the opportunity to review the designation, Management Plan, and regulations and indicate if the designation or any terms of the Management Plan or regulations are unacceptable, in which case unacceptable terms shall not take effect in State waters. If the Governor takes no action to terminate the designation of the Sanctuary during the first five-year review, the Sanctuary will remain designated. In subsequent reviews, NOAA will not re-propose the designation of the Sanctuary, but the Governor reserves the right to propose changes to the Management Plan and regulations per "IV.K" of this memorandum.
- O. Local interests shall be represented by a Sanctuary Advisory Council comprised of 15 local members whose names are mutually agreed upon by NOAA and the State of Michigan.

V. ENFORCEMENT

Enforcement of Sanctuary regulations within the Sanctuary boundary may be implemented via deputization of other law enforcement personnel, e.g., State of Michigan enforcement personnel, local county sheriffs, as the need is identified, and by separate agreement. Existing State criminal and civil penalties will continue in force. Enforcement personnel shall be authorized to carry out enforcement provisions of 15 CFR Part 922, Subpart E (National Marine Sanctuary Program Regulations) and Subpart R (Thunder Bay National Marine Sanctuary Regulations). Violation of a Sanctuary regulation shall be subject to civil penalties available in the NMSA (see Section 307(c)), and if applicable, under state law.

VI. CONSULTATION AND CONFLICT RESOLUTION

In the event of disagreement between the Thunder Bay NMS and State of Michigan regarding the conduct of proposed activities or projects which may affect the underwater cultural resources within the Sanctuary, all reasonable attempts shall be made to resolve the disagreement and/or provide conditions to the proposed permit to mitigate any potential adverse impact on underwater cultural resources. The Thunder Bay NMS and the State may consult with the Sanctuary Advisory Council to obtain local input. In the event of inability of the parties to reach resolution, the proposal shall be elevated to the Department of Environmental Quality, the Department of State (Michigan Historical Center), the Department of Natural Resources, and to the National Ocean Service for final resolution. In the event of disagreement among those parties, the proposal shall be elevated to the Administrator of NOAA, and to the Governor of Michigan, whose collective decision shall be final.

VII. RESERVATION OF RIGHTS

The Parties each retain full authority and reserve all rights to take whatever actions deemed necessary to pursue, preserve, and protect any legal right, interest, or remedy. Nothing in this MOU is intended nor shall be construed to waive or foreclose any such authority, right, interest, or remedy.

VIII. MODIFICATION PROVISIONS

In addition to review of this agreement at the conclusion of five (5) years, this agreement also may be amended at any time by the written mutual consent of the parties hereto signed. It may be subject to reconsideration at such other times as may be required, and as agreed to by the parties entering into this agreement.

IX. PERIOD

This MOU will become effective on the date of the last signature of the approving official of either of the Parties and shall continue in force unless terminated in conjunction with the five-year review of the Sanctuary Management Plan.

X. SAVINGS CLAUSE

- A. Nothing herein is intended to conflict with current State or Federal laws, policies, regulations, or directives. If any of the terms of this MOU are inconsistent with existing Federal or State laws, policies, regulations, or directives, then those portions of this MOU which are determined to be inconsistent shall be invalid. The remaining terms of this MOU not affected by the inconsistency shall remain in full force and effect.

- B. At the first opportunity for review of the MOU, all necessary changes will be accomplished by either an amendment to this MOU or by entering into a new MOU or other agreement.

- C. Should disagreement arise on the interpretation or implementation of the provisions of this MOU or amendments and/or revisions thereto that cannot be resolved at the program operations level, the matter shall be forwarded to higher authority for resolution.

- D. All requirements of this MOU are subject to the availability of NOAA funds.

XI. SIGNATURES

Governor of Michigan
Administrator of NOAA

Attachment 3:**Draft Programmatic Agreement Among
The National Oceanic and Atmospheric Administration, The State of Michigan, and
The Advisory Council on Historic Preservation, for Management of the
Thunder Bay National Marine Sanctuary**

Note: This Programmatic Agreement is a working draft and is subject to further revision based on review by the State of Michigan, NOAA, and the Advisory Council on Historic Preservation

This Programmatic Agreement (PA) is made between the State of Michigan, the National Oceanic and Atmospheric Administration (NOAA), and the federal Advisory Council on Historic Preservation (hereinafter referred to as "Parties"). The purposes of the Programmatic Agreement are to (1) describe the roles and responsibilities of the Parties in the permit review process, and (2) list priority projects for the first five years of Sanctuary operation.

I. DEFINITIONS

Federal Archaeological Program – means the collection of federal laws, regulations and guidelines that pertain to the management and protection of historic properties that are either on federal lands or are affected by federally funded activities. Congress directed that the Federal Archaeological Program be coordinated by the National Park Service.

Governor – means the Governor of Michigan, or designee.

Management Plan – means the final management plan and regulations for the Thunder Bay National Marine Sanctuary.

NOAA – means the National Oceanic and Atmospheric Administration.

State permit – means any lease, permit, license, approval, or other authorization issued by the State of Michigan for the conduct of activities or projects within the Thunder Bay National Marine Sanctuary.

Regulations – mean the final Sanctuary regulations implementing the Management Plan.

Sanctuary – means the Thunder Bay National Marine Sanctuary.

Sanctuary resource – means any underwater cultural resource, as defined herein, which occurs within the Sanctuary.

State – means the State of Michigan.

State Historic Preservation Officer – means a position created by the National Historic Preservation Act. The SHPO administers the state’s historic preservation program in accordance with the Act.

Underwater cultural resource – means any sunken watercraft, including a ship, boat, canoe, skiff, raft, or barge; the rigging, gear, fittings, trappings, and equipment of any watercraft; the personal property of the officers, crew, and passengers of any sunken watercraft; and the cargo of any sunken watercraft, that existed prior to the effective date of Sanctuary designation. Underwater cultural resource also means any historical remnant of docks or piers or associated material, or materials resulting from activities of historic and prehistoric Native Americans. For any other underwater cultural resource to be considered a Sanctuary resource, it must meet the criteria set forth in 15 CFR § 922.196.

II. RECITALS

Whereas, the waters of Thunder Bay and surrounding area in Lake Huron contain one of the most concentrated areas of shipwrecks in the Great Lakes;

Whereas, these shipwrecks possess extensive historical, cultural, recreational, educational and research values of importance to the nation, State of Michigan and residents of Alcona, Alpena and Presque Isle Counties;

Whereas, the Thunder Bay National Marine Sanctuary is designated to protect and manage underwater cultural resources within Sanctuary boundaries;

Whereas, the purpose of this Programmatic Agreement is to provide the mechanism for coordination of the efforts of NOAA, the State of Michigan, and the Advisory Council on Historic Preservation to meet their common commitment to protect and manage the underwater cultural resources of the Thunder Bay National Marine Sanctuary, as defined in the Management Plan.

Whereas, the Management Plan and Programmatic Agreement were developed with substantial input from a variety of governmental agencies, the Sanctuary Advisory Council, and the public;

III. NOW, THEREFORE, BE IT RESOLVED BY THE UNDERSIGNED THAT:

1. Consistent with the policies of the State of Michigan, the National Marine Sanctuary Program and the Federal Archaeological Program, the parties to this Programmatic Agreement prefer that underwater cultural resources are preserved in-situ. Because underwater cultural resources are irreplaceable non-renewable resources, they should remain in the sanctuary for research,

education and the viewing enjoyment of the public for present and future generations, unless and until there is a substantial public interest justification for their removal.

2. The Parties agree that in order to protect underwater cultural resources, the Sanctuary regulations prohibit the unauthorized recovery, alteration, destruction, or possession of underwater cultural resources; the unauthorized alteration of the lakebed; and the use of grappling hooks or other anchoring devices on shipwrecks that have a mooring buoy (see 15 CFR § 922.192).
3. Permits that strictly adhere to Sanctuary regulations and this Programmatic Agreement are deemed to be in compliance with Sections 106 and 110 of the National Historic Preservation Act, and do not require approval of the Advisory Council on Historic Preservation. Permits that are outside of the scope of this Programmatic Agreement, in whole or in part, are subject to Section 106 review.
4. NOAA and the State of Michigan agree that all plans to preserve underwater cultural resources will be jointly developed and submitted to the State Historic Preservation Officer (SHPO) for review. Unless the SHPO objects within 30 days after receipt of the plan, the agencies will ensure that the plan is implemented.
5. NOAA shall ensure that archaeological surveys done for compliance purposes under Sections 106 or 110 are conducted in a manner consistent with the Management Plan and the Secretary of Interior's Standards for Identification (48 FR 44720-23). The surveys shall be done in consultation with the State of Michigan, and a report of the surveys, meeting professional and SHPO standards, shall be submitted to the SHPO for review and approval.
6. NOAA shall ensure that all final reports resulting from activities pursuant to this Agreement will be provided to the State of Michigan and the Council, and other interested parties. NOAA will ensure that all such reports are responsive to contemporary professional standards.
7. NOAA shall ensure that all artifacts are conserved, curated and otherwise managed according to the provisions of the Management Plan and federal archaeological program guidelines.

IV. PERMIT REVIEW RESPONSIBILITIES OF THE PARTIES

1. The Parties agree that the State of Michigan, Department of Environmental Quality, will be the point of contact for all permit applications, regardless of whether the State of Michigan or NOAA issues the permit.
2. The State of Michigan will continue to implement state law within the Thunder Bay Underwater Preserve, even though the preserve is within the boundary of the Sanctuary. Persons who wish to

apply for a permit under Part 761, Aboriginal Records and Antiquities, of Public Act 451 (1994), as amended, will follow the same procedures that existed prior to Sanctuary designation.

3. NOAA will not require separate Sanctuary permits for activities within the Sanctuary that are covered and permitted by the State of Michigan if the proposed activity is consistent with the Sanctuary regulations.
4. If a proposed activity does not fall under state jurisdiction, but requires a permit from a federal agency other than NOAA, NOAA will address Sanctuary concerns through the “authorization” of that federal permit. This will be met through consultation procedures at 15 CFR § 922.49.
5. For activities where no state or federal permit exists for Sanctuary concerns to be addressed (e.g., hand-taking activities proposed to occur outside the boundary of the Thunder Bay Underwater Preserve, but inside the boundary of the Sanctuary), NOAA will review the application and decide whether to issue a Sanctuary permit. Under this scenario, applications shall be submitted to the State and considered by NOAA in accordance with 15 CFR § 922.48 (c) through (f). Copies of applications received by the State shall be forwarded to NOAA for action. The State of Michigan will have the opportunity to review the permit application and provide comments to NOAA.

V. GOALS AND PRIORITY PROJECTS FOR THE MANAGEMENT PLAN

This part of the Programmatic Agreement is comprised of three sections that are consistent with the Management Plan for the Thunder Bay National Marine Sanctuary: (1) resource protection, (2) education, and (3) research. The purpose is to describe priority projects for the first five years of Sanctuary operation.

CULTURAL RESOURCE PROTECTION AND MANAGEMENT

NOAA, the State of Michigan, and the Advisory Council on Historic Preservation agree that in order to comprehensively manage and protect the underwater cultural resources in the Thunder Bay NMS, a Resource Protection Plan will be developed to manage and protect the Sanctuary’s underwater cultural resources.

A Resource Protection Plan will be developed cooperatively by NOAA and the State, the Sanctuary Advisory Council and appropriate local and regional institutions and organizations. Priorities for resource protection and the strategies for implementing these activities will be included in the Plan.

A. Goals for Cultural Resource Protection and Management

1. Coordinate management activities with other governmental and non-governmental programs that protect underwater cultural resources;
2. Establish innovative partnerships with local, state, federal and tribal agencies, organizations, and businesses that support the resource protection mission of the Sanctuary;
3. Develop active and sustainable community involvement through diverse volunteer and private sector initiatives;
4. Establish an effective enforcement program for Sanctuary regulations that protect underwater cultural resources;
5. Develop and implement effective emergency response and resource damage assessment programs; and
6. Ensure that management decisions are based on the best available information, but where such information is incomplete, follow those options that best protect Sanctuary underwater cultural resources.

B. Priority Cultural Resource Protection and Management Activities

1. Develop and maintain a mooring buoy system.
2. Facilitate coordination among management agencies having responsibilities for the Thunder Bay maritime cultural landscape.
3. Support a scientific research and monitoring program focusing on underwater cultural resources. Initial research activities would provide baseline inventory information on which to base management decisions.
4. Cross-deputize and support law enforcement personnel (e.g., County Sheriff Marine Patrol Officers, Michigan DNR Conservation Officers, Michigan State Police, and U.S. Coast Guard Officers) to enforce Sanctuary regulations.

EDUCATION

NOAA and the State of Michigan agree that in order to comprehensively manage and protect the

underwater cultural resources in the Thunder Bay NMS, an Education Plan will be developed to facilitate the understanding of these resources, their significance in Great Lakes maritime history, and the importance of their protection.

An Education Plan and education themes will be developed cooperatively by NOAA, the State, the Sanctuary Advisory Council, and appropriate local and regional institutions and organizations. Priorities for Sanctuary education and the strategies for implementing these activities will be included in the Plan.

A. Goals for Education

1. Develop and implement education programs that promote awareness and understanding of the Sanctuary underwater cultural resources, Thunder Bay maritime heritage, and the National Marine Sanctuary Program;
2. Provide leadership to develop and implement collaborative education programs that meet the needs and interests of residents, local and regional schools, and visitors to the area;
3. Act as a clearinghouse of quality education materials, and assist in developing and maintaining an inventory of existing education programs so they are accessible to educators;
4. Encourage the involvement of volunteers to foster understanding of and participation in the protection of Sanctuary resources;
5. Ensure that education programs support overall management goals for resource protection, research, and administration; and
6. Facilitate the transfer of Sanctuary information and experiences for use locally, regionally, nationally and globally.

B. Priority Education Activities

The priority education activities listed below are identified in the Management Plan for the Thunder Bay NMS. As the Education Plan is developed and as the management and operation of the Thunder Bay NMS evolves, other projects identified by NOAA, the State, the SAC, and the community may be added to the list. The activities are not necessarily listed in order of priority.

1. Develop the concept for and secure funding for the establishment of a Maritime Heritage Center. Such a facility will provide education and research opportunities for both residents and tourists.

2. Acquire a Sanctuary education/research vessel. This will facilitate access to Sanctuary resources by allowing on-the-water education and research activities.
3. Establish remote video hook-ups of researchers documenting the shipwrecks. This technology would provide visual access to shipwrecks for non-divers.
4. Select and interpret a series of shipwrecks as a "shipwreck trail" to highlight Thunder Bay's maritime heritage. Interpretive materials will be developed for both divers and non-divers.
5. Designate an annual week-long celebration that highlights special events for school children to kindle an interest in Great Lakes maritime heritage.
6. Produce a historical guide to maritime resources in the Thunder Bay NMS. The guide will interpret the maritime history of the Thunder Bay area, and involve local communities in discovering and documenting their maritime heritage.
7. Identify and support a network of volunteers to help enhance and maintain maritime heritage education activities and projects.
8. Encourage and develop the use of educational technologies in supporting maritime heritage education.
9. Develop public outreach activities to promote the Sanctuary locally, regionally and nationally.
10. Support, complement and enhance existing maritime heritage education efforts, and develop and maintain new education initiatives as appropriate.

RESEARCH

NOAA and the State of Michigan agree that in order to comprehensively manage and protect the underwater cultural resources in the Thunder Bay NMS, a Research Plan will be developed to acquire knowledge about these resources. The knowledge gained through research and monitoring will be used to evaluate existing management practices, enhance future management decisions, and educate the public.

The Research Plan will be developed cooperatively by NOAA, the State, the Sanctuary Advisory Council, and appropriate local and regional institutions and organizations. Priorities for Sanctuary research and monitoring and strategies for implementing these priorities will be included in the Plan.

A. Goals for Research

1. Inventory and assess Sanctuary resources, and existing and potential threats to those resources;
2. Monitor Sanctuary resources to ensure their long-term protection and to evaluate management practices;
3. Develop a research plan that places the highest priority upon research that addresses threats to Sanctuary resources;
4. Develop and encourage collaborative programs with other agencies, organizations, and businesses;
5. Identify and evaluate the monetary and intrinsic values associated with Sanctuary resources; and
6. Encourage research targeted at management issues such as resolving multiple-use conflicts, and understanding user impacts.

B. Priority Research Projects

The priority research projects listed below are identified in the Management Plan for the Thunder Bay NMS. As the Research Plan is developed and as the management and operation of the Thunder Bay NMS evolves, other projects will be identified by NOAA, the State, the SAC, and the community and added to the list. The projects are not necessarily listed in order of priority.

1. Locate, inventory and document the shipwrecks. This information will be used to nominate the collection of shipwrecks as a National Historic Landmark.
2. Establish a monitoring program for the shipwrecks. The first step is to document baseline conditions.
3. Obtain additional information from archives, site maps, photographs, and other historical sources to supplement the shipwreck inventory.
4. Maintain in one place all information relating to each vessel including field notes, historical information, photographs, videotapes, site maps, drawings, inventory forms, and reports. All such documentation shall be available to the public for interpretive and educational purposes.
5. Monitor the impact of zebra mussels on shipwrecks.

VI. OTHER PROVISIONS

1. Any party to this Agreement who determines that some portion of the Agreement cannot be met must immediately request the other signatories to consider an amendment or addendum to this Agreement that would ensure full compliance. Such an amendment or addendum shall be executed in the same manner as the original Agreement. Should any party to this Agreement be unable to maintain a level of effort sufficient to carry out the terms of this Agreement, that party shall notify the others and seek an appropriate amendment.
2. Any party to this Programmatic Agreement may terminate it by providing thirty (30) days notice to the other parties, provided that the parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination. In the event of termination, NOAA will comply with 36 CFR Parts 800.4 through 800.6 with regard to all individual undertakings for the Thunder Bay National Marine Sanctuary.
3. Execution and implementation of this Programmatic Agreement evidences that the National Oceanic and Atmospheric Administration has satisfied its responsibilities under Sections 106 and 110 of the National Historic Preservation Act for the management of the Thunder Bay National Marine Sanctuary.

VII. CONSULTATION AND CONFLICT RESOLUTION

In the event of disagreement between NOAA and State of Michigan regarding the conduct of proposed activities or projects which may affect the underwater cultural resources within the Sanctuary, all reasonable attempts shall be made to resolve the disagreement and/or provide conditions to the proposed permit to mitigate any potential adverse impact on underwater cultural resources. NOAA and the State may consult with the Sanctuary Advisory Council to obtain local input. In the event of inability of the parties to reach resolution, the proposal shall be elevated to the Department of Environmental Quality, the Department of State (Michigan Historical Center), and/or the Department of Natural Resources, and to the National Ocean Service for final resolution. In the event of disagreement among those parties, the proposal shall be elevated to the Administrator of NOAA, and to the Governor of Michigan, whose collective decision shall be final.

VIII. RESERVATION OF RIGHTS

The Parties each retain full authority and reserve all rights to take whatever actions deemed necessary to pursue, preserve, and protect any legal right, interest, or remedy. Nothing in this Programmatic Agreement is intended nor shall be construed to waive or foreclose any such authority, right, interest, or remedy.

IX. MODIFICATION PROVISIONS

In addition to review of this agreement at the conclusion of five (5) years, this agreement also may be amended at any time by the written mutual consent of the parties hereto signed. It may be subject to reconsideration at such other times as may be required, and as agreed to by the parties entering into this agreement.

X. PERIOD

This Programmatic Agreement will become effective on the date of the last signature of the approving official of either of the Parties and shall continue in force unless and until terminated in conjunction with the five-year review of the Sanctuary Management Plan.

XI. SAVINGS CLAUSE

- A. Nothing herein is intended to conflict with current State or Federal laws, policies, regulations, or directives. If any of the terms of this Programmatic Agreement are inconsistent with existing Federal or State laws, policies, regulations, or directives, then those portions of this Programmatic Agreement which are determined to be inconsistent shall be invalid. The remaining terms of this Programmatic Agreement not affected by the inconsistency shall remain in full force and effect.
- B. At the first opportunity for review of the Programmatic Agreement, all necessary changes will be accomplished by either an amendment to this Programmatic Agreement or by entering into a new Programmatic Agreement or other agreement.
- C. Should disagreement arise on the interpretation or implementation of the provisions of this Programmatic Agreement or amendments and/or revisions thereto that cannot be resolved at the program operations level, the matter shall be forwarded to higher authority for resolution.
- D. All requirements of this Programmatic Agreement are subject to the availability of NOAA funds.

XII. SIGNATORIES

Secretary of State
Director, Department of Environmental Quality
Director, Department of Natural Resources
Executive Director, Advisory Council on Historic Preservation
Assistant Administrator, National Ocean Service, NOAA

Section 4

The Sanctuary Setting



SECTION 4

THE SANCTUARY SETTING

- Approximately 160 *shipwrecks* and hundreds of other *underwater cultural resources* are known, probable, or suspected to exist within the boundaries of the Thunder Bay National Marine Sanctuary.
- Many of these sites are located within the *Thunder Bay Underwater Preserve*, established by the State of Michigan in 1981.
- The entire collection of Thunder Bay region shipwrecks is highly representative of Great Lakes shipping for the period of 1840 – 1970. This collection of shipwrecks, as well as at least eight individual vessels, is believed to have *national historic significance*.
- The underwater cultural resources are part of a *maritime cultural landscape* that includes lighthouses, historic wharfs and docks, submerged prehistoric sites, present-day maritime activities and folklife, coastal communities, aquatic life, and natural scenery.
- There are many stakeholders of the shipwrecks and maritime cultural landscape of the Thunder Bay region, including local residents and tourists.

A. INTRODUCTION

Much of the information described in this section has been excerpted and summarized from the *Thunder Bay Region Inventory of Resources*, completed by Michigan Sea Grant Extension in 1993. The Inventory is based on a thorough review of literature and comprises the best available information on the underwater cultural resources, past and present human activities, and environmental characteristics of the Thunder Bay region. The Inventory identifies many limitations in information about these maritime resources and activities.

Additional research was conducted by Great Lakes Visual/Research, Inc. in 1996 to evaluate the national historic significance of Thunder Bay shipwrecks. This recent work has been summarized in Part E of this section.

The reader is encouraged to learn more about the Sanctuary setting by reading the *Thunder Bay Region Inventory of Resources* (Vrana 1993) and the *Preliminary Comparative and Theme Study of National Historic Landmark Potential for Thunder Bay, Michigan* (Martin 1996).

B. STUDY AREA

The Thunder Bay region as discussed in the Final Environmental Impact Statement/Management Plan (FEIS/MP) extends from Presque Isle

Harbor to Sturgeon Point and eastward into Lake Huron to longitude 83 degrees west. It includes Lake Huron waters east of Alpena County, and portions of Alcona County and Presque Isle County (Figures 4.1 – 4.3).

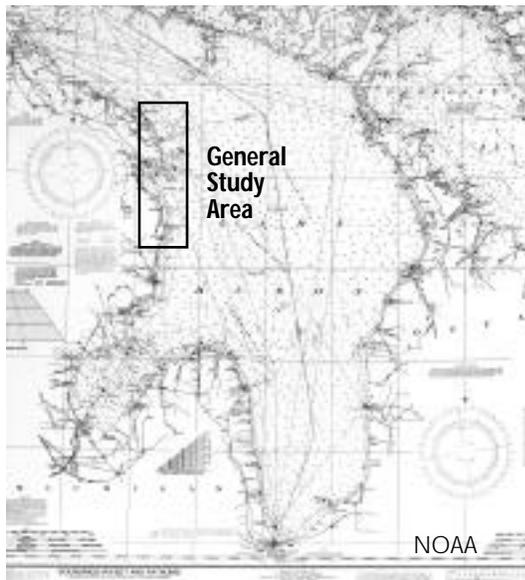


Figure 4.1 Identification of general study area.

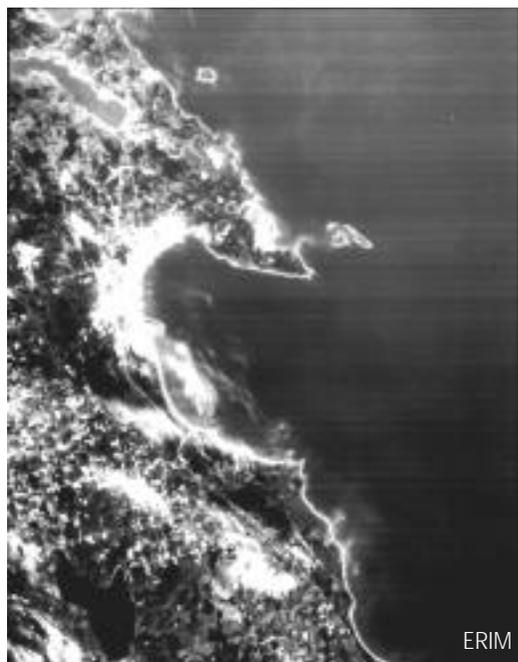


Figure 4.2 Satellite photograph of Thunder Bay region.

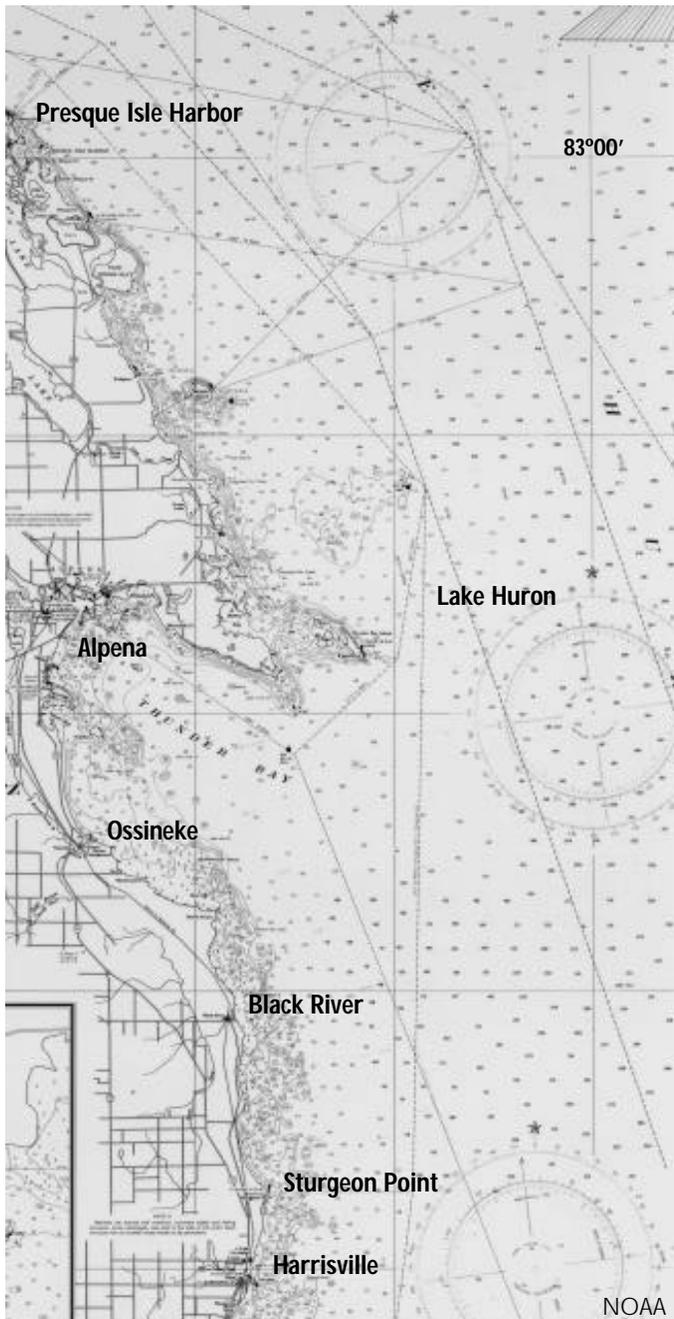


Figure 4.3 General study area.

C. SHIPWRECK LAW AND MANAGEMENT IN THE GREAT LAKES REGION

The Great Lakes comprise the largest system of fresh surface water on earth (U.S. EPA and Environment Canada 1988). Eight states and the Province of Ontario own nearly all of the approximately 94,000 square miles of Great Lakes surface waters and underlying submerged lands or bottomlands. The State of Michigan and the Province of Ontario own about 75% of the total submerged lands area (U.S. Bureau of Census 1993).

The federal *Abandoned Shipwreck Act (ASA)* of 1987 (43 U.S.C. 2101 et seq.) affirms state ownership and management authority for abandoned shipwrecks that meet at least one of the following criteria: (1) embedded in submerged lands of a state, (2) embedded in coral-line formations protected by a state on submerged lands of a state, or (3) on submerged lands of a state and included in, or determined eligible for, inclusion in the National Register of Historic Places (maintained by the National Park Service). Guidelines for the ASA were published in the Federal Register on December 4, 1990 (55 Federal Register 50116-50145). The guidelines are voluntary and *not* binding on any state.

The states of Indiana, Michigan, Ohio, and Wisconsin have laws that are specific to shipwrecks and other underwater cultural resources on state bottomlands. All Great Lakes states and the Province of Ontario have general law relating

to historic preservation or archaeology that may be applied to underwater cultural resources (Vrana and Mahoney 1993).

Part 761, Aboriginal Records and Antiquities of Public Act 451 (1994), as amended, was enacted “to protect and preserve, and to regulate the taking of, aboriginal records and antiquities within the state; to preserve abandoned property of historical or recreational value [on Great Lakes bottomlands]; to designate and regulate Great Lakes bottomland preserves; to prescribe the powers and duties of certain state agencies; to create a fund; and to prescribe penalties and provide remedies.” Part 761 was formerly the *Aboriginal Records and Antiquities Act* (Public Act 173 of 1929, as amended by Public Act 184 of 1980, and Public Act 452 of 1988).

Key components of Part 761 include the following:

- permit required to remove or disturb underwater cultural resources;
- permit required to explore or excavate aboriginal remains;
- state retains exclusive right and privilege of field archaeology;
- exemption from public disclosure of site information;
- penalty for permit violations;
- state reserves title to all archaeological objects and data;
- penalty for unauthorized removal or intentional destruction of archaeological materials;
- requirement to report and penalty for disturbance of human remains;

- state can seek civil action for damages (including forfeiture of equipment used in the violation);
- removal of artifacts allowed without permit under certain conditions;
- recognizes the right of people to own abandoned property under certain conditions;
- provision for intentionally sinking vessels in bottomland preserves;
- recognizes the right to engage in recreational diving;
- public accepts dangers in scuba diving on underwater cultural resources; and
- establishes the state underwater salvage and preserve advisory committee.

State appropriations were *not* provided for implementation of Part 761. Currently, there are *no* administrative rules for state bottomland preserves (underwater preserves). The state *Underwater Salvage and Preserve Committee* is composed of appointees from the Michigan Department of Environmental Quality (DEQ), Michigan Department of Natural Resources (DNR), Michigan Department of State (DOS), and public members appointed by the Governor.

The DEQ, DOS, and DNR are involved in the State's management and protection of underwater cultural resources. The DEQ and DOS jointly administer Part 761, Aboriginal Records and Antiquities of Public Act 451 (1994), as amended. The DEQ is authorized to issue permits for certain construction and other activities impacting Great Lakes bottomlands (Part 325, Great Lakes Submerged Lands of Public Act 451 (1994), as amended).

Leadership in service and program development for state underwater preserves has been taken on primarily by local advocacy groups (commonly known as preserve committees), businesses, and the Michigan Underwater Preserve Council. The Council is a private, nonprofit organization that represents the interests of preserve committees and stakeholders throughout Michigan. Nine state underwater preserves are currently designated in the Michigan Great Lakes (Figure 4.4). In addition to the state underwater preserves, Isle Royale National Park protects shipwrecks under federal law.

There are 16 management areas within the Great Lakes that were created specifically for the preservation and/or protection of shipwrecks and other underwater cultural resources, or explicitly include shipwrecks within their management plans (Vrana and Mahoney 1993). Seven additional shipwreck management areas are proposed in the Great Lakes (Table 4.1 and Figure 4.5). Six shipwreck management areas have been established in Lake Huron.

State programs involving shipwreck management are generally administered by state historic preservation offices, state archaeology offices, and departments of natural resources or equivalents. Many state agencies and local organizations are assisted by university programs (including NOAA Sea Grant) with interests in underwater preserves and maritime archaeology.

The DNR Law Enforcement Division is charged with protecting Michigan's natural resources and

the environment, and the health and safety of the public through effective law enforcement and education. With regard to protection of shipwrecks, the Law Enforcement Division patrols and enforces areas of the Great Lakes where protected shipwrecks and related artifacts are at risk from illegal exploitation.

The State of Wisconsin and the Province of Ontario are the only states to have established formal programs in maritime archaeology. These state/provincial programs are assisted by the following avocational organizations in underwater archaeology: Wisconsin Underwater Archaeology Association, Save Ontario Shipwrecks, and Preserve Our Wrecks (Ontario).

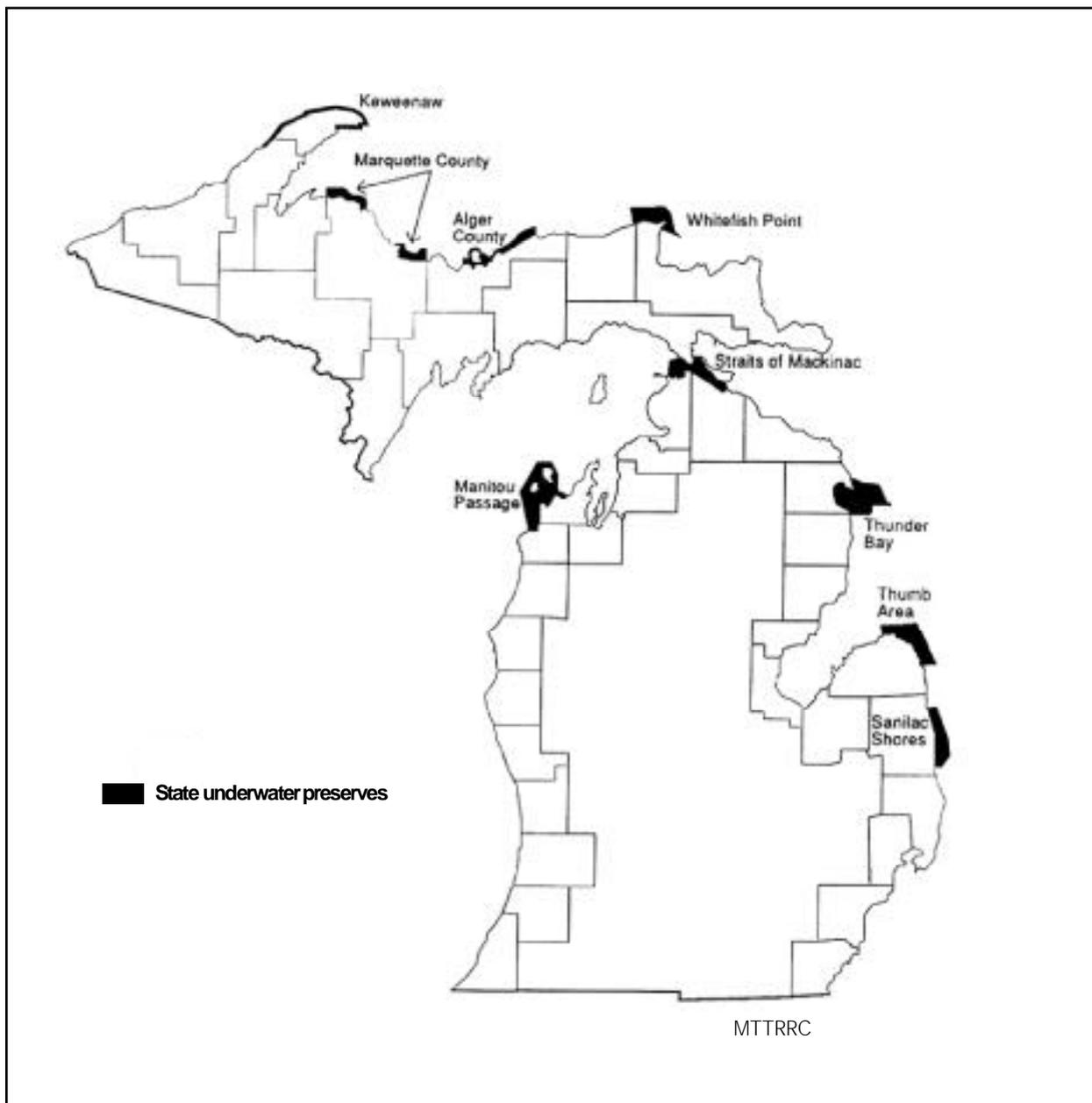


Figure 4.4 State of Michigan underwater preserves.

Table 4.1 Great Lakes shipwreck management areas (established and proposed) (adapted from Vrana and Manhoney 1993).

Location	Name of Area	Administration	Lake	Size (square mi)
Michigan	Alger County Underwater Preserve	State/Local	Superior	113
	<i>Detour Passage Underwater Preserve</i>	State/Local	Huron	<i>proposed</i>
	Isle Royale National Park	U.S.	Superior	684
	Keweenaw Underwater Preserve	State/Local	Superior	103
	Manitou Passage Underwater Preserve	State/Local	Michigan	282
	Marquette County Underwater Preserve	State/Local	Superior	144
	Pictured Rocks National Lakeshore*	U.S.	Superior	16
	Sanilac Shores Underwater Preserve	State/Local	Huron	163
	Sleeping Bear Dunes National Lakeshore*	U.S.	Michigan	20
	<i>Southwest Michigan Underwater Preserve</i>	State/Local	Michigan	<i>proposed</i>
	Straits of Mackinac Underwater Preserve	State/Local	Michigan/Huron	148
	Thumb Area Underwater Preserve	State/Local	Huron	276
	Thunder Bay Underwater Preserve	State/Local	Huron	288
	Whitefish Point Underwater Preserve	State/Local	Superior	376
Ontario	Fathom Five National Marine Park	Canada	Huron	52
	<i>National Marine Park</i>	Canada	Superior	N/A
	Pukaskwa National Park	Canada	Superior	31
	<i>Leamington Marine Heritage Area</i>	Ontario/Local	Erie	<i>proposed</i>
Ohio	<i>Bass Islands Submerged Lands Preserve</i>	State/Local	Erie	<i>proposed</i>
	<i>Cleveland–Lorain Submerged Lands Preserve</i>	State/Local	Erie	<i>proposed</i>
Wisconsin	Apostle Islands National Lakeshore*	U.S.	Superior	83
Minnesota	<i>Split Rock Underwater State Park</i>	State	Superior	<i>proposed</i>
Indiana	Indiana Dunes National Lakeshore*	U.S.	Michigan	1.5
*Surface jurisdiction only				

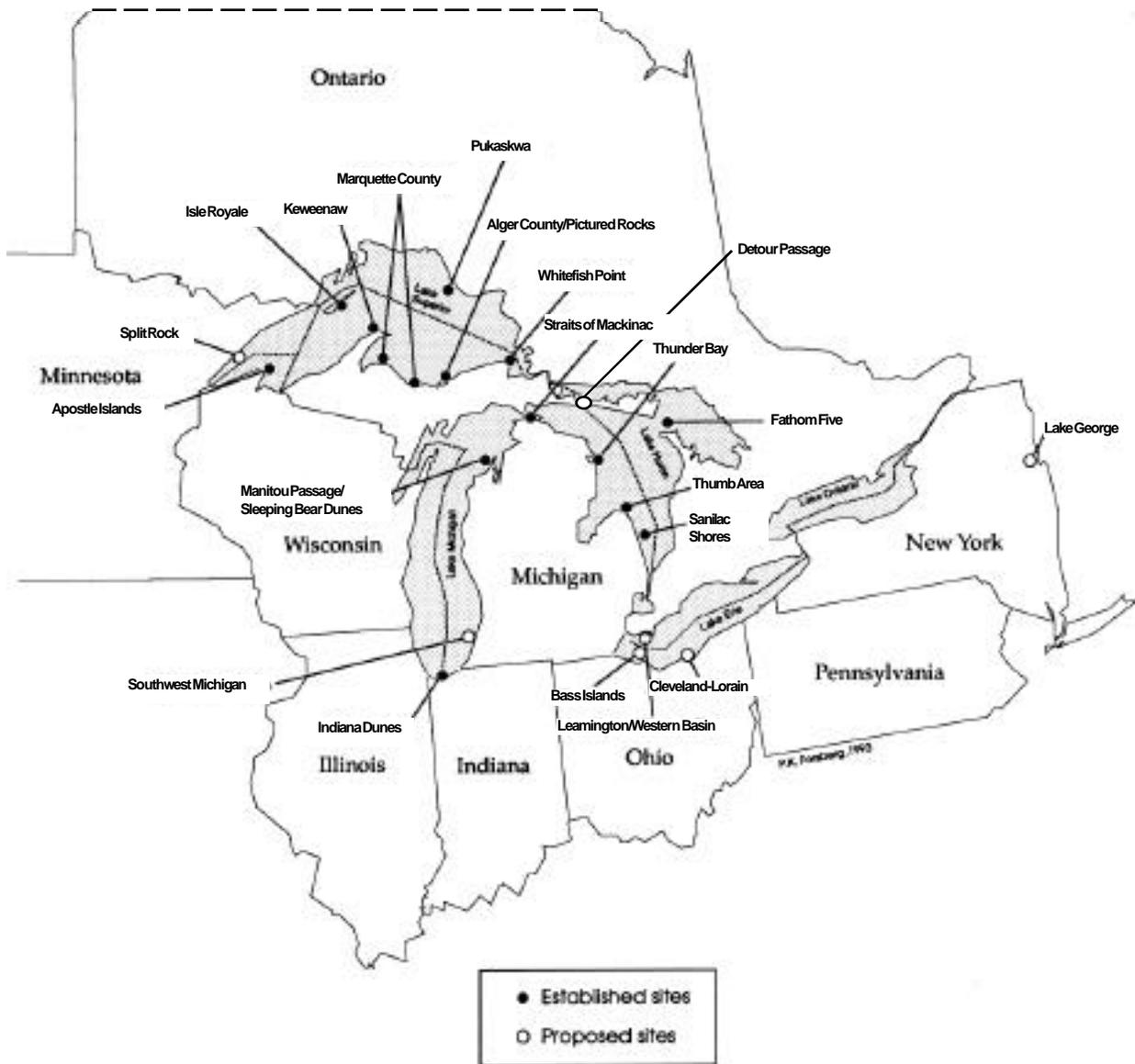


Figure 4.5 Locations of Great Lakes shipwreck management areas (adapted from Vrana and Mahoney 1993).

D. UNDERWATER CULTURAL RESOURCES OF THE THUNDER BAY REGION

1. HISTORIC SHIPWRECKS

The collection of historic shipwrecks in Thunder Bay represents a diversity of vessels that navigated the Great Lakes in the 19th and 20th centuries. These sunken vessels reflect transitions in ship architecture and construction methods from the era of wooden sailing boats to that of early steel-hulled steamers. There are also examples of unusual vessel types, including a wooden paddlewheel steamer built in 1844 and a “turtleback” bulk freighter from the 1890s.

The underwater archaeological sites and their associated artifacts can tell us about how the crews of Great Lakes vessels lived and worked, and what their larger society and culture were like (Terrell 1995). In addition, the shipwrecks provide insight into the regional commerce of the Thunder Bay region in the 19th and 20th centuries.

Known, probable, and suspected shipwrecks within the Thunder Bay region are listed in Tables 4.2 to 4.4. These lists indicate a potential total of 160 shipwrecks in the region. The locations of known shipwrecks in the Thunder Bay region and the estimated locations of probable and suspected sites are shown in Figure 4.8.

Known total losses are defined as vessels for which archaeological evidence and/or strong historical documentation (three primary sources or more) confirm the existence and location where they were stranded, foundered, burned/ exploded, or abandoned. *Probable* total losses include those vessels for which oral tradition, one or more historical primary sources, or three or more reliable secondary sources indicate their location. *Suspected* total losses encompass those shipwrecks listed in secondary sources, but not confirmed by primary documents, oral tradition, or archaeological fieldwork.



Thunder Bay Divers



Figure 4.6 (above) Remains of a wooden sailing boat in Thunder Bay.
Figure 4.7 (left) Scuba diver visiting a shipwreck site near North Point.

Table 4.2 Known shipwrecks in the Thunder Bay region.

Name of Vessel	Rig	Year Built	Date of Loss
Albany	steamer		1-1-1856
American Union	schooner		6-6-1894
Allen, E.B.	schooner	1864	11-20-1871
Barge No. 1	barge	1895	11-8-1918
Blanchard, B. W.	propeller	1870	11-29-1904
Flint, Oscar T.	propeller	1889	11-25-1909
Galena	propeller	1857	9-25-1872
Gardner, Nellie	schooner	1873	Oct-1883
Grecian	propeller	1891	6-15-1906
Hanna, D.R.	propeller	1906	5-16-1919
Ishpeming	schooner	1872	11-25-1903
Magruder, J.H.	scow	1869	9-17-1895
Miztec	schooner	1890	Jul-1920
Monohansett	steamer	1872	11-11-1907
Monrovia	propeller	1943	6-25-1959
Montana	propeller	1872	9-6-1914
New Orleans	steamer	1844	6-11-1849
New Orleans	propeller	1885	6-30-1906
Nordmeer	propeller	1954	11-19-1966
Norman	propeller	1890	5-30-1895
Northern Light	barge	1858	Aug-1881
Oswegatchie	propeller	1867	11-26-1891
Pewabic	steamer	1863	8-9-1865
Portsmouth	propeller	1853	11-15-1867
Rend, William P.	propeller	1888	9-22-1917
Scanlon's Barge	deck barge		
Scott, Isaac M.	propeller	1909	11-9-1913
Shamrock	schooner	1875	6-26-1905
St. Maries	propeller	1885	8-30-1892
Thew, WM. Peter	propeller	1884	6-22-1909
Van Valkenburg, Lucinda	schooner	1862	5-3-1887
Viator	propeller	1904	10-31-1935
Windiate, Cornelia B.	schooner	1874	Dec-1875
Woolson, Mary	schooner	1890	7-18-1920

Table 4.3 Probable shipwrecks in the Thunder Bay region.

Name of Vessel	Rig	Year Built	Date of Loss
Adriatic	bark		1872
Aimee	steam tug	1879	1883
Alvina	schooner	1871	Oct-1901
Arnaline/FalsePetrel?	prop/brig?		1842
Bay City	schooner	1857	11-19-1902
Becker, B.H.	propeller	1932	8-10-1937
Bertha M.	schooner	1902	7-28-1930
Berriman, Francis	schooner	1872	5-7-1877
Bridge, H.P.	bark	1864	1865
Brooklyn	schooner	1864	6-15-1892
Bruce, Kate L.	schooner	1872	11-11-1877
Corsican	schooner	1862	6-1-1893
Davidson, James	propeller	1874	10-4-1883
Deemer, Edward H.	propeller	1899	5-20-1923
Don Quixotte	steamer	1836	1836
Effort	barge	1941	
Egan, Marion	schooner	1861	9-22-1875
Egyptian	propeller	1873	12-9-1897
Ellen	schooner	1846	Nov-1856
Elvina	schooner	1868	10-31-1901
Empire State	schooner	1862	11-8-1877
Excelsior	bark	1865	10-15-1871
Exile	schooner	1867	11-26-1916
Fish, William	brig	Nov-1869	
Florida	propeller	1889	5-20-1897
Franklin, Benjamin	steamer	1842	1850
Franz, W.C.	propeller	1901	11-21-1934
Gilberts, W.H.	propeller	1892	5-22-1914
Goodell	schooner	1864	Nov-1891
Guenther	barge		1890
Guillotine	schooner		4-1-1881
Hall, James H.	schooner	1885	11-7-1916
Harvest Queen	schooner	1863	9-13-1888

Continued on the following page

Table 4.3 Probable shipwrecks in the Thunder Bay region (continued).

Name of Vessel	Rig	Year Built	Date of Loss
Hathaway, Colonel	schooner	1870	9-16-1881
Havre	schooner	1836	11-02-1845
Heart Failure	dredge		c.1910
Helen, C.	propeller	1874	10-4-1922
Holmes	schooner		10-14-1887
Hubbard, H.	schooner	1842	Jun-1845
Hunter	schooner	1854	Sep-1872
Ida & Mary	scow	1858	1872
Jeka	tug		4-22-1930
Johnson, John T.	schooner	1873	11-28-1904
Jupiter	schooner	1857	9-15-1901
Knight Templar	barge		7-25-1903
Lafarge, Frank	schooner		1901
Larson, Julia	schooner	1874	8-26-1912
Mackinaw	propeller	1866	10-28-1890
Marine City	steamer	1866	8-28-1880
Maryett	yacht		10-19-1901
Maxwell, William	tug	1883	9-19-1908
Miami	propeller	1888	8-6-1924
Mildred	tug	1868	11-6-1872
Miller, Grace	tug		10-13-1875
Mitchell	steamer		11-14-1914
Morse, Fred A.	schooner	1871	6-27-1892
Morton, J.D.	steamer		1853
Mowatt, James	schooner	1884	10-1-1919
New York	propeller	1879	10-10-1910
Ney, Marshall	schooner		1847
Nichols	steamer		11-13-1913
Nonpareil	schooner	1856	7-7-1866
Northampton	brig		Nov-1854
Ochs, Jay	tug	1888	10-20-1905
Ogarita	schooner	1864	10-25-1905
Palmer, E.B.	schooner	1874	11-1-1892
Parkes, O.E.	propeller	1891	5-3-1929
Paquette, Fishtug	tug		c.1910

Continued on the following page

Table 4.3 Probable shipwrecks in the Thunder Bay region (continued).

Name of Vessel	Rig	Year Built	Date of Loss
Raab, Lucy	schooner	1858	Nov-1862
Raynor, Annie C.	schooner	1858	11-17-1863
Red Bottom	schooner		1876
Roanoke	schooner	1843	10-27-1866
Shaw, John	schooner	1885	11-13-1894
Simons, WM. H.	barge	1919	9-16-1933
Spangler, Kyle	schooner	1856	11-7-1860
Stephens, WM. H.	schooner	1855	Oct-1863
Venus	schooner	1872	10-3-1887
Vienna	schooner	1849	10-27-1906
Warner, John F.	schooner	1855	10-13-1890
Wilson, Belle	propeller	1881	8-8-1888
Wilson, D.M.	propeller	1873	10-27-1894
Woolson, Mary	barge		7-19-1920
Young, William A.	schooner	1883	11-17-1911

Table 4.4 Suspected shipwrecks in the Thunder Bay region.

Name of Vessel	Rig	Year Built	Date of Loss
Acontias	barge		10-29-1887
Bemis, A.S.	tug	1859	9-5-1872
Bissel, Harvey	schooner	1866	11-28-1905
Blake, J.W.	schooner		1855
Braman, D.R.	schooner		1-1-1870
Canada	propeller		1-1-1883
Carkin	tug		10-30-1887
Chase, Steven	fish tug		4-18-1933
Choctaw	whaleback	1892	7-11-1916
Cochrane, Tom	tug		Oct-1862
Congress	propeller	1861	1867 or 1893
Corsair	schooner		9-28-1872
Czar	schooner		1-1-1875
Detroit	steamer barge		4-29-1872
Fulton, Robert	steamer	1835	1844
Goliath	steamer		11-3-1851
Harwich	schooner		1-1-1858
Ironton	schooner		9-26-1894

Continued on the following page

Table 4.4 Suspected shipwrecks in the Thunder Bay region (continued).

Name of Vessel	Rig	Year Built	Date of Loss
Kaliyuga	steamer	1887	10-19-1905
Lady Washington	schooner		10-19-1828
Lathrop, S.B.	tow barge		5-14-1902
Mackinaw	steamer	1866	1-1-1890
Marine City	barge		11-18-1901
Marine City	sidewheel		8-29-1880
Meeker, Lewis	schooner		1-1-1872
Merrick, M.F.	schooner		5/6-17-1889
Mollie	scow		9-15/16-1881
Neshota	schooner	1864	1872
New Hampshire	schooner	1846	1885
Ninna	schooner	1866	May-1875
Number 83	scow	1920	10-26-1941
Oswegatchie/3 Barges	steamer /barges		11-21-1891
Portland	schooner		1-1-1867
Prindiville	tug		4-13-1881
Rounds, W.H.	schooner		4-12-1905
Rumbell	steamer		1-1-1910
Ryan	steamer		6-12-1890
Scow #105	barge		8-3-1934
Stevens, JN or JH	steamer barge		5-15-1927
Thousand Islander	steamer		12-28-1928
Tu Jax	yacht	1913	9-5-1913
Typo	schooner		10-14-1899
Wesley	schooner		9-19-1902

* Shipwreck tables 4.2 - 4.4 were assembled from two different databases. The tables provide the best available information for the Thunder Bay region (including Presque Isle Harbor to Sturgeon Point), and reflect different levels of accuracy in historical documentation (i.e., known, probable, suspected). These tables will be amended based on continued historical research of Great Lakes vessels and Thunder Bay shipwrecks.

Shipwrecks
in Thunder Bay Region

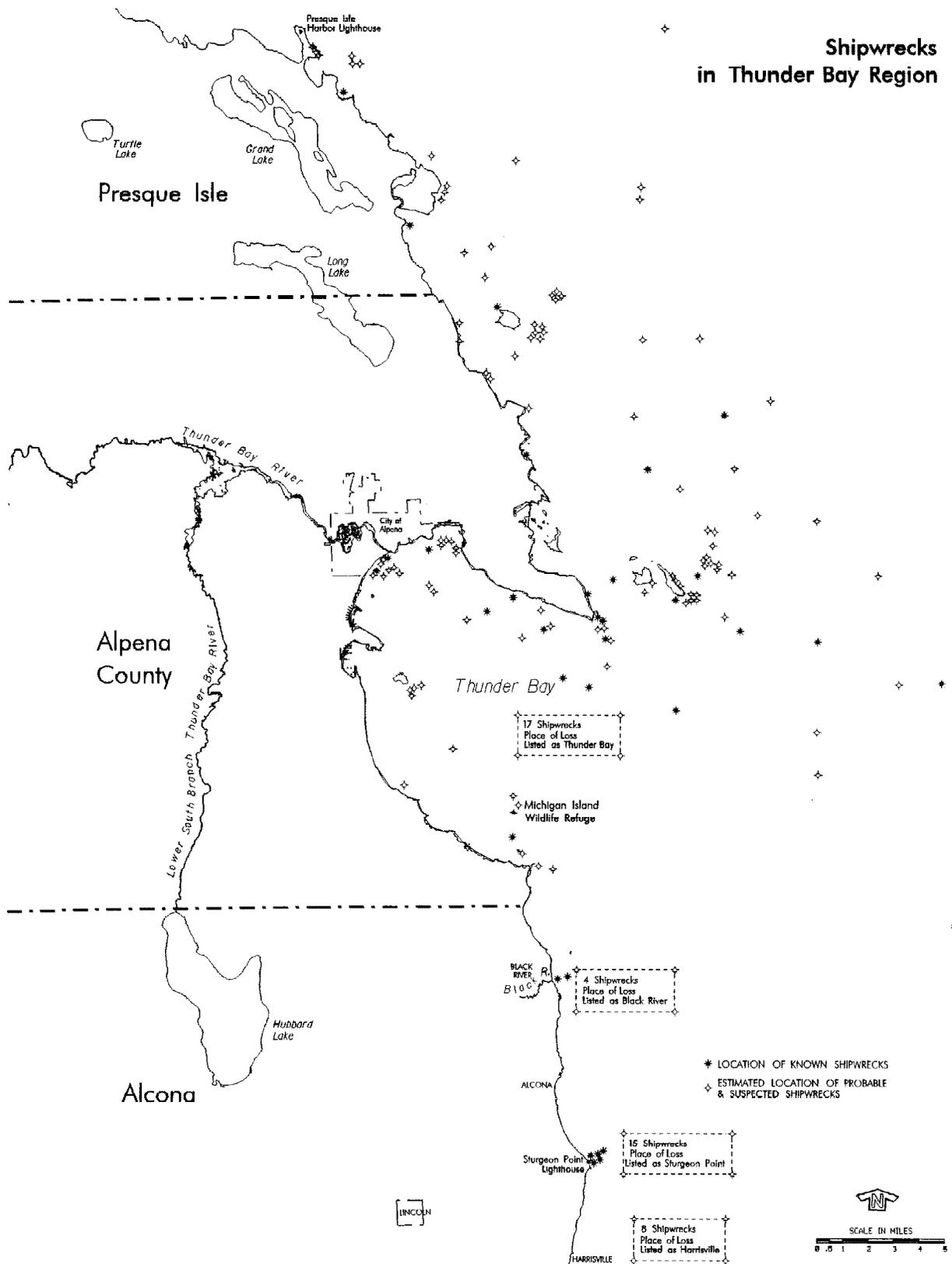


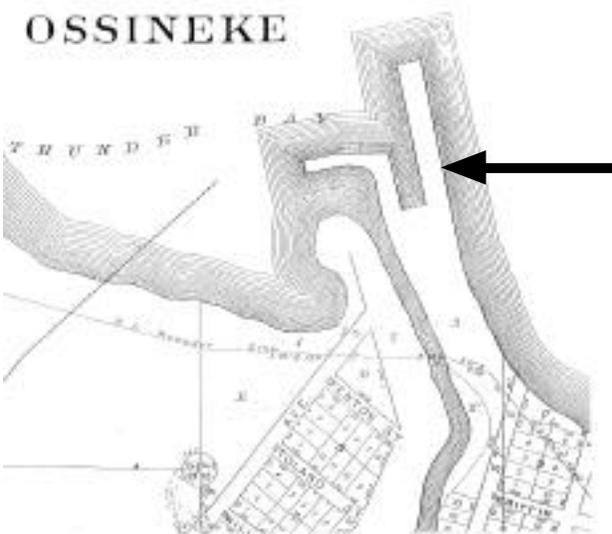
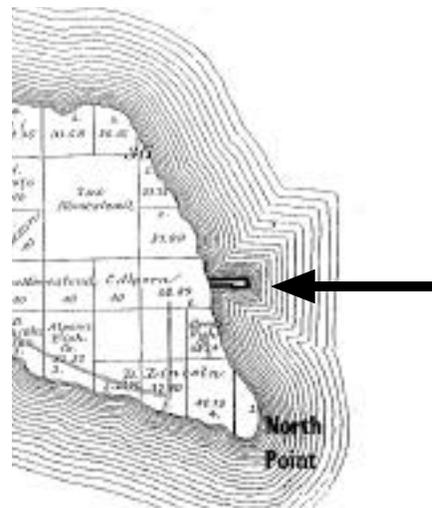
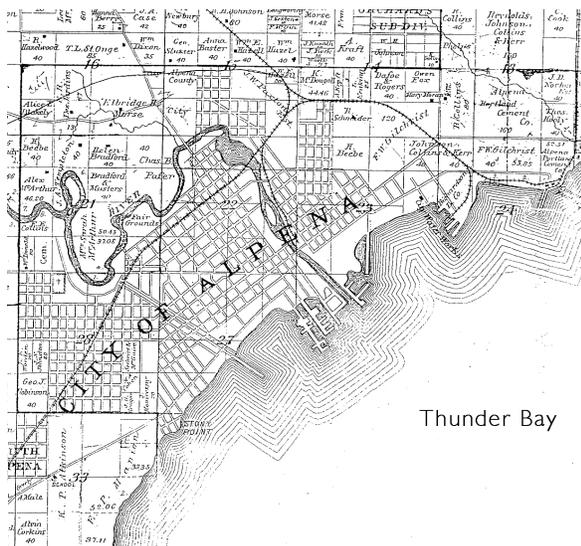
Figure 4.8 Approximate locations of shipwrecks in the Thunder Bay region.

2. LAND ASSOCIATED UNDERWATER HISTORICAL SITES

No surveys, inventories, or assessments of land associated underwater historic sites are known to have been completed for the Thunder Bay region (Vrana 1993). Considering the settlement of the region, however, it is probable that these types of sites exist. As an example, the 1903 plat book of Alpena County shows a number of wharfs and docks in Alpena Harbor (Figure 4.9), and a dock is shown just north of land owned by the Alpena Fish Company on

North Point (Figure 4.10). A large wharf appears to have existed at Ossineke in 1880 (Figure 4.11; Sanborn-Perris Map Company 1880).

The remains of historical dock sites have been observed underwater near the light station and boathouse on Thunder Bay Island; in Alpena Harbor and Whitefish Bay; and at Ossineke, South Point, Black River, and Middle Island (McConnell, personal communication 1992). Other land associated underwater sites may remain from Native American habitation in the Thunder Bay region.



(upper left) Figure 4.9 Alpena waterfront in 1903.

(upper right) Figure 4.10 North Point in 1903.

(lower left) Figure 4.11 Ossineke/Devils River in 1880.

3. NATIVE AMERICAN AND COASTAL ARCHAEOLOGICAL SITES

Cultural materials associated with the coastal villages and habitation sites of Native Americans may exist in nearshore waters of Lake Huron (Vrana 1993). Materials from Native American fishing and trade activities, and sites from Archaic peoples could be located on Lake Huron bottomlands in deeper water (Halsey 1990; Fitting 1975). Predictions of Archaic period sites in deeper water are based on the existence of lower water levels in glacial lakes that pre-date the present Great Lakes (Halsey 1990; Fitting 1975).

More recent Native American habitation sites are clustered at the mouth of the Thunder Bay River and at the mouth of the Devils River near Ossineke (Peebles and Black 1976).

The discovery of Naub-Cow-Zo-Win discs in sites near the mouth of the Thunder Bay River is of particular importance to archaeologists because they “represent the only proven prehistoric occurrence of these symbols and, therefore, their oldest documented appearance” (Cleland 1985:131). These shale discs are engraved with symbolic and stylistic representations of the underwater panther, the otter, the beaver, a class of thunderbirds or thunderers (Figure 4.12), the moose, star shapes, and possibly the great medicine tree of the Ojibway (Cleland 1985). The disks may have been

personal amulets and “because of their limited archaeological distribution, they were somehow associated specifically with Thunder Bay on Lake Huron” (Cleland 1985:138).

Most of the Thunder Bay region has not been surveyed to locate coastal archaeological sites (Mead, personal communication 1992). Twenty-four prehistoric and historic archaeological sites have been identified within the Alpena County coastal area (i.e., landward 2 miles from the Great Lakes shoreline). The Presque Isle County coastal area contains 15 sites and the Alcona County coastal area contains 4 sites (Halsey, personal communication 1995; Mead 1992).

Peebles and Black (1976) reviewed the published and unpublished literature on archaeological sites within the coastal areas of Michigan. As of 1997, no archaeological sites in the coastal zone adjacent to the Sanctuary are on the National Register of Historic Places.



Figure 4.12 Naub-Cow-Zo-Win disk possibly representing a “thunderbird” or “thunderer.”

E. NATIONAL HISTORIC SIGNIFICANCE

1. INTRODUCTION

Before NOAA can designate a National Marine Sanctuary, the Sanctuary must be shown to contain resources of “special national significance” because of their conservation, recreational, ecological, historical, research, educational, or aesthetic qualities. The Thunder Bay National Marine Sanctuary contains a collection of shipwrecks that is believed to be of national historic significance.

The shipwrecks of the Thunder Bay region constitute a microcosm of the Great Lakes commercial shipping industry as developed over the last two hundred years. However, it has never been clear how representative these shipwrecks are in the broader context of Great Lakes history. This section is intended to provide some preliminary discussion of the historic context of Thunder Bay and its national historic significance.

The information in this section is excerpted and summarized from the *Preliminary Comparative and Theme Study of National Historic Landmark Potential for Thunder Bay, Michigan* (Martin 1996).

The theme study consisted of historical research on specific historic shipwreck sites and their relationship to both the regional and national contexts to the extent that initial evaluations of historic significance could be made. Due to the

limited scope of the project, the study emphasized archival research; it included no archaeological field work and only minimal comparative work. The results indicate which sites have the greatest potential for *national historic significance*, based on criteria of the National Historic Landmark Program.

Vessels that are known, probable, and suspected shipwrecks within the Thunder Bay region were interpreted according to important Great Lakes historical themes. These historical themes include prehistoric transportation; early trade and exploration by Europeans; early settlement and military affairs; westward expansion; business and agricultural products; lumber; coal, stone, and ore; foreign trade and the St. Lawrence Seaway; transportation technology (commercial sail); transportation technology (commercial steam); and transportation technology (motor-powered and unpowered vessels).

Eight vessels in the Thunder Bay region that seemed to be the best candidates for national historic significance were then evaluated. Historical profiles of these eight vessels are presented on pp. 111 – 117. Due to project limitations, the national historic significance of individual vessels adjacent to Alcona County was not evaluated.

The results of the theme study also include a statistical comparison of Thunder Bay shipwrecks to those believed to exist throughout the Great Lakes basin. Thunder Bay shipwrecks were compared to an approximately 16% sample of

Great Lakes shipwrecks. This comparative work is discussed on pp. 118 – 123.

Specific submerged sites of other types—small craft, abandoned docks, fishing camps—were not investigated. However, the potential value of these sites has been noted within the broader context of the history of the United States, the Great Lakes, and Thunder Bay region.

The choice to pursue both research of specific vessels and limited statistical sampling was made as a means to get the most mileage out of preliminary funding. The statistical analysis provided a mechanism by which the collection of Thunder Bay shipwrecks could receive rudimen-

tary comparison to the regional context. Research of individual vessels provided a link between the historical contexts of the Great Lakes and the nation, and the special conditions that brought vessels to their demise at Thunder Bay. The decision to deal with a dual emphasis dictated the early selection of specific vessels that seemed to be the best candidates for national historic significance. Ideally, all vessels would have been thoroughly researched before such a determination was made. The same limitations that impacted research for specific vessels made it necessary for statistical sampling of Great Lakes shipwrecks based on secondary sources with little additional research.



Jesse Besser Museum

Figure 4.13 Lake vessels in winter storage at Alpena.

2. VESSELS OF POTENTIAL NATIONAL HISTORIC SIGNIFICANCE

Vessels of potential national historic significance in the Thunder Bay region are listed in Table 4.5. Profiles of these vessels are presented by historical theme in the following pages. The profiles are excerpted from Martin (1996). More detailed historical sketches of the careers of these vessels are found in Martin's 1996 report, "Preliminary Comparative and Theme Study of National Historic Landmark Potential for Thunder Bay, Michigan."

A similar study of potential national historic significance for Alcona County shipwrecks was not completed prior to publication of the FEIS/MP. Therefore, the current list of vessels of potential national historic significance should be

considered as preliminary.

Early Schooner Trade

○ *Havre*

The two-masted schooner *Havre* was built in Richmond, Ohio in 1836 by Jared Lockwood. The vessel was named for the fledgling port of Havre, Michigan (just north of present-day Toledo, Ohio) — no longer in existence. *Havre* was initially enrolled at Buffalo, New York on August 31, 1836 with the following dimensions: 80' 2" x 23' 3" x 8' 4" and 134 89/95 gross tons. The original owners were Lewis D. Allen, Augustus H. Scoville, and Thadeus Brooks all of Buffalo, and Jared Lockwood and W. Reed of Richmond, Ohio. Brooks served as master, and the home port was Buffalo.

Table 4.5 Vessels of potential national historic significance.

Name	Type	Built	Lost	Historical Theme
<i>Havre</i>	schooner	1836	1845	early schooner trade
<i>H. Hubbard</i>	schooner	1842	1845	early schooner trade
<i>New Orleans</i>	sidewheeler	1844	1847	westward expansion / passenger trade
<i>John F. Warner</i>	schooner	1855	1890	early lakes to ocean trade
<i>Kyle Spangler</i>	schooner	1856	1860	early lakes to ocean trade
<i>James Mowatt</i>	schooner	1884	1919	height of schooner development
<i>Grecian</i>	propeller	1891	1906	steel shipbuilding/ bulk cargo trade
<i>Isaac M. Scott</i>	propeller	1909	1913	steel shipbuilding and bulk cargo trade; Great Storm of 1913

Havre was engaged in Great Lakes domestic trade during its entire career, including freight and passenger service. The original enrollment describes the vessel as having a “scroll” head, a decorative piece above the stem that was not in universal usage, even during this early period of lakes navigation. The vessel was described later as having a “figurehead.”

Havre changed ownership several times before its last enrollment on May 5, 1845 at Detroit, Michigan. The last owner and master was Edgar R. Hugunin of South Port in the Wisconsin Territory. *Havre* went ashore on Middle Island, Lake Huron on November 2, 1845 after nearly ten years in the upper lakes trade. The vessel valued at \$5,000 was declared a total loss.

○ *H. Hubbard*

The schooner *H. Hubbard* was a two-masted vessel built at Port Huron, Michigan in 1842. The first enrollment issued on July 12, 1842 at Detroit, Michigan gave the dimensions as 52' x 16' 1" x 6' 2" and 53 46/95 gross tons. The vessel was named for part owner Henry Hubbard of Sullivants, New Hampshire. D.M. Heyedin of Port Huron was the other owner and A. Howe was the first master.

H. Hubbard was sailing between Detroit and Sault Ste. Marie when it capsized in the vicinity of Thunder Bay on or about June 8, 1845. The crew, including young ordinary seaman Peter White (later prominent Marquette businessman and investor), was picked up by a passing vessel

and taken to Bay City. Later attempts to find and retrieve the vessel were unsuccessful.

Early Lakes to Ocean Trade

○ *Kyle Spangler*

The two-masted schooner *Kyle Spangler* was built in 1856 at Black River (now Lorain), Ohio by William Jones (1808 – 1888). William Jones was a member of the famous Jones shipbuilding family who was responsible for some of the most successful Great Lakes vessels built during the wooden shipbuilding era.

Kyle Spangler was first enrolled at Cleveland on May 15, 1856 with the following dimensions: 130' 7" x 26' 1" x 11' 1" and 349.56 gross tons. The owners decided to send the vessel to the Atlantic coast with lumber in 1859. Little is known about the trip, but it appears that ownership changed while the schooner was on salt-water.

While upbound on Lake Huron on November 7, 1860, *Kyle Spangler* collided with the down-bound schooner *Racine* between Middle Island and Thunder Bay, and sank. At the time, the vessel was valued at \$9,000 and had an insurance rating of A1, the highest a vessel could obtain.

○ *John F. Warner*

The two-masted schooner *John F. Warner* was built at Cleveland, Ohio in 1855 by Quayle and

Martin. It was one of the first of a series of vessels built by Quayle and Martin for European trade. The *John F. Warner* was enrolled at Cleveland on August 27, 1855 with the following dimensions: 126.75' x 26.5' x 11.19' and 341 55/95 gross tons.

In 1858, *John F. Warner* was issued a certificate of registry to allow the vessel to participate in foreign trade. Its first trip was to Greenwich, England with a cargo of barrel staves. The staves were sold and the vessel returned to Cleveland via Glasgow, England where a cargo of pig iron was loaded. The *John F. Warner* completed two more trips to England before returning to Great Lakes coastal trade in 1860.

John F. Warner was involved in several accidents before its loss at the mouth of the Thunder Bay River near Alpena, Michigan on October 13, 1890. The vessel was anchored off the river mouth when the anchor chain parted and the master was unable to sail into the Thunder Bay River. The vessel grounded a few hundred feet from the harbor lighthouse and swung broadside onto the sea. The crew escaped unharmed, but continuous buffeting by the waves broke the vessel in half in clear view of residents of Alpena. The lath and lumber cargo were later removed and the wreck was moved south of Alpena and abandoned a few days later.

Height of Schooner Development

○ *James Mowatt*

The three-masted schooner *James Mowatt* was built at Milwaukee, Wisconsin in 1884 by Wolf and Davidson. The vessel was first enrolled at Milwaukee on August 1, 1884 with the following dimensions: 166' 4" x 33' 1" x 13' and 523.17 gross tons. *James Mowatt* turned out to be the last full-rigged, three-masted schooner built at Milwaukee. It was built with fine lines and a clean run that foretold of fair speed.

W.W. Wolf remained managing owner of the vessel until 1887. *James Mowatt* was reenrolled at Port Huron, Michigan in 1894 with J.W. Squires as managing owner and master. J.W. Squires remained managing owner until 1907 when he was replaced by Richard F. Squires. *James Mowatt* became a total loss on October 10, 1919. On that day, the vessel foundered thirteen miles northwest of Alpena, Michigan with a cargo of lumber.

Westward Expansion/Passenger Trade

○ *New Orleans*

The wooden sidewheel steamer *New Orleans* was built at Detroit, Michigan in 1844 by B.F. Goodsell, reportedly on the bottom of the



Figure 4.14 (left) Upper lakes schooner *James Mowatt* at coal dock.

Figure 4.15 (below) Schooner *James Mowatt* with a load of lumber at Michigan City, Indiana.



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burned steamer *Vermilion*. This reconstruction of badly damaged lake vessels was not unusual during this period when calamities were frequent and iron fasteners and engineering equipment were extremely expensive and difficult to obtain. The vessel was first enrolled at Buffalo, New York on September 13, 1844 with the following dimensions: 185' 4" x 26' 8" x 12' 10" and 610 gross tons.

New Orleans was first owned by Samuel F. Gelston of Buffalo, Jeremiah Northrop of Rochester, Erastus Prosser of Albany, and Stephen Card of New York City. James C. Evans and Samuel Gelston purchased the vessel in 1845.

Throughout its career, *New Orleans* was used to run from Lake Erie to ports on the west shore of Lake Michigan. This service was connected to the immigrant and package freight trade. *New Orleans* made bimonthly trips westward, taking

immigrants and travelers west with their belongings and such freight as was available. On the return trip, the vessel carried travelers on their way east, condensed products of agriculture such as whiskey, and such manufactured goods and other freight that the west offered. *New Orleans* had a U.S. Postal Service contract for at least part of its career.

While upbound in a heavy fog, the sidewheeler *New Orleans* grounded on a reef west of Sugar Island on June 13, 1847. The passengers and crew were removed to Thunder Bay Island by local fishermen and cared for by the lighthouse keeper. Strong winds on June 14 broke the vessel's back and it sank, becoming a total loss.

The cross-head steam engine was removed and transported to Detroit in the *Albany*.

Steel Shipbuilding and the Bulk Cargo Trade

○ *Grecian*

The propeller *Grecian* was part of the critical design revolution that took early steel bulk carriers from the initial blueprint developed around the *Spokane* of 1886 and evolved the carriers into the large pre-World War I "lakers." *Grecian* was a "turtleback" built at Cleveland, Ohio in 1891 by Globe Ship Building Company (Figure 4.16).

The vessel was enrolled at Cleveland on March 31, 1891 with the following dimensions: 296' 2" x 40' 4" x 21' 1" and 2,348 gross tons. *Grecian* was propelled by a triple expansion steam engine and two coal-fired scotch boilers built also by Globe Ship Building Company.

Turtleback freighters "created a very pleasing picture with their rounded forward decks, gracefully-curved hulls, refined forward quarters, and rakish stacks . . . but by 1892, the turtleback was falling into disfavor with vessel owners and masters. They were slightly more expensive to build and captains voiced strong objections, claiming that visibility ahead was reduced and that sound was different, particularly during thick weather" (Wright 1969:75).

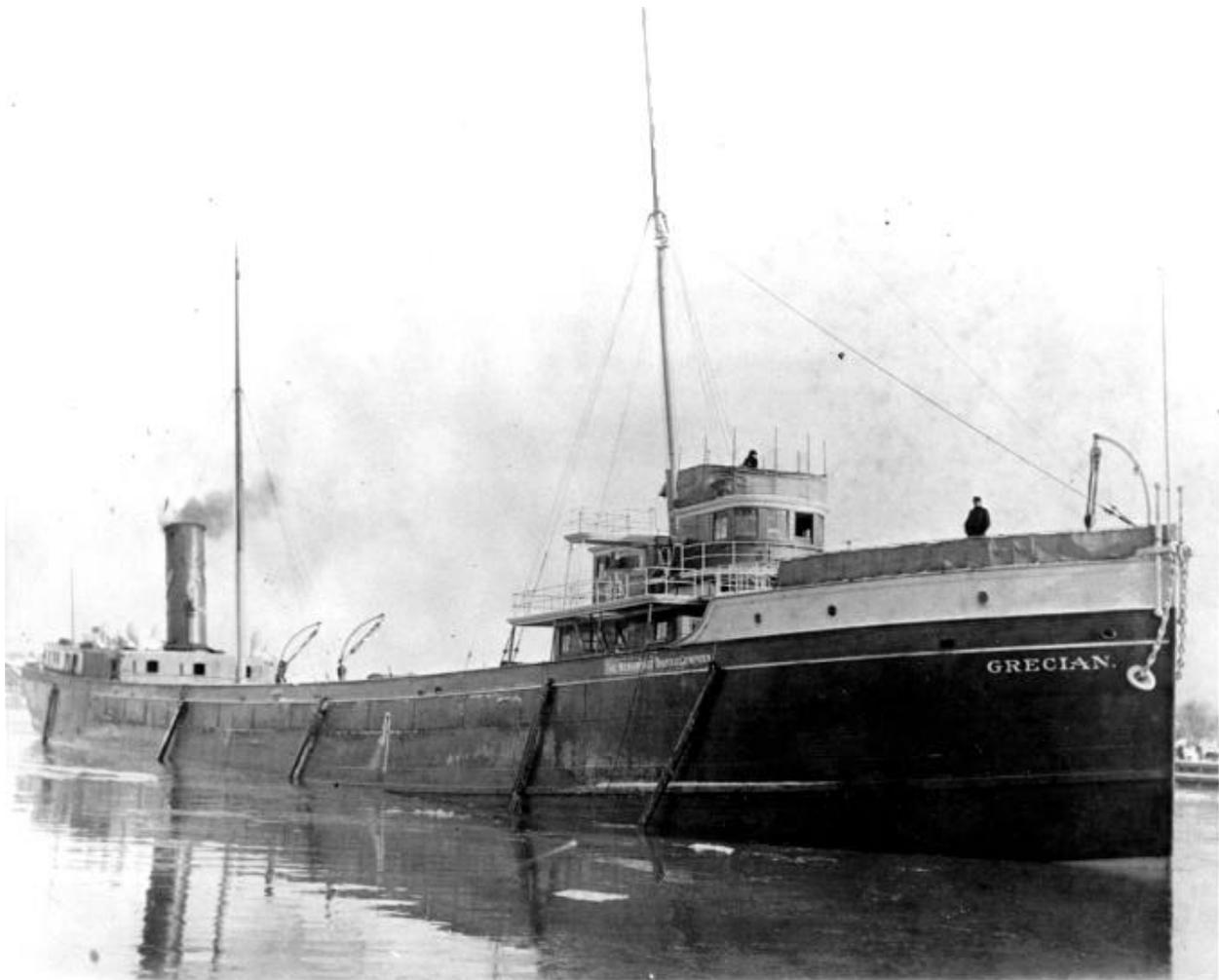
The design of turtlebacks was influenced significantly by the "whaleback" design attributed to Alexander McDougall of Duluth, Minnesota.

Grecian was employed in the iron ore and coal trade throughout its career. It was lost through a series of accidents in 1906. First, the vessel struck a rock five miles below Detour, Michigan but was able to make it to a dock at Detour before sinking. *Grecian* was then raised and towed down Lake Huron by the propeller *Sir Henry Bessemer* for repair at the Detroit Ship Building Company. While en route, the vessels encountered a storm and *Grecian* sank off Thunder Bay on June 15. No lives were lost, but the vessel proved a total loss. Subsequent salvage attempts were unsuccessful.

○ *Isaac M. Scott*

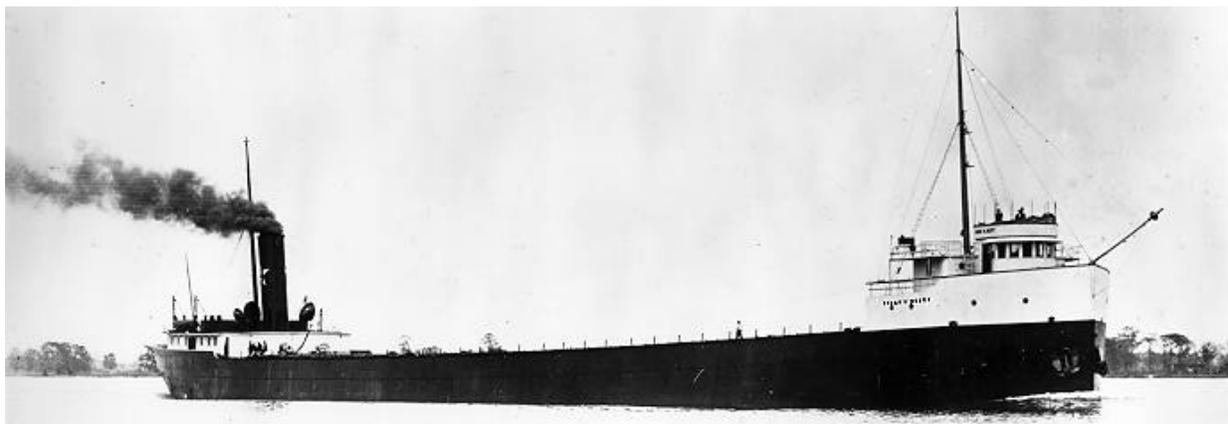
The steel-hulled propeller *Isaac M. Scott* was built at Lorain, Ohio in 1909 by the American Ship Building Company. The vessel was enrolled at Cleveland on June 29 with the following dimensions: 504' x 54' x 30' and 6,372 gross tons. *Isaac M. Scott* was powered by one triple expansion steam engine and two coal-fired scotch boilers built also by the American Ship Building Company (Figure 4.17).

Isaac M. Scott was built for the Virginia Steam Ship Company of Cleveland, Ohio and was managed throughout its career by the M.A. Hanna Company, also of Cleveland. The vessel's home port was Fairport, Ohio. The vessel's name came from Isaac MacBurney Scott (1866-1942), who was President of the La Belle Iron Works, presumably a customer of the M.A. Hanna Company.



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Figure 4.16 Propeller *Greician* underway.



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Figure 4.17 Bulk freighter *Isaac M. Scott* foundered later in the Great Storm of 1913.

The vessel operated in the iron ore and coal trade throughout its career, making weekly trips from the lower to the upper lakes. This trade consisted of the north and westward movement of coal, and the south and eastward movement of iron ore to the steel mills of the southern lakes.

Isaac M. Scott was one of eleven vessels lost during the Great Storm of 1913, a catastrophe often described as “the most disastrous that has ever swept our Great Lakes, both from loss of life and property” (Bowen 1940:189-190). This storm took the lives of an estimated 235 mariners, 178 of which were lost on Lake Huron. The storm brought high winds, heavy snow, and bitter cold that paralyzed road and rail traffic ashore, downed power lines, and interrupted communications.

Isaac M. Scott left Cleveland on or about November 7, 1913 with coal upbound for Milwaukee. The vessel was last sighted during the morning of November 9, north of Tawas, Michigan, just a few hours before the brunt of the storm struck Lake Huron. Sometime within the next twenty-four to forty-eight hours, *Isaac*

M. Scott foundered with all hands. *Isaac M. Scott* and *Charles S. Price* were lost with twenty-eight lives each, the greatest number of individuals lost in a single sinking during the Great Storm of 1913.

The loss of so much vessel tonnage during the storm caused immediate difficulties in moving enough raw bulk products to meet the needs of domestic commerce. Industry had difficulty obtaining enough coal and iron ore. Food and feed industries could not obtain enough grain to fill their needs. Prices for consumer products rose all over the country.

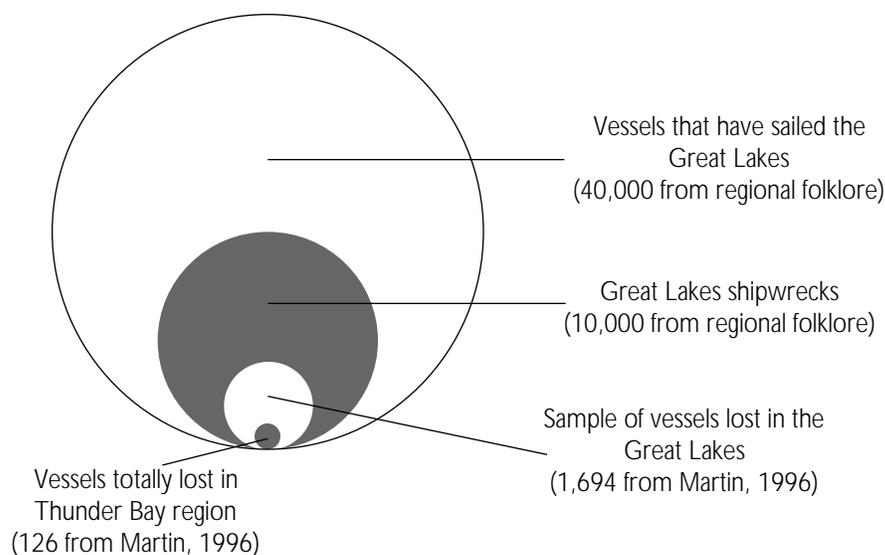
The long term consequences of the storm and the sinking of lake vessels, including *Isaac M. Scott*, were several. Complaints about the U.S. Weather Bureau led to increased efforts toward achieving better weather forecasting and more rapid communication of storm warnings. Criticism of the shipping companies and shipbuilders led to a series of conferences with insurers and mariners that resulted in construction of vessels with more longitudinal strength and greater stability.

3. THUNDER BAY SHIPWRECKS AS REPRESENTATIVE OF THE LARGER GREAT LAKES

Martin (1996) is the first study to compare a discrete number of shipwrecks to a sample of the total Great Lakes shipwrecks in order to test representativity (Figure 4.18). The statistical study does not discuss the representativity of Thunder Bay shipwrecks among the estimated 40,000 vessels to have sailed the Great Lakes. Instead, the study considers the representativity of known and probable Thunder Bay shipwrecks to the known, probable, and suspected shipwrecks of the Great Lakes. This approach was chosen because the number of vessels totally lost is a subset of the total set of Great Lakes vessels. Regional folklore holds that there are 10,000 Great Lakes shipwrecks. Though historians feel that this number is inflated, for this study it is assumed to be viable for statistical purposes.

Martin (1996) combined several existing databases to compile a database of 1,694 Great Lakes shipwrecks (roughly 17% of the total figure prominent in regional folklore). The database has several known biases: (1) it contains few vessels under 20 gross tons; (2) it includes a high percentage of vessels lost on Lake Erie; (3) it includes only vessels, no other submerged sites; and (4) it is strongest in the Post-Civil War period. The limitations of this sample are such that the results should be carefully interpreted as indicators of trends only.

The sample of Great Lakes shipwrecks is based largely upon secondary sources and, therefore, is composed primarily of probable and suspected total losses. The locations of some shipwrecks are known, having been confirmed through archaeological and historical investigation.



Vrana after Martin (1996)

Figure 4.18 Sampling design for preliminary comparative analysis of Thunder Bay region shipwrecks.

For Thunder Bay, the method was much the same. Nevertheless, prior studies and more focused research on the Thunder Bay region shipwrecks has increased the number of known and probable total losses relative to the number of suspected shipwrecks.

As Tables 4.6 and 4.9 illustrate, the comparative strengths of the identified shipwrecks at Thunder Bay include a strong collection of wooden sailing vessels from the heyday of sail (1850 – 1880), and a good collection of wooden and steel vessels powered by steam engines (1880-1920).

Thunder Bay is the final resting place for an unusually large number of steel propellers, particularly from the critical decades when changes in vessel design were rapid and short-lived (i.e., 1880 – 1920).

Although Thunder Bay has a large number of wooden vessels, it has a higher percentage of steel vessels than wood vessels when compared to the number lost on the Great Lakes (Table 4.7).

Table 4.6. Comparison of basic vessel types* lost at Thunder Bay and a sample of vessels lost on the Great Lakes.

Type of Vessel	# Lost at Thunder Bay	# Lost on the Great Lakes	%Thunder Bay of Great Lakes Sample	% of Great Lakes Sample
Sail				
Ships, Brigs, Barks	5	86	0.3	5.1
Sloops	0	15	0.0	0.9
Schooners	54	675	3.2	39.8
Scows	1	80	0.0	4.7
Steam				
Sidewheelers	4	56	0.2	3.3
Propellers	40	393	2.4	23.2
Motor	2	21	0.1	1.2
Unpowered	10	119	0.6	7.0
Unknown/Unclear	<u>10</u>	<u>249</u>	<u>0.6</u>	<u>14.7</u>
Totals	126	1694	7.4%	99.9%

*Note: Type of vessels at the time of loss only.

Table 4.7 Comparison of basic vessel construction material lost at Thunder Bay and a sample of vessels lost on the Great Lakes.

Type of Material	# Lost at Thunder Bay	# Lost on the Great Lakes	%Thunder Bay of Great Lakes Sample	% of Great Lakes Sample
Wood	91	1187	5.4	70.0
Iron	0	15	0.0	0.9
Composite	0	5	0.0	0.3
Steel	10	118	0.6	7.0
Unknown/Unclear	<u>25</u>	<u>369</u>	<u>1.5</u>	<u>21.8</u>
Totals	126	1694	7.5%	100.0%

In terms of cargos carried, Table 4.8 shows that Thunder Bay shipwrecks were engaged in all major trades at the time of loss. Thunder Bay is particularly strong in vessels engaged in the trades that were the backbone of Great Lakes commerce: wood products, grain, iron ore, coal, and passenger/package freight. Two statistical outliers are apparent in Table 4.8. The percentage of Thunder Bay vessels engaged in carrying copper and in commercial fishing is excessively high, indicating that the sample is not representative in these categories. Given the frequency with which copper cargos were transported past Thunder Bay and the amount of commercial fishing activity that occurred in the area, it seems likely that these statistics would be high. However, common sense would indicate that Thunder Bay shipwrecks probably would

comprise less than fifty percent of both commodities. Therefore, these outliers should be ignored pending future expansion of the Great Lakes database.

Interpretation of Table 4.8 is limited also from a small sample size. Unlike the other tables which were based on a sample size of 1,694 shipwrecks, less than 400 of the original sample had information readily available on last cargo. Both primary and secondary sources often provided conflicting data for last cargo, forcing the elimination of doubtful information and shrinking the sample size to less than 350. In addition, some vessels in the sample were abandoned and, therefore, probably had no cargo aboard, further decreasing the numbers to a final sample size of 289.

Table 4.8 Comparison of primary vessel cargos lost at Thunder Bay and a sample of vessels lost on the Great Lakes.

Type of Cargo	# Lost at Thunder Bay	# Lost on the Great Lakes	%Thunder Bay of Great Lakes Sample	% of Great Lakes Sample
Copper	1	2	0.3	0.7
Furs	0	2	0.0	0.7
Grain	7	48	2.4	16.6
Wood Products	9	50	3.1	17.3
Iron Ore/Pig Iron/Taconite	3	24	1.0	8.3
Coal	15	54	5.2	18.7
Petroleum	0	4	0.0	1.4
Stone/Sand/Gravel	2	36	0.7	12.5
Fish	5	6	1.7	2.1
Mixed Cargo/Military	0	29	0.0	10.0
Sulphur	0	2	0.0	0.7
Passenger/Package Freight	3	13	1.0	4.5
Lead/Zinc	0	1	0.0	0.3
Salt	1	9	0.3	3.1
Railroad Cars/Locomotives	0	8	0.0	2.8
Miscellaneous	<u>0</u>	<u>1</u>	<u>0.0</u>	<u>0.3</u>
Total	46	289	15.7%	100.0%

More work needs to be done with regard to sample size to increase reliability and validity of the data.

The number of vessels lost in the Thunder Bay region are listed chronologically and compared with sample Great Lakes losses in Table 4.9. There were few recorded losses of vessels in the vicinity of Thunder Bay during the late 18th and early 19th centuries. Only in the 1830s and

1840s, when the tide of westward movement was approaching full force, did the Thunder Bay region begin to accumulate shipwrecks. As the number of vessels in service above Port Huron increased sharply, so did the number of shipwrecks. The Thunder Bay statistics appear to be reflective of the larger trends in terms, specifically in terms of number of vessels lost each year. As the number of commercial vessels operating on the Great Lakes decreased and safety require-

Table 4.9 Total number of vessels lost at Thunder Bay compared with sample Great Lakes loss statistics by decade, 1760-1979.

Decade	# Lost at Thunder Bay	# Lost on the Great Lakes	%Thunder Bay of Great Lakes Sample	% of Great Lakes Sample
1760-69	0	6	0.0	0.4
1770-79	0	4	0.0	0.2
1780-89	0	3	0.0	0.2
1790-99	0	4	0.0	0.2
1800-09	0	7	0.0	0.4
1810-19	0	17	0.0	1.0
1820-29	0	30	0.0	1.8
1830-39	1	55	0.0	3.2
1840-49	6	124	0.4	7.3
1850-59	5	207	0.3	12.2
1860-69	11	141	0.6	8.3
1870-79	16	179	0.9	10.6
1880-89	13	174	0.8	10.3
1890-99	17	178	1.0	10.5
1900-09	22	189	1.3	11.2
1910-19	16	103	0.9	6.1
1920-29	6	120	0.4	7.1
1930-39	8	63	0.5	3.7
1940-49	2	28	0.1	1.7
1950-59	2	19	0.1	1.1
1960-69	1	33	0.0	1.9
1970-79	<u>0</u>	<u>10</u>	<u>0.0</u>	<u>0.6</u>
Totals	126	1694	7.3%	100.0%

ments became more stringent, the number of shipwrecks decreased. By the 1970s, there were very few shipwrecks on the lakes.

The comparative weaknesses of the shipwreck collection at Thunder Bay include few prototypical vessels (such as the first whaleback or the earliest sidewheeler), few vessels with a long and direct association with nationally important Americans, and few known vessels from the earliest days of lakes navigation. However, Thunder Bay appears to be highly representative of the larger Great Lakes context from the 1840s through the 1970s, as the number and types of vessels and cargos lost there reflect the major trends in Great Lakes shipping.

CONCLUSION

In its role as an impediment, a shelter, and a destination for navigators, the Thunder Bay region has accumulated an impressive array of shipwrecks. Virtually all types of vessels employed on the open lakes regularly passed along this important trade route, and most vessel types are represented in its shipwreck collection. These vessels were engaged at the time of their loss, or sometime during their careers, in nearly every kind of trade. The vessels, therefore, tie Thunder Bay inextricably to Great Lakes' commerce to an extent that may be difficult to equal elsewhere. Most of these trades had a national—and some had an international—significance and spawned uniquely designed vessels. Thunder Bay, therefore, impacted the

design and construction of traditional Great Lakes craft.

The preliminary research and analysis completed as part of Martin (1996) led to six major conclusions regarding the shipwrecks of Thunder Bay: (1) they are representative of the composition of the Great Lakes merchant marine for the period 1840 – 1970; (2) they may be used to study and interpret the various phases of American westward expansion via the Great Lakes; (3) they may be used to study and interpret the growth of the American extraction and use of natural resources; (4) they may be used to discuss various phases of American industrialization; (5) one vessel (*Isaac M. Scott*) provides the vehicle to study and interpret a specific event (the Great Storm of 1913) that had strong repercussions regionally, nationally, and internationally; and (6) they provide important material for the interpretation of American foreign intercontinental trade in the Great Lakes context. All of these areas of study will help to create a better understanding and reinterpretation of events that shaped the broad patterns of American history and culture.

F. MARITIME CULTURAL LANDSCAPE

1. ALPENA COUNTY MARITIME HISTORY

The Thunder Bay National Marine Sanctuary will focus on understanding the maritime cultural landscape. A cultural landscape is a geographic area including both cultural and natural resources, coastal environments, human communities, and related scenery that is associated with historic events, activities or persons, or exhibits other cultural or aesthetic values (NPS 1992). In other words, while the shipwrecks of the Thunder Bay region are the most evident underwater cultural resource, the Thunder Bay National Marine Sanctuary will put the shipwrecks in the larger context of the region's lighthouses, lifesaving stations, shipwreck salvage operations, and other maritime economic activities.

The maritime history of the Thunder Bay region is characterized by the use of, and dependence upon, natural resources. These resources include animal furs, fisheries, forests, farmland, and limestone. The first recorded use of natural

resources for transportation, food supplies, and recreation in Thunder Bay was by Native Americans during the Woodland period. European activity probably originated with the efforts of Native Americans and French traders to locate and trap beaver during the 1600s (Tanner 1987).

Trading and supply boats routinely passed Thunder Bay on their way to outposts at Mackinaw, Sault Ste. Marie, and Green Bay. The *Griffon* in 1679 was the first major European vessel to pass by Thunder Bay, but many more vessels were to follow. The need to transport supplies to northern frontier posts stimulated construction of small brigs, sloops, and schooners. Thunder Bay accumulated a large collection of shipwrecks because of its strategic location along shipping lanes, and because the Bay and nearby islands provided shelter for vessels during inclement weather (Wade 1947; State Historical Soc. of Wis. 1872; Carver 1778).

The following pages summarize maritime history in Alpena County and the Thunder Bay region.



Figure 4.19 Alpena Harbor around the turn of the 20th century.

Jesse Besser Museum

Prehistory and Native American History

There is a lack of knowledge about the earliest inhabitants of the Thunder Bay region. Archaeological evidence indicates that human occupation of southern Michigan began as early as 12,000 years ago, but northern Michigan probably was not occupied by these nomadic hunters until several thousand years later. Stone and copper tools, which may date to about 1,500 BC (Late Archaic), are the oldest artifacts discovered in Alpena County (Michigan History Division 1978:7).

Archaic peoples appeared to survive in a subsistence economy based primarily on hunting and gathering, although they began to utilize fish

sometime around 3,000 BC (Cleland 1982).

Fishing-related artifacts of Archaic peoples found in upper Great Lakes sites include bone or copper fishhooks, gorges and spears, notched pebble net-sinkers, and fishbones (especially sturgeon) (Cleland 1982; Quimby 1960).

Great Lakes fish were of particular importance in the diet of Ottawa and Ojibway peoples inhabiting the northeast lower peninsula of Michigan during the Woodland and historic cultural stages (Figure 4.20). Because of the importance of fish and fishing in determining subsistence and settlement patterns, Cleland (1992, 1982) refers to this way of life as the *inland shore fishery* of the northern Great Lakes.



US Library of Congress

Figure 4.20 Ottawa village at the Straits of Mackinac.



The place name of Thunder Bay has its roots in a popular legend about a Huron suitor of the daughter of an Ottawa Chief (Haltiner 1984):

One night as their canoe rocked lightly on the waters, one of the young Ottawa braves, who was a rejected suitor, was watching them with fiercely jealous eyes. He set out in his canoe and stealthily approached the unsuspecting lovers. As he drew near them he quickly bent his bow and sent an arrow whistling through the air at the heart of his hated rival. The slight noise he made, however attracted the attention of We-no-ka who leaped to her feet in alarm and threw herself in front of her Huron lover – just in time to receive in her own breast the feathered shaft of death. This sudden movement overturned the frail birchen craft and in an instant the Huron brave was trying desperately to save his lover from drowning – not realizing the dreadful calamity that had already overtaken his beloved We-no-ka. It was in vain. They both soon sank beneath the waves. And then a rumble and roar of thunder announced the great displeasure of the Manitou (or great spirit). The assassin, in a frightened frenzy leaped into the lake – his death shriek floating over the waves like the cry of a lost spirit. Then followed peal after peal of thunder – flash after flash of lightning! And the tribes knew the Great Spirit was mightily offended. Nevermore would they trust themselves on the waters of what, from then on, was known as the Bay of Thunder – or Thunder Bay.

Figure 4.21 Naub-Cow-Zo-Win disk representing a "thunderbird" and Thunder Bay's name.

The methods for catching fish included netting, spearing, hook and line, and the construction of a weir. Nets were frequently constructed of nettle stalk fiber or basswood twine and were used as seines or gillnets. The seines were either hand held or pulled by a boat... The gillnet, on the other hand, had a much larger mesh size and was usually set in one place in a lake or river... Built of logs, saplings, and lengths of cord, a weir is an enclosure which prevents fish

from swimming upstream and funnels them into a very narrow opening where fishermen harvested the fish by net or spear (Cornell 1986:81).

Gill nets were used also by the Ojibway to capture whitefish and lake trout on offshore shoals during fall and early winter spawning (Tanner 1987). Densmore (1979) details Ojibway fishing techniques and the processing of fish during the early 1900s in a reprint of a 1929 publication by the Smithsonian Institution.

Ojibway villages in the Thunder Bay region during the 1800s included Mujekewis, Shoshekonawbegoking, and Sagonakato on the north shore of the Bay, and Shingabawassin on the south shore. Native Americans became an integral part of the regional economy in northern Michigan during the late 1800s (Tanner 1987; Clifton et al. 1986). They worked at mining and lumber camps, on survey crews, as stevedores on vessels plying the Great Lakes, and as mail carriers. Fishing remained an important occupation, and some hunting and trapping also continued in this region (Tanner 1987:180). Other Native Americans produced traditional craft items for sale, or found seasonal and factory work in Michigan cities and towns (Cleland 1992; Cornell 1986).

Traditional ways of life and the annual cycle of activities of the inland shore fishery have been altered by modern culture, development, and technology (Clifton et al. 1986). Nonetheless, Ottawa and Ojibway treaty rights to fish for subsistence and commercial purposes on the Great Lakes were reaffirmed by Federal Court decisions in 1979 and 1981 (Cleland 1992; Cornell 1986). Much of northwestern Lake Huron was declared a tribal fishing area based on Federal Court interpretation of the Treaty at Washington (1836). For additional information on current Native American fishing activity and treaty rights in the Thunder Bay area, see the discussion of Past and Present Human Activities on pp. 143 – 145.

There is little physical evidence of the prehistoric and historic Native American ways of life in the Thunder Bay region. “The villages and camps of the early inhabitants are marked only by a scattering of ceramic fragments, chert flakes, and broken or abandoned stone and copper tools. Most of the burial mounds have been destroyed” (Michigan History Division 1978:7). Nevertheless, the heritage of Alpena County’s Ojibway and Ottawa residents provides an important foundation for, and influence on, later historical events of the Thunder Bay region.

European Settlement and the Founding of Alpena

The Thunder Bay region was purchased from Native Americans by the federal government in the Treaty of Saginaw (1819). Although some land was used as a reservation area, European settlement soon pushed Native American villages inland to Mikado and Hubbard Lake (Tanner 1987; May 1980). By the 1850s, the Alpena area became a center for fur trading, fishing, and lumbering.

The area of present-day Alpena County was first surveyed in 1840 and became a county in 1857. The survey of the town of Fremont began in 1856. In 1859, the state legislature changed the name of Fremont to “Alpena,” a Native American word meaning “good partridge country”

(Boulton 1884). The population of the City of Alpena grew steadily from 290 in 1860 to 674 in 1864 and to 2,756 in 1870. In 1873, Alpena County had 4,807 citizens; 3,964 of these citizens lived in the City of Alpena. Most of the early settlers in the Alpena area were from New York and New England, but the lumber camps later attracted Swedes, Norwegians, and French-Canadians to the area (May 1980; Holzhueller 1974; Boulton 1884).

Lighthouses and Life-Saving Stations

The original Presque Isle Lighthouse was built in 1840 and is located in Presque Isle Harbor. Another Presque Isle Lighthouse was constructed in 1870 to replace the old station. This more recent structure is a conical brick tower standing 109 feet high. A lightkeeper's house of Dutch Colonial construction is attached to the lighthouse.



Figure 4.22 (left) "Birds-eye" view of the City of Alpena in 1880, including lumber docks to the left of the Thunder Bay River mouth and log booms to the right of the river mouth.

Figure 4.23 (below) View of Alpena residences and businesses along the Thunder Bay River in 1886.



The 1870 lighthouse is situated in a public park maintained by Presque Isle Township (Clifford 1994). The light at the newer Presque Isle Lighthouse is still operational.

The Middle Island Lighthouse was built in 1905. The 71 foot tower is made of brick and painted white with an orange band in the middle (Clifford 1994). The light continues to be operational.

A lighthouse 40 feet in height was in use on Thunder Bay Island by 1837. The tower was heightened by ten feet in 1857 and is still in operation (Hyde 1986; Boulton 1884).

In 1875, a temporary light was placed on pilings at the mouth of the Thunder Bay River. In 1877, a wooden lighthouse was erected on a crib at the north-end pier. This light was reconstructed in 1888 and replaced by a steel structure in 1914 (Hyde 1986; U.S. Lighthouse Board 1903,



Michigan Maritime Museum

Figure 4.24 Thunder Bay Island Lighthouse complex.



Michigan Maritime Museum

Figure 4.25 Thunder Bay Island Life-Saving Station.



Michigan Maritime Museum

Figure 4.26 Lifeboat drills of the Thunder Bay Island lifesaving crew.

1877, 1875). U.S. Weather Station #85 was opened at Alpena in 1872 to record atmospheric conditions, provide accurate weather reporting, and convey cautionary signals for use by mariners (NOAA 1872).

Despite the development of these navigational aids, the frequency of shipwrecks in the vicinity of Thunder Bay led to the establishment of U.S. Life-Saving Service Stations at Thunder Bay Island in 1876 and Middle Island by the 1880s.

These facilities were manned by crews that trained extensively in the use of rescue boats and other lifesaving equipment. They were among the busiest stations on Lake Huron, assisting hundreds of vessels every year and saving thousands of lives. Starting in 1915, the U.S. Life-Saving, Lighthouse, and Revenue Cutter Services were consolidated to form the U.S. Coast Guard (O'Brien 1976). A small U.S. Coast Guard station continues to operate in Alpena .



Figure 4.27 Beach apparatus manned by the Thunder Bay Island lifesaving crew.

Michigan Maritime Museum

Furs

By the early 19th century, the trapping of beaver by Native Americans and Europeans had reached virtually every corner of what is now the State of Michigan. Furs usually were trapped by Native Americans and exchanged for manufactured goods at a trading post such as Mackinaw. American traders sent the furs down Lake Huron in canoes and later in sailing vessels to warehouses in Detroit. The furs were then shipped to Europe via Montreal or New York (May 1980). The American Fur Company and the Northwest Fur Company had profitable businesses in furs during the early 19th century, but by the 1830s the supply of animal pelts was reduced drastically by over-trapping. The two companies then diversified their trade by branch-

ing into commercial fishing (American Historical Association 1945:375).

Fisheries

W.F. Cullings, who is believed to be the first white resident of the Thunder Bay region, began a fishing camp on Thunder Bay Island in 1835. Some evidence suggests that Cullings was an employee of the American Fur Company and had established himself on the island on the company's account rather than his own, but this is unclear (Holzhueter 1974; Boulton 1884). Later, a few buildings were constructed on the present site of the City of Alpena by hunters from Mackinaw; Walter Scott erected a fishhouse and trading post near these buildings.



Michigan Historical Center

Figure 4.28 Great Lakes commercial fishing operation using mackinac boats, probably mid to late 1800s. This may resemble early operations on Thunder Bay Island and Sugar Island.

By the 1840s, both Thunder Bay Island and Sugar Island were used extensively for fishing operations (Boulton 1884). In 1846, Presque Isle and Thunder Bay fishing operations exported a total of 12,000 barrels of fish, equaling over 15% of the American and Canadian commercial fisheries of Lakes Huron, Michigan, and Superior (*Port Huron Observer*, July 31, 1847).

Lumbering, settlement, and port development all impacted the nearshore fisheries. River drives during the lumbering era damaged the river bottom; waste cuttings and sawdust covered the bottom and caused deoxygenation through decay processes. The draining of swamps, filling of shoreline areas, and dredging of navigation channels further diminished the nearshore aquatic habitat (Michigan DNR 1987; Smith

1972). By 1886, fish stocks in the area may have decreased by two-thirds, as witnessed by Williams, Plough, and Campbell, all of whom operated fisheries between Whitefish Point and North Point (Goode 1887; Boulton 1884:193).

The depletion of fish stocks led to the creation of a federal program for fish planting. In 1882, a United States fish hatchery was established in a building located on Water Street, east of First Street in Alpena. The hatchery was moved in 1928 to Park Place near the City Hall, and was closed in 1933 when its duties were transferred to other facilities (Haltiner 1986).

The extent of the Canadian and American Lake Huron commercial fisheries during 1879 – 1969 was estimated by Baldwin et al. (1979)



Michigan Maritime Museum

Figure 4.29 Commercial fishing operations in Alpena during the 1940s.

(Table 4.10). Although early documentation of fish catches were poor, Lake Huron provided up to 18.7% of Great Lakes production until the

1940s, when exotic species and overfishing contributed to a decline in Lake Huron fisheries production (Table 4.10).

Table 4.10 Lake Huron and Great Lakes commercial fisheries production (in tons) (U.S. and Canadian) 1879-1969.

Year	Lake Huron	Great Lakes	% of Great Lakes Fisheries Production
1879	11,402	79,057	14.4%
1889	27,149	146,430	18.5%
1899	24,597	146,617	16.8%
1909	--	--	
1919	21,861	117,116	18.7%
1929	16,319	98,712	16.5%
1939	19,777	111,188	17.8%
1949	8,953	111,912	8.0%
1959	7,641	104,528	7.3%
1969	5,226	123,468	4.2%

Source: Baldwin et al. (1979:186-187)

Based on information collected between 1919 and 1926, Thunder Bay was second only to Saginaw Bay in American fish production on Lake Huron. Gillnets were first used on Lake Huron at Alpena around 1835, and chubs were first harvested there in 1902 (Koelz 1926). Captain A.E. Persons asserted that he introduced the steam tug to the Great Lakes fisheries in 1875 at Alpena and revolutionized the entire industry (McCullough 1989). Fish harvested by firms with camps on the north shore of Thunder Bay, Crooked Island, Sugar Island, and Ossineke were shipped to Detroit, Buffalo, or New York City (Cross 1992; Haltiner 1986).

Commercial ice houses in Alpena shipped ice to Detroit, Toledo, and Cleveland (*Alpena Argus*, January 11, 1893:3). This industry was closely tied to commercial fishing because local firms

such as the Alpena Fish Company used ice from the Thunder Bay River to preserve fish (*Alpena Argus*, January 25, 1893:3).

Today, the primary groups using the Lake Huron fisheries are recreational anglers, Native American commercial fishers, and state licensed commercial fishers. The popularity of recreational fishing increased after the collapse of commercial fish stocks by the late 1940s. Opportunities for recreational fishing expanded in the late 1960s with the introduction of salmon in the Great Lakes. The decline in the economic impact of commercial fishing is illustrated by the decline in numbers of people employed in commercial fishing on the Great Lakes from a total of 6,901 in 1930 to 1,180 in 1975. By comparison, about 2.8 million recreational anglers were active on the Great Lakes in 1975 (U.S. Comptroller General 1977).



Alcona Historical Society

Figure 4.30 Ice-making operations on the Thunder Bay River in Alpena.

Lumbering

The first sawmill at present-day Alpena was erected by Jonathan Birch in 1836 on the Thunder Bay River, but hostilities with Native Americans forced him to move to Sulphur Island for a time, before transferring his operation to Devils River. The first sustained lumbering operation in the Thunder Bay River area began

in 1859, when Lockwood & Minor shipped a load of lumber from Alpena. Soon, other lumber mills entered operation, and production increased rapidly as the U.S. Civil War and growth in eastern and western cities created an enormous demand for lumber. By the late 19th century, there were at least a dozen large establishments producing lumber for export (Boulton 1884; Sandborn 1884).



Jesse Besser Museum

Figure 4.31 Log sorting ponds at the mouth of the Thunder Bay River in 1894.



Jesse Besser Museum

Figure 4.32 Churchill lumber mill in Alpena at the turn of the 19th century.



Jesse Besser Museum

Figure 4.33 Loading cedar in Alpena with a horsepower elevator in 1889.

Timber for the mills was cut locally at first. As nearby supplies were depleted, the harvesting activities moved inland along the Thunder Bay River and its tributaries, which served as the primary means of transporting the cut timber. By the 1890s, timber in the region was exhausted, so additional timber was imported from Canada in huge rafts.

Logs were collected, sorted, and fed to the respective sawmills by the Thunder Bay River Boom Company (*Alpena Argus*, January 11, 1893:3). The need for sorting and holding ponds and booms for logs led to the creation of dock systems along the Thunder Bay River and at the river mouth. Logs were cut into lumber, shingles, or lath, and then stacked on the docks for shipment by boat to many Great Lakes cities. Alpena's era of lumber mills came to an end in 1921, when the F.W. Gilchrist mill closed its doors (Havinghurst 1949).



Jesse Besser Museum

Figure 4.34 Michigan Alkaline Company quarry.

Quarries

Limestone lies close to the surface and has been mined heavily in the area of Rogers City and the City of Alpena. Rogers City is known as the site of the world's largest limestone quarry (May 1980). Although the quarrying and use of limestone in Michigan is known to have occurred early in the 19th century, it gained prominence in the City of Alpena at the time when lumbering was in decline.

Local limestone began to be used in building trades and in the production of cement. In 1901, the Huron Portland Cement Company began operation on the north shore of Thunder Bay (Haltiner 1986; May 1980) (Figure 4.35). Limestone was used at the Michigan Alkali Company plant in the City of Alpena as early as 1903 to make soda ash for glass manufacturing.



Jesse Besser Museum

Figure 4.35 Huron Portland Cement Company in 1917.

However, soda ash production created so much waste that the company ventured into cement production.

The Huron Portland Cement Company began cement production in 1907. The plant grew steadily, producing over 900,000 barrels of cement with six kilns in 1910, and became the largest cement-producer in the world. LaFarge Corporation purchased the Huron Portland

Cement Company in 1986 and continues cement production within the City of Alpena (Just, personal communication 1996; Haltiner 1986; May 1980).

The Great Lakes Stone and Lime Company of Rockport in northern Alpena County began operation in 1913 and provided rock for building and paving materials. The company is no longer in business.



Figure 4.36 Loading dock of the Michigan Alkaline Company in 1918.

Jesse Besser Museum

Shipwreck Salvage Operations

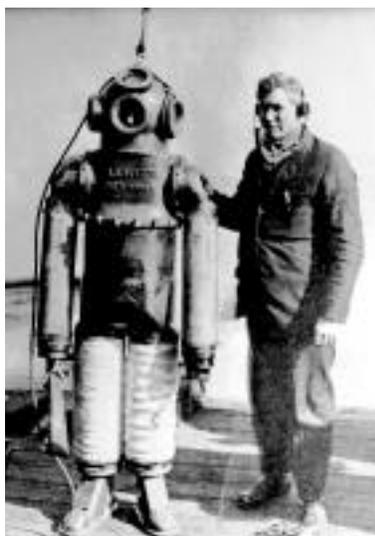
The City of Alpena became a base of operations for wrecking and salvage firms because of the frequent shipwrecks in the Thunder Bay region. Wreckers quickly descended on grounded or sunken vessels to recover the vessels or as much removable property as possible before the wrecks disintegrated.

Jim and Tom Reid, notable Michigan salvors of the early 1900s, began their careers in the wrecking business at Alpena. The Reids were involved also in the log rafting business between Georgian Bay and Michigan that provided logs for the Alpena lumber mills (Haltiner 1986; Doner 1958).



Jesse Besser Museum

(top) Figure 4.37 Salvage tug *James Reid* assisting wrecked steamer *I.W. Nicholas* near the Thunder Bay River in 1913.



Jesse Besser Museum

(left) Figure 4.38 Commercial diving suit used in salvage of steamer *Pewabic* in 1917.

2. ALCONA COUNTY MARITIME HISTORY

The maritime history of Alcona County followed much the same pattern as Alpena County to the north. Commercial fishing, lumbering, and other maritime trades shaped these areas and the communities founded within them. Alcona and Alpena Counties are close geographically (Alcona County was part of Alpena County until 1869), but they do not share Thunder Bay. Alcona County's coastline begins about two miles south of South Point, the southern boundary of Thunder Bay (NOAA 1976; Reynolds 1883).

Alcona County includes a number of coastal communities. From north to south these communities include Black River (4.5 miles south of South Point), Alcona (also known as the "Cove" – now a ghost town – about four miles south of Black River), Harrisville (twelve miles south of Black River), Springport (formerly known as High Banks and South Harrisville – a ghost town – about one mile south of Harrisville), and

Greenbush (formerly known as "Sliding Banks," about six miles south of Harrisville) (NOAA 1976; Reynolds 1883). Communities established at Black River Island and Sturgeon Point during the 1800s no longer exist. At first these communities were dependent upon supplies from outside, but over time they became self-reliant (Reynolds 1883).

Besides the possible incursion of the fur trader, the first permanent white settlers in what is now Alcona County were commercial fishermen. Black River, Black River Island, Sturgeon Point, Harrisville (including Springport), and Greenbush began as commercial fishing bases during the 1840s. By the mid-1880s, the commercial fishery of Alcona County was centered in the vicinity of Alcona (Reynolds 1883). Small sail- and oar-powered fishing craft of this era (i.e., 1840s – 1890s) reportedly were grounded in Alcona County, but there is no indication of whether any of these vessels became total losses.



Alcona Historical Society

Figure 4.39 Sidewheeler *Marine City* burned and sank at Sturgeon Point in 1880.

The shipment of salted fish in barrels soon gave rise to the manufacture of barrel staves, a predecessor of the bulk timber trade that came to dominate regional industry in the late 19th century (Reynolds 1883). As the value of native timber came to exceed the value of fishery production, some commercial fishermen switched to lumbering. In 1854, commercial fishermen Holden and Davison purchased forested land and started a mill at Harrisville, thus initiating the lumbering period.

Later, lumbermen started large-scale operations that shipped wood products from Black River, Alcona, and Harrisville to ports throughout the Great Lakes. Alcona County lumbering firms included Holden and Davison; Harris and Sons; Weston, Colwell and Company; Johnston, Haynes and Company; James Beard and Company; and Alger, Smith and Company of Black River, who were especially well known for their boat masts and spars (Gauthier *n.d.*, Prescott 1937, Reynolds 1883).



Figure 4.40 (left) Gillnet fishermen with lake trout at Black River (probably 1930s).

Figure 4.41 (below right) Commercial fishing through the ice near Black River (probably 1930s).

Figure 4.42 (below left) Small tug towing log boom near Black River (probably 1930s).

Alcona Historical Society



Alcona Historical Society



Alcona Historical Society

Much of Alcona County's virgin timber was cut during the late 1800s and shipped to markets in Chicago, where it was sent westward to build the cities of the Great Plains. The tow barge and log rafting systems (i.e., logs enclosed by a large boom which was towed by a tug) were extensively employed to transport local timber to market until railroads superseded them around the turn of the century.

Most of the early docks and warehouses were constructed to service the commercial fishing

and lumbering interests of Alcona County (Reynolds 1883). Public facilities, including the U. S. Light Station and the U.S. Life-Saving Service Station at Sturgeon Point, were built to protect or enhance Great Lakes commercial shipping (NOAA 1976, Gauthier *n.d.*). The U.S. Life-Saving Service Station at Sturgeon Point was built in 1876 and later deactivated and dismantled.

The Sturgeon Point Light Station was constructed in 1869. The original light, visible for 16



Alcona Historical Society

Figure 4.43 (above) Sturgeon Point Light Station and Life-Saving Station (probably in 1900-1910).

Figure 4.44 (right) Sturgeon Point Lighthouse as it stands today (1996).



Hawk Tolson

miles, was replaced by an acetylene lamp in 1912. The conical brick light tower stands 68 feet high. The adjoining Cape Cod style brick building served as the lightkeeper's house (Clifford 1994). Although the light is no longer operational, the light tower and lightkeeper's house are presently adapted as a maritime museum by the Alcona Historical Society. The Sturgeon Point Light Station was listed on the National Register of Historic Places in 1969.

Agriculture became an important economic force by the late 1800s, and waterborne transportation was used to move produce to market, as well as to import necessary industrial resources like coal and salt to Alcona County. A number of commercial fishermen became farmers (Reynolds 1883).

By the early 1900s, the waterborne commerce of Alcona County was largely confined to the passing of vessels engaged in bulk mineral transportation (e.g., coal, salt, iron ore, copper). The major shipping routes were located only a few miles off the Michigan coast of Lake Huron,

such that virtually every type of commercial vessel passed by Alcona County. This remains the case to this day.

The management emphasis of the Michigan Great Lakes changed from commercial fishing to recreation during the 1950s – 1960s. A harbor-of-refuge was completed at Harrisville in 1959 to promote recreational boating and fishing.

CONCLUSION

The maritime history of Alcona County paralleled that of Alpena County through the early 20th century. Thereafter, Alcona County became separated from the mainstream commercial shipping industry as harbor improvements failed to keep up with the growing size of Great Lakes bulk carriers. In the commercial fishing and lumbering eras, Alcona County has the same claim to historical significance as does its neighbor, Alpena County, to the north.

3. PAST AND PRESENT HUMAN ACTIVITIES

Commercial/Industrial Enterprise

COMMERCIAL FISHING

○ HISTORY

Great Lakes fish have been important in the diet of Ottawa and Ojibway peoples inhabiting northeast lower Michigan since the development of the *inland shore fishery* (Cleland 1992). “The use of gillnets set on off-shore shoals for the capture of whitefish and lake trout constituted the heart of this *inland shore fishery*” (Tanner 1987:19). The Thunder Bay region of Lake Huron has a long history of Native American subsistence and commercial fishing.

European settlers began to arrive in the early 1800s and soon engaged in commercial fishing using a number of methods. “Gillnets appeared in the vicinity of Alpena about 1835 and within the next 15 years were commonly used in the deeper open waters of the lake. Seines, fyke nets, pound nets, and trap nets were all being fished by 1900” (Berst and Spangler 1972:879). The Lake Huron commercial fishery, through about 1940, was composed primarily of whitefish, lake trout, cisco, walleye, yellow perch, and suckers.

During 1940 – 1965, commercial catches decreased dramatically, especially lake trout and cisco (Berst and Spangler 1972). Lake Huron whitefish landings “fluctuated between 900 and 1,400 metric tons from 1900 to 1930, increased

to 2,500 tons in 1932, then declined to 113 tons by 1945” (Berst and Spangler 1972:882).

○ PRESENT DAY

Today, the Thunder Bay region of Lake Huron is considered one of the most lucrative whitefish fishing grounds in the Great Lakes (Johnson, personal communication 1992). Currently, whitefish is the only commercially harvested species within the Thunder Bay region.

The Michigan Department of Natural Resources (DNR) Fisheries Division authorizes two annual research permits to commercial fishermen for the harvest of whitefish within the Thunder Bay region of Lake Huron. Results of the research will be used to assist in evaluating the future role of commercial fishing in this area (Michigan DNR, personal communication 1996).

○ NATIVE AMERICAN FISHING

The Sanctuary boundary includes waters covered by both the 1819 Treaty of Saginaw and the 1836 Treaty of Washington.

In the Treaty of Washington (Treaty of 1836), the Chippewa and the Ottawa Native American tribes ceded certain lands and waters to the U.S. Government. They did, however, “expressly reserve their fishing rights” in certain Great Lakes waters, including part of northwestern Lake Huron. These treaty waters are delineated with the line established by the 1819 Treaty of Saginaw to the mouth of the Thunder Bay River,

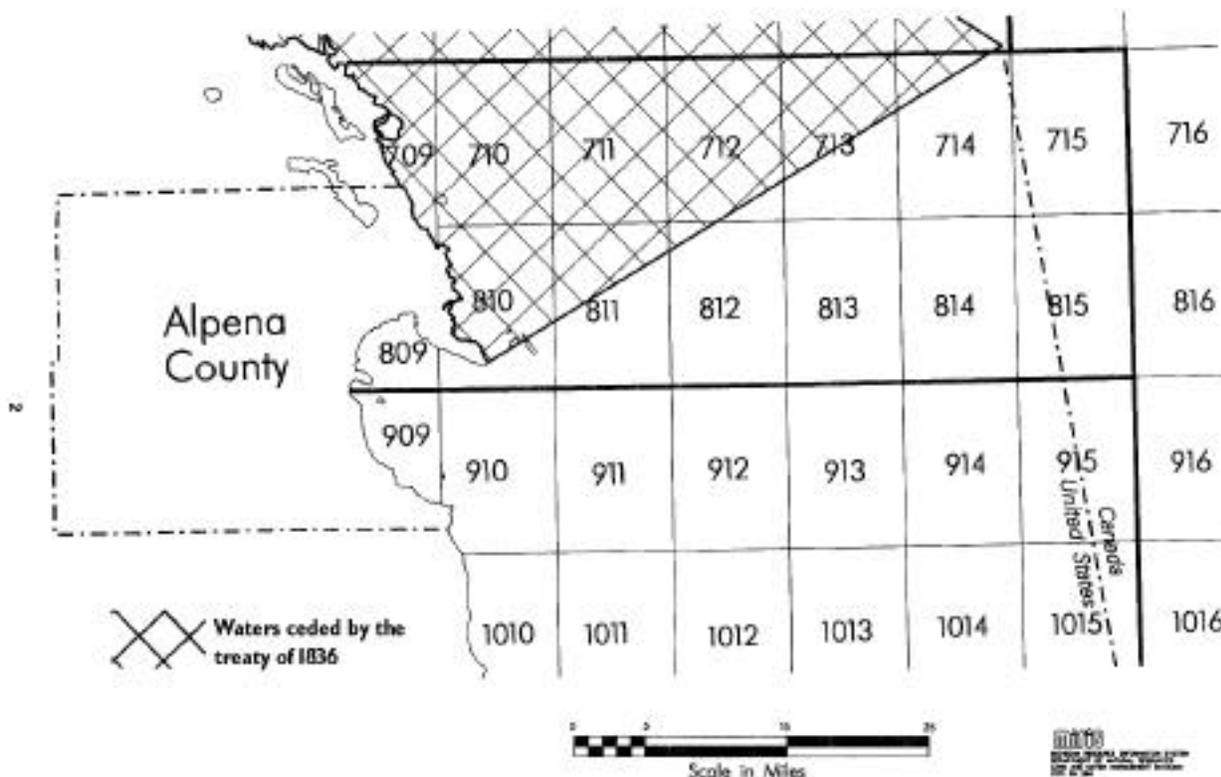


Figure 4.45 State of Michigan commercial fishing zones and Lake Huron waters ceded by the Treaty of Washington (1836) for tribal licensed fishing, as reflected in the 1985 Consent Agreement.

and then northeast to the boundary line in Lake Huron between the United States and Canada, set in the Treaty of 1936.¹

A number of court cases have determined Native American fishing rights under the Treaty of 1836 (Table 4.11). These fishing rights are currently subject to the U.S. District Court-facilitated “Agreement for Entry of Consent Order of 1985” (1985 Consent Agreement). Under the 1985 Consent Agreement, the Bay Mills Indian Community, the Grand Traverse Band of Ottawa and Chippewa Indians, and the Sault Ste. Marie Tribe of Chippewa Indians are prohibited from commercial fishing in certain areas of Lake Huron, including the area south of Hammond Point near Rogers City. However, starting in 1998 and extending no later than

December 1999, one Native American fisherman is licensed to conduct a “fishery assessment” to help determine future catch limits. Native Americans use gill nets, which are placed along the lake bottom like a fence. The nets in the fishery assessment are approximately 1000 feet in length, and each end is identified with a floating buoy.

The United States now recognizes two additional successors to the Treaty of 1836: the Little Traverse Bay Band of Odawa Indians and the Little River Band of Ottawa Indians.

¹ The line that marks the southern boundary of the treaty waters may be questioned by the State in the renegotiation of the 1985 Consent Agreement.

Table 4.11 A Chronology: Native American Fishing and the State of Michigan.

1836	In the Treaty of Washington (Treaty of 1836), the Chippewa and Ottawa Tribes ceded certain lands and waters to the United States. In it, the tribes reserved fishing rights in, among other waters, part of Lake Huron's Thunder Bay.
1930	In <i>People vs. Chosa</i> (252 Mich. 154), the Michigan Supreme Court declared that "Native Americans have no special hunting and fishing rights under state regulations."
1971	In <i>People v. Jondreau</i> (384 Mich. 539), "the Michigan State Supreme Court reversed itself from the 1930 rulings, stating that the Treaties signed in 1836 and 1855 did retain some Indians' fishing rights free from state regulation."
1976	In <i>People v. LeBlanc</i> , (399 Mich. 31), the Supreme Court of Michigan "overturned the conviction of A.B. LeBlanc, a full-blooded Chippewa Indian, ruling that the treaty clearly established the right to tribal fishing on and off the reservation area and that right had not been extinguished."
1979	In <i>United States v. Michigan</i> , the United States District Court for the Western District of Michigan ruled that the Chippewa and Ottawa tribes have "unique, exclusive, off-reservation rights to engage in gill net fishing...despite Michigan laws to the contrary." (United States v. Michigan 623 F.2d 448 at 3).
1981	In <i>United States v. Michigan</i> , the U.S. Court of Appeals for the Sixth Circuit concluded, "the Treaty of 1836 provided for the off-reservation treaty rights." It sent the case back to the trial court to make the determination whether or not the state could regulate gill-net fishing "upon a finding of necessity, irreparable harm and the absence of effective Indian tribal self-regulation" (<i>United States v. Michigan</i> , 653 F.2d 277 at 279).
1985	The parties of <i>United States v. Michigan</i> signed an Entry of Consent Order, which is in effect until 2000. The Order "divided treaty waters into geographic zones, designating some areas as State zones, some as tribal zones and some areas as lake trout reproduction."

○ FISHERIES MANAGEMENT

The Michigan DNR Fisheries Division has the responsibility to “protect and enhance the public trust in populations and habitat of fishes and other forms of aquatic life, and promote optimum use of these resources for benefit of the people of Michigan” (Fisheries Division 1991:5).

The State of Michigan is a member of the Great Lakes Fishery Commission (GLFC) that both develops coordinated programs of research and recommends management actions on a regional basis (GLFC 1992). A joint strategic plan for management of Great Lakes fisheries was developed by state and federal agencies in 1980 (GLFC 1980); the strategic plan and associated publications provide guidelines for fish habitat management and planning (Dochoda 1988; GLFC 1987). Information relating to the condition of fisheries habitat, habitat management and planning, and other dimensions of fisheries management are developed by Lake Committees and are published as annual reports. The state, federal, provincial, and tribal governments of Michigan and Ontario have completed a set of fish community goals that will serve as an umbrella for coordinated fishery planning.

Fisheries stocking programs for Lake Huron are conducted by the U.S. Fish and Wildlife Service (USFWS), the Michigan DNR, and by several Native American tribes. The Michigan DNR stocks a variety of species in the Thunder Bay region. Brown trout stocked in Lake Huron near Alpena are reared at the Thompson hatch-

ery in the Upper Peninsula and the Oden hatchery near Petoskey. Walleye, which are stocked regularly in the Thunder Bay River and Thunder Bay, are reared at the James Pond Hatchery in Alpena. The James Pond is a wall-eye rearing pond managed jointly by the Michigan DNR and local angling groups.

SHIPPING AND NAVIGATION

○ HISTORY

In the 19th century, communication with the outside world was conducted primarily through vessels that put in at either the City of Alpena or Thunder Bay Island. In 1859, the steamer *Colombia* made Alpena a semi-regular stop as the lumber mills spurred more commercial activity (Haltiner 1986). Even then, access to the City of Alpena was limited by a sand bar at the mouth of the Thunder Bay River that prohibited entry of vessels drawing more than six and a half feet. Larger vessels loaded and unloaded offshore using tugs, scows, and rafts (Boulton 1884).

In 1865, Devils River (later, Ossineke) had only three feet of water over the nearshore sand bar, restricting access to the mill and dock. As a result, cargo was shipped from Morris' Dock near Nine Mile Point. Paxton's or McDonald Bay, between Sugar and Thunder Bay Islands, was used for the anchorage of vessels, as was the area between the mainland and Sugar and Middle Islands (Boulton 1884; Barnet 1874).

Waterborne trade from the City of Alpena in

1874 totaled 492 vessels of 159,072 gross tons, and employed 6,492 individuals. These vessels cleared the local customs house with cargoes of cedar posts, house blocks, lath, shingles, lumber, fish, merchandise, ice, pickets, and bark. The City of Alpena developed a navigation channel of 16 foot depth extending a mile above the harbor mouth by 1889 (U.S. Department of War 1889). In 1897, 1,245 vessels totaling 353,982 gross tons cleared the port. The City of Alpena was described as the most convenient shipping port for agricultural products and manufactured goods for locations up to 50 miles inland (Mansfield 1899; Boulton 1884).

The slow development of an adequately dredged and maintained river channel, in combination with the increasing number of vessels visiting the City of Alpena, led to the creation of an intricate series of loading and unloading docks. These docks altered the shoreline and by 1900, had extended the waterfront by at least 50 feet into Thunder Bay (Boulton 1884). Alterations to the shoreline north of the City of Alpena began around 1901 as the cement companies established loading docks.

Dependence on waterborne communications left the community so isolated during the winter that the state legislature passed a bill in 1865 to build the Duncan, Alpena, and AuSable River State Road (Boulton 1884:181). Railroads reached the City of Alpena in 1886 beginning with the Detroit, Bay City, and Alpena Railroad. In 1918, the Boyne City, Gaylord, and Alpena Railroad further strengthened Alpena's connec-

tion with other Michigan cities (Haltiner 1986). Despite the strong dependence of the Alpena community upon waterborne commerce, there was surprisingly little shipbuilding activity. Except for some small boat construction and repair work, Alpena does not seem to have maintained a shipyard capable of building or drydocking large vessels.

The post-lumbering era of the early 1900s brought the decline of Alpena's waterfront. The docks deteriorated and became hazards to navigation. In 1923 – 1924, a stone breakwater was constructed, and in 1937, the growing recreational use of Thunder Bay and the River led to dredging of a yacht basin (Haltiner 1986).

Other Alpena County ports developed less quickly. A small breakwater was built in Ossineke, but the controlling depth remained at four feet in 1981. Located on the northern boundary of Alpena County, Rockport was used by the Kelley Island Lime and Transport Company beginning in 1913. By 1985, Rockport was used primarily by recreational anglers (NOAA 1985; U.S. Army Corps of Engineers 1940).

○ *PRESENT DAY*

Upbound and downbound commercial shipping lanes on Lake Huron are located within the Thunder Bay region. The shipping lanes begin approximately 5 miles due east of the Middle Island Light, 5 1/2 miles due east of the Thunder Bay mid-channel buoy, and 6 miles due east of the South Point daymark (NOS 1990, 1988). A



Figure 4.46 Loading cement into a bulk freighter at LaFarge Corporation facilities in Alpena.

Lake Carriers Association

federal navigation channel corresponding to a course of 304 degrees from the Thunder Bay mid-channel buoy is maintained by the U.S. Army Corps of Engineers for use by commercial and recreational boat traffic entering and departing Alpena. Traditionally, the commercial shipping season has lasted from April until early December (Barry 1972).

Commercial shipping to and from Alpena is associated predominantly with the cement producing operations of LaFarge Corporation. Inland Lakes Management of Alpena, under contract to LaFarge Corporation, normally operates four bulk carriers that transport cement from Alpena to distribution plants throughout the Great Lakes region (Figure 4.46). Two of these vessels each carry approximately 8,000 tons of cargo per trip out of Alpena, and the other two vessels each carry approximately 11,000 tons of cargo per trip out of Alpena. These vessels then

return to Alpena empty ("light"). In total, the cement bulk carriers complete approximately 60 round trips per year (120 transits). In addition, approximately 20 loads of coal per year (40 transits) are delivered to LaFarge Corporation. Other uses of Thunder Bay by commercial vessels include occasional deliveries of coal to Abitibi-Price Corporation, fuel delivery by Alpena Oil Company, salt delivery by Goodrich Everett, and visitation on an irregular basis by boats seeking a safe haven from storms on Lake Huron (Ghiata, personal communication 1992).

○ OIL SPILL CONTINGENCY PLANS

In the event of a pollution or marine disaster, the U.S. Coast Guard Sault Ste. Marie, MI Area Contingency Plan provides for a well-coordinated, multi-organizational response at the local level to protect human and natural resources threatened by an actual or anticipated pollution

incident. The Marine Safety Office in Sault Ste. Marie, Michigan has planning and emergency response jurisdiction for the area between the Thunder Bay River to the turning basin adjacent to Fletcher Paper Company (U.S. Coast Guard 1997).

In Thunder Bay, the prevalent environmental threat to the area is oil spills. Based on historical trends, the size of the spill would most likely be less than 100 gallons, but may reach 1000 gallons in an extreme case. The potential source of the oil pollution may be a harbor tug, dredge, passenger vessel or recreational boat (U.S. Coast Guard 1997).

○ AID TO NAVIGATION

Aids to navigation within the Thunder Bay region are owned and maintained by the U.S. Coast Guard (USCG), private organizations, or individuals. Nautical charts numbered 14684 (NOS 1990) and 14689 (NOS 1988) are available to commercial operators and recreational boaters navigating the Thunder Bay region of Lake Huron.

USCG floating aids to navigation are usually placed on location by the 1st of April and are removed by the 1st of December by USCG Cutter Bramble, a 180-foot buoy tender stationed in Port Huron, Michigan (Betters, personal communication 1992). USCG Cutter Bramble is under direction of the 9th Coast Guard District in Cleveland, Ohio. All USCG aids to navigation within the Thunder Bay region

are maintained by USCG Station St. Ignace. USCG Station St. Ignace is under direction of USCG Group Sault Ste. Marie.

○ DREDGING

The federal navigation channel at Alpena begins at the 24-foot depth contour in Thunder Bay and extends to the turning basin about 0.75 miles upstream from the mouth of the Thunder Bay River, for a total length of 2.5 miles (U.S. Army Corps of Engineers 1984). Maintenance dredging is performed periodically to remove sediments (silt, detritus, sand and clay) that accumulate in the channel. Since at least 1963, these sediments, known as clean dredged material, have been deposited in the open waters of Thunder Bay. The disposal site is approximately 3.5 miles west of the Thunder Bay junction buoy on a course of 282 degrees, and measures 2,600 feet by 2,600 feet (U.S. Army Corps of Engineers 1984, 1985).

AVIATION

The Alpena County Regional Airport serves the northeast Michigan counties of Alpena, Presque Isle, Montmorency and Alcona. The airport is

...an all-weather facility capable of handling virtually all commercial and general aviation aircraft types. It has two runways, a rotating beacon, a lighted wind indicator, hanger space, two fixed based operators [i.e., Aviation

North and Welch Aviation] who provide aviation services, a passenger terminal, and automobile rentals. The control tower is operated by Air National Guard aircraft traffic controllers and is supplemented by full navigational aids including a modern instrument landing system. In addition, a fully computerized National Weather Service office is located in the main terminal building (Alpena County Regional Airport 1992).

Mesaba Airlines, in conjunction with Northwest/KLM, provides scheduled passenger service to and from Detroit and Sault Ste. Marie, with connections in Detroit to other destinations. Aviation North provides air charter services, aircraft maintenance, fueling, flight instruction, and ground handling services to all transient and based general aviation aircraft.

OIL AND GAS DEVELOPMENT

Michigan Public Act 61 of 1939 created a permit system for the drilling of oil and gas wells that is administered by the Geological Survey Division of the Michigan DNR. The Michigan DNR is responsible for managing state land and mineral resources "to ensure protection and enhancement of the public trust" (Michigan DNR 1982). The DNR is prohibited by Part 325, Great Lakes Submerged Lands of Public Act 451 (1994), as

amended, from entering into a lease or deed of unpatented Great Lakes bottomlands that permits drilling for oil and gas, unless "all drilling operations originate from locations above and inland of the ordinary high-water mark." However, leases can be obtained for upland area drilling sites that remove oil and gas from locations under the bottomlands. There are currently no active leases for the coastal zone of Alpena County.

As a constraint to upland drilling,

...the State Oil & Gas Lease specifically addresses the issue that no wells shall be drilled in wetlands, habitat identified as crucial to the survival of an endangered species, or areas of historical or archaeological significance. In areas having special wildlife, environmental and/or recreational significance where drilling may occur, the lease provides for negotiation of a drilling plan to minimize impacts . . . the lease also provides for a 1/4 mile setback of wells from the Great Lakes, unless an exception is approved by the Michigan Natural Resources Commission (NRC) (Michigan NRC 1989).

REGIONAL INDUSTRIAL DEVELOPMENT

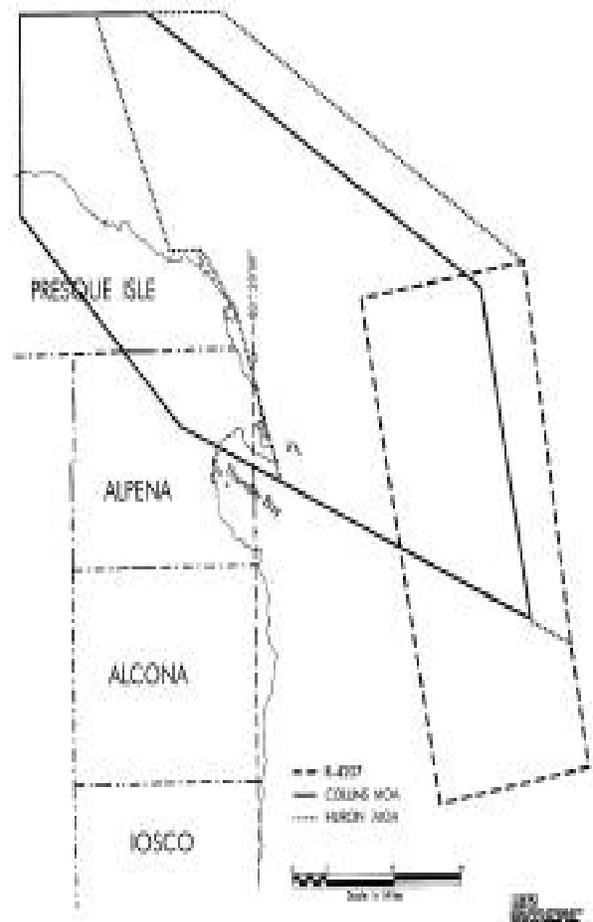
Industrial development opportunities identified for Alpena, Michigan include the manufacturing of wood furniture and fixtures, manifold business forms, architectural and ornamental metal work, commercial lighting fixtures, and sporting and athletic goods. Non-manufacturing opportunities include services such as hotels, rooming houses, camps and other lodging places, membership sports and recreation clubs, nursing and personal care facilities, and home health care services. Other development opportunities that were identified include: industries with high demand for water availability; industries with a high demand for water transportation; industries associated with commercial fishing, recreational boating, and aquaculture products; industries associated with tourism and recreation; industries related to health care and health care services; and retail industries (Midwest Research Institute 1988).

Military Aviation

The Phelps-Collins Air National Guard Base (ANGB) is an adjunct operation of the Alpena County Regional Airport and has been used for military training since 1953. The mission of the Base is to improve the nation's defense capability and the readiness of specialized air units for a variety of military and civilian purposes. Phelps-Collins ANGB coordinates its operations with other military bases in Michigan and elsewhere (Alpena County Regional Airport 1992).

A large portion of the Thunder Bay region is below two of the ANGB Military Operating Areas (MOAs), adjacent to a restricted area, and traversed by a bi-directional Visual Low Altitude Training Route (VR) (Figure 4.47). In addition, a proposal is being processed to make permanent the Trout Temporary MOA, with a minimum authorized altitude of 4,000 feet. The airspace over the Thunder Bay region to 15 miles offshore is one of a few areas authorized for supersonic flight in the central United States (Kimble, personal communication 1992).

Figure 4.47 Military operating areas for the Phelps-Collins Air National Guard Base in Alpena.



Edited by Kathryn Rowan

Recreational Activities**HISTORY**

Recreation in early Alpena was limited to a few activities including, “dancing and sail-boat excursions to some of the islands” (Boulton 1884:180). Later, sport fishing, swimming, boating, and touring excursions on the Bay and inland lakes became popular (Boulton 1884). In the 1890s, there was a movement to develop the water resources of the region for recreation. During the winter, ice boating, sleighing, hockey, and skating took place on Thunder Bay (*Alpena Argus*, 1 February 1893:3). Many elegant waterfront entertainment pavilions were constructed to provide activities for the local citizens and tourists. Alpena’s Huron Beach Pavilion opened in 1896 (Haltiner 1986).



Gene Wright, Old Woman Creek NERR

Figure 4.48 Air National Guard helicopter operating over the Thunder Bay region.



Gene Wright, Old Woman Creek NERR

Figure 4.49 Air National Guard jets at the Phelps-Collins Base in Alpena.



Figure 4.50 Visiting the historical boathouse of the Thunder Bay Island Light Station by kayak.

Summer resorts began to develop by the 1890s. El Cajon on Little Thunder Bay started operations around 1892 and boasted luxuries such as a new beach, buggy riding, cold water springs, peaceful cottages, and a scenic view of Lake Huron and offshore islands (*Alpena Argus*, 30 August 1892). During the 1930s, highway U.S. 23 was graded and paved, making it easier for motorists to visit Alpena County (Haltiner 1986).

The Lake Huron shore lured people to Alpena County during the 1920s, and the serenity of the small inland lakes continues to attract vacationers. Sport fishing became an important management emphasis for the Great Lakes during the 1960s with the decline of commercial fisheries and introduction of salmon as a sport fish. More recently, scuba (self-contained underwater breathing apparatus) divers have journeyed to Thunder Bay to explore and enjoy the many shipwrecks, geological features, and aquatic organisms.

BOATING

The State of Michigan consistently leads the United States in the number of registered watercraft and boating activity. An estimated 35% of the total 137,000 recreational boat-days in Alpena County during 1986 took place on Lake Huron (Talhelm et al. 1988). A total of 4,497 boats were registered in 1989 in Alpena County (4,302 pleasure craft and 61 commercial craft). In 1991, the harbors of Alpena, Harrisville, and Rogers City recorded a combined 8,437 transient boat days.

Based on a user survey, the Boating Programs Branch of the Michigan DNR (1990) estimated the average boat length launched from Michigan Great Lakes launch sites in 1990 was 18 feet.

Eighty percent of respondents were repeat users of a site. Seventy percent of respondents



Figure 4.51 Recreational boats at the Alpena Municipal Marina.

indicated that their primary activity was fishing, followed by pleasure boating and water skiing. If respondents indicated that their boating was poor, then fishing or weather conditions were listed as a main problem. The average distance traveled to a launch site was 20 miles. Approximately 75% of respondents indicated that additional public launch sites at other locations are needed (Michigan DNR 1990).

FISHING

Although sport fishing is an important recreational activity in Michigan, the number of people participating in sport fishing appears to be leveling. In 1989, a total of 8,643 resident annual, 965 non-resident annual, and 1,834 daily fishing



Figures 4.52 and 4.53 A catch of trout and salmon from Lake Huron, at the Michigan Brown Trout Festival.

Alpena Area Chamber of Commerce

licenses were sold in Alpena County. Approximately one-third of resident and non-resident anglers fished the Great Lakes, predominantly from private boats using baits, trolling, or casting (Mahoney et al. 1986). The most important attributes used by resident and non-resident anglers in selecting a fishing site include angler crowding, competition from other recreation activities, places to fish from shore, boat launching and marina facilities, and parking (Mahoney et al. 1986).

The Michigan Brown Trout Festival has been held in Alpena during the third full week of July since 1975, and is the oldest continuously held fishing tournament on the Great Lakes. The purpose of the Festival is “to promote Lake Huron fishing and to invite out of town guests to experience Alpena, ‘a warm and friendly port’ located in the heart of the sunrise side” (Alpena Convention & Visitors Bureau, 1990). A non-profit organization, with five officers and a Board of Directors (selected from 13 local service clubs), plans and manages the Festival.

There are nine days of tournament fishing for four lake species: brown trout, lake trout, salmon and steelhead. Prizes include cash and merchandise donated by local and national sponsors. A number of family-oriented recreational events are also organized during the tournament. In 1990, participation in the Festival included 850 registered anglers from 115 cities (8 states) and an estimated 30,000 spectators, over the nine day period (Alpena Convention and Visitors Bureau 1990).

SCUBA DIVING

An estimated 2.3 – 3.0 million U.S. citizens are active participants in recreational scuba diving. Approximately 310,000 to 405,000 active recreational scuba divers currently reside in the Great Lakes region (MI, WI, IL, IN, OH); about 46,000 to 60,000 of these scuba divers are from Michigan (PADI 1997).

Surveys by *Skin Diver* magazine and *Scuba Diving* magazine indicate that coral reefs and shipwrecks are the most popular recreational scuba diving environments and dive tourism attractions. Shipwrecks are found throughout the world, in various physical conditions. Most are historic shipwrecks caused by various types of maritime casualty; others are vessels intentionally sunk as artificial reefs and recreational diving attractions. Freshwater lakes often contain shipwrecks in excellent physical condition. In particular, the Great Lakes contain hundreds of shipwrecks that retain a large degree of historical integrity.

Sport diving with scuba in Thunder Bay appears to total far less recreational activity than boating or sport fishing, but has generated public interest due in part to the abundance of shipwrecks and the establishment of the Thunder Bay Underwater Preserve. There are no reliable estimates for total recreational scuba diving activity in the Great Lakes, the State of Michigan, the Michigan underwater preserves, or the Thunder Bay Underwater Preserve. The most accurate figures for annual use of the Thunder Bay region, however, is the number of recreational scuba

divers aboard charter boats operated by Thunder Bay Divers (the only charter service with boats based in Alpena). Thunder Bay Divers carried approximately 900 scuba divers in 1988; 903 scuba divers in 1990; and 880 scuba divers in 1991 (Vrana 1993). An unknown amount of diving-related visitation is also associated with private boats, charter boats trailered into the

region, and scuba diving from shore.

The dive season in Thunder Bay is from Memorial Day to about the second weekend in September. The most visited sites are the *Grecian*, *Montana*, and *Nordmeer*. The *Grecian* is 110' deep. Other popular wrecks are around 80-90' deep (Barnhill, personal communication 1998).



Thunder Bay Divers

Figure 4.54 Dive charter boat and scuba divers at the *Nordmeer* site.



Thunder Bay Divers

Figures 4.55 and 4.56 Recreational scuba divers visiting shipwrecks of the Thunder Bay region.

District Extension Sea Grant Agents in 1986 and 1990 – 1991 found that sport divers visiting the Thunder Bay Underwater Preserve were primarily between 26 and 45 years old. Most of these divers were from Michigan, with the second highest percentage from Ohio. Divers generally visit the region during July and August and use charter and private boats to access the Preserve (Stewart 1992; Peterson et al. 1987).

HUNTING AND FURBEARER HARVEST

Although hunting is a popular recreational activity in Michigan, the number of people participating in recreational hunting appears to be declining (Nelson 1991). In Alpena County, an estimated annual average of 3,090 hunter days were expended for waterfowl from 1985 – 1990. An estimated annual average of an additional 1,570 hunter days were expended for geese in Alpena County from 1985 – 1990 (Reiss, personal communication 1992). The majority of waterfowl hunting takes place during the fall duck and geese seasons in areas with a large amount of emergent vegetative cover (e.g., Squaw Bay, Misery Bay and coastal wetlands from Ossineke southeast to South Point).

The sale of fur harvester licenses in Michigan is also decreasing (Nelson 1991). Trapping activity along the Thunder Bay coastline is probably concentrated on furbearers in coastal marshes (e.g., muskrat, beaver, mink, and possibly raccoon) (Carlson, personal communication 1992). There is no known trapping taking place on offshore islands (Carlson, personal communication 1992).

RECREATION AND TOURISM FACILITIES AND SERVICES

○ *HARBORS AND MARINAS*

Four recreational harbors have been developed in the Thunder Bay region by the Michigan State Waterways Commission in cooperation with local units of government so that boaters will be no more than 15 shoreline miles away from safety. The harbors have marinas and other facilities and services to serve recreational users. Typically the marinas are managed by private businesses under leases from local governments. State or local governments manage some of the marinas.

Harbor and marina facilities are located at Alpena Harbor, Partridge Point Basin (private facility), Harrisville Harbor, Presque Isle Harbor, and Rogers City Boat Harbor (Figures 4.57 – 4.59). All of these facilities have gasoline and diesel fuel, water, electricity, restrooms, shower facilities, VHF-FM radio, holding tank pump-out, and launch ramps. Several of the harbors also have haul-out facilities, marine/general stores, repair services, fish cleaning stations, and a harbor master. Site-specific features include condominium homes and a beach at Partridge Point Basin, two historical lighthouses at Presque Isle Harbor, and a picnic area, playground, and beach at the Rogers City Boat Harbor.

○ *BOAT LAUNCHING FACILITIES*

There are three public boat launching facilities within 25 miles of the City of Alpena that have



Michigan DNR Parks and Recreation Division

(upper left) Figure 4.57 Alpena Harbor
 (upper right) Figure 4.58 Presque Isle Harbor
 (lower right) Figure 4.59 Harrisville Harbor



direct access to Lake Huron. Alpena Municipal Marina is located on Lake Huron at the City of Alpena and has hard-surfaced ramps with sufficient water depth to accommodate most boats with trailers, as well as courtesy piers, toilets, and 126 parking spaces. North Riverfront Park is located on Thunder Bay River in the City of Alpena. The park has hard-surfaced ramps and courtesy pier, as well as boat dockage. Devils River Mouth, located 9 miles south of the City of Alpena, has a ramp and parking facilities. All of these facilities can be used to launch small boats (e.g., trailerable boats, car-top boats, canoes, windsurfers, jet-skis) but the Devils River site will

not accommodate some boats because of shallow water depth.

The only private boat launching facility in the Alpena vicinity is Partridge Point Marina, located on Lake Huron, one mile south of the City of Alpena. The marina has two hard-surfaced (concrete) ramps and one soft-surface ramp.

○ *PARK PROPERTIES AND ASSOCIATED RECREATION FACILITIES AND SERVICES*

The following public park properties and associated recreation facilities and services are

either located on Thunder Bay or provide direct access to Thunder Bay and Lake Huron:

Bay View Park, located on Lake Huron, City of Alpena (adjacent to the municipal small boat harbor), totals 27 acres with 3,100 feet of Lake Huron shoreline, and includes a swimming beach, breakwater fishing area, picnic area, bandshell and other intensive recreation facilities, restrooms, and parking. The park is managed by the City of Alpena (23.5 acres) and by the Alpena School District (3.5 acres).

Thompson Park, located on Lake Huron, City of Alpena (State Avenue, southwest of Bay View Park), totals 1 acre with 160 feet of Lake Huron shoreline, and includes a swimming beach with

lifeguards, picnic area, open space, and portable restrooms. It is managed by the City of Alpena.

Blair Street Park, located on Lake Huron, City of Alpena (State Avenue, southwest of Bay View Park), totals 4 acres with 173 feet of Lake Huron shoreline, and includes a swimming area, picnic area, handicapped-accessible fishing pier, and parking.

Mich-e-ke-wis Park, located on Lake Huron, City of Alpena (State Avenue, southwest of Bay View Park), totals 39 acres with 2,700 feet of Lake Huron shoreline, and includes swimming beaches with lifeguards (Starlite and Mich-e-ke-wis), picnic area, other intensive recreation facilities, restrooms, and parking. It is managed



Figure 4.60 The old Presque Isle Lighthouse (above), built in 1840, and the New Presque Isle Lighthouse (Figure 5.4), built in 1870, are featured at parks near Presque Isle Harbor. The parks are administered by Presque Isle Township: the 100-acre park at the 1870 lighthouse is operated by the Presque Isle Lighthouse Historical Society. Facilities at these parks include historical museums, nature trails, a covered pavilion, and picnic areas.

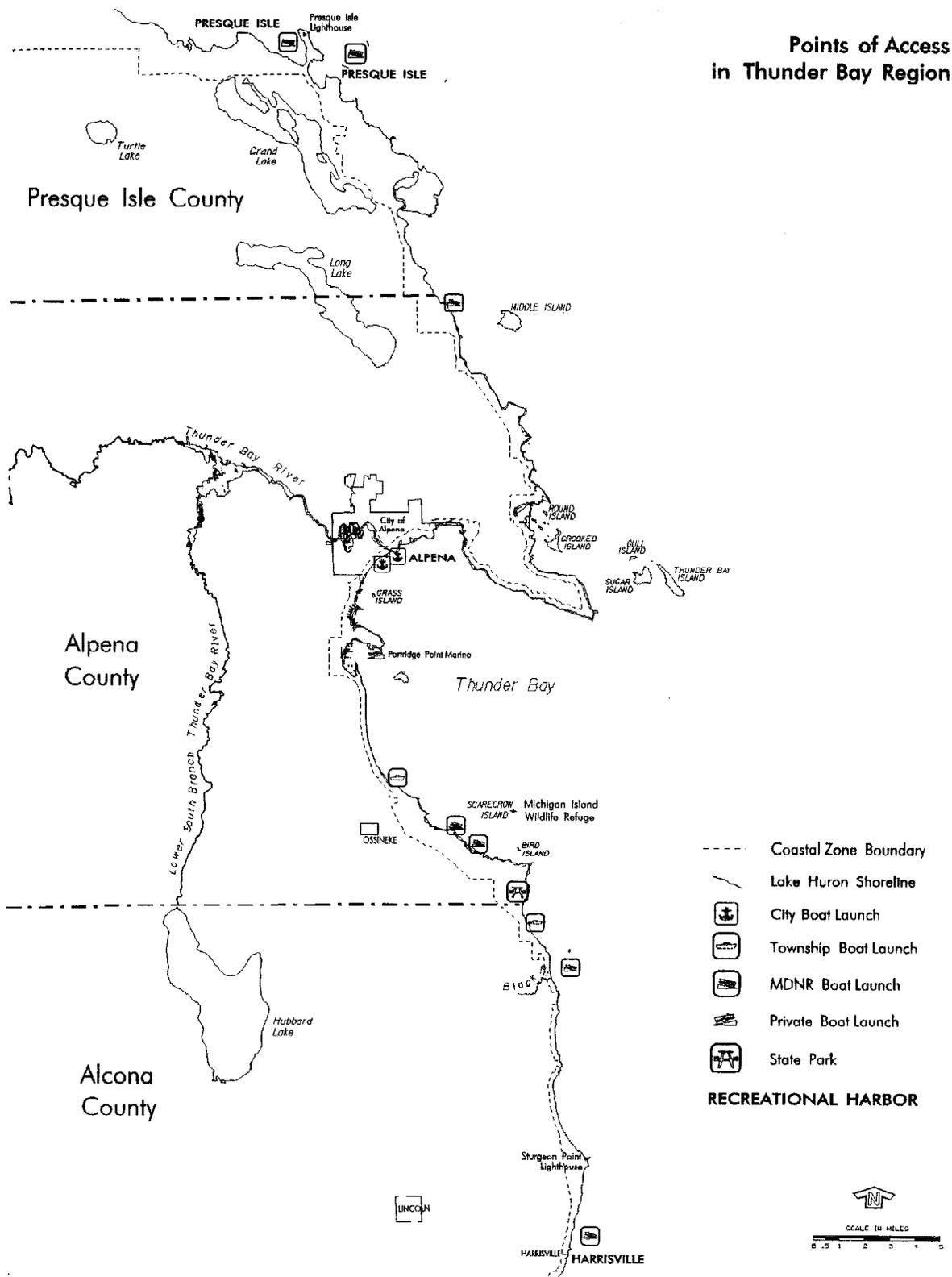


Figure 4.61 Selected water-based recreation facilities in the Thunder Bay region.

by the City of Alpena.

North Riverfront Park, located on Thunder Bay River, City of Alpena (Fletcher Street, near the Post Office), totals 2.3 acres with 570 feet of Thunder Bay River shoreline, and includes open space and parking. The park is managed by the City of Alpena.

South Riverfront Park, located on the Thunder Bay River, City of Alpena (near the Federal Building), totals 1.9 acres with approximately 850 feet of Thunder Bay River shoreline, and includes dock fishing, boat dockage, and opportunities for passive recreation. The park is managed by the City of Alpena and the federal government.

Island Park, formerly Sportsmen's Island, is located in the Thunder Bay River in the 500-acre Wildlife Sanctuary. It is a city-owned natural park connected by bridge to the roadside park at the corner of U.S. 23 North and Long Rapids Road. There are picnic facilities in the roadside park, but picnicking is not allowed on the Island.

LaMarre Park, located on the Thunder Bay River, City of Alpena (Eighth and River Street), totals 1.5 acres with 367 feet of Thunder Bay River shoreline, and includes a wooden fishing pier, picnic area, and parking. It is managed by Alpena County.

Sanborn Township Park in Ossineke, located on Lake Huron, is 10 miles south of the City of Alpena. It totals 3 acres of property that includes

a swimming beach, picnic area, toilets, and parking. It is managed by Sanborn Township.

Ossineke State Forest Campground, located on Lake Huron, 11 miles south of the City of Alpena, is part of Mackinaw State Forest and includes a swimming beach, picnic area, hiking trails, 42 campsites, water, toilets, and parking. Boat launching is at the nearby DNR Devils River access site. It is managed by the Michigan DNR Forest Management Division.

Negwegon State Park, located on Lake Huron, 14 miles south of the City of Alpena, totals approximately 1,674 acres. It has minimal facility development, including a swimming beach, hiking trails, vault toilets, and parking. There are plans for 125 campsites and other outdoor recreation facilities. The park is managed by the Michigan DNR Parks and Recreation Division.

An unnamed "park," located on Thunder Bay Island, has informal campsites and cooking areas that have been established by visitors near the abandoned U.S. Coast Guard boathouse and dock. The dock is located in the channel between Sugar Island and Thunder Bay Island. The island is managed by the U.S. Fish & Wildlife Service (Shiawassee National Wildlife Refuge).

○ RESTAURANTS AND EATING ESTABLISHMENTS

The Alpena area has approximately 41 eating establishments with a maximum capacity of over 3,650 patrons (Pardike 1992).

○ *LODGING AND CAMPING*

Peak occupancy for motels in the Thunder Bay region of Alpena County occurs during the months of June, July, and August. The months of May, September, and October also seem to have above average occupancy for most motels providing monthly statistics (Pardike 1992). There are four establishments that provide primitive camping and six establishments that provide convenience camping near the Thunder Bay region of Alpena County.

MARINE SAFETY AND LAW ENFORCEMENT

The Officer in Charge of USCG Station Alpena (Auxiliary Operated or AUXOP) coordinates the Thunder Bay area search and rescue (SAR) operations of the Alpena USCG Auxiliary Unit. The area of SAR responsibility for the Auxiliary Unit is from Sturgeon Point (southern boundary) to Rogers City (northern boundary). The Officer in Charge and the Auxiliary Unit cooperate with the Alpena County Sheriff Department, the Presque Isle Sheriff Department, and the Alcona County Sheriff Department in SAR operations. USCG Station Alpena is comprised of one regular USCG employee (Officer in Charge) under the direction of USCG Group Sault Ste. Marie. The Auxiliary Unit is comprised of 8 private boats and auxiliary operators. A total of two boats and marine safety operators are available from the Alpena County Sheriff Department and Presque Isle County Sheriff Department (Betters, personal communication 1992).

USCG Station Alpena can request additional SAR assistance from USCG Station St. Ignace and USCG Station Tawas City through the Rescue Coordination Center of the USCG 9th District Office in Cleveland, Ohio (Betters, personal communication, 1992). Air rescue and emergency evacuation operations are provided by USCG Air Station Traverse City, which can transport sport divers to a recompression chamber if commercial air service is not available (USCG, personal communication 1995).

The Officer in Charge of the USCG Station Alpena can enforce federal regulations on Lake Huron (Betters, personal communication 1992). State regulations on Lake Huron can be enforced by conservation officers from the Michigan DNR, state police officers, and county sheriffs (Chapman, personal communication 1992). Conservation officers, state police officers, and sheriff deputies are stationed in Alpena.

Conservation officers patrol Thunder Bay approximately once or twice per week during the summer (June-September). Law enforcement responsibilities of these patrols include fishing regulations, the Marine Safety Act, and underwater preserve related violations of Part 761, Aboriginal Records and Antiquities of Public Act 451 (1994), as amended. A low level of law violations recently have been recorded for patrols of Thunder Bay (Chapman, personal communication 1992).

THUNDER BAY EDUCATION AND RESEARCH ACTIVITIES

○ EDUCATION

Environmental education activities and/or science education in the Thunder Bay region have been conducted by the Alpena Educational Service District, Alpena Community College, Michigan Sea Grant Extension, and the 4-H Program (MSU Extension, personal communication 1992). However, there is an overall lack of coordinated environmental education programming and curricula on Thunder Bay and Lake Huron ecosystems, and the maritime history and underwater cultural resources of the Thunder Bay region.

The Michigan Science Teachers Association (MSTA) held an in-service workshop in Alpena during August 1993 for teachers interested in Great Lakes education, research, and resource management. During July 1992, the MSTA conducted a work and study cruise for teachers aboard the research vessel *Laurentian* (University of Michigan) in Thunder Bay. Topics of the cruise included Great Lakes sampling methods, physical and biological processes, and underwater cultural resources (MSTA 1992). A product of these workshops and the MSTA Thunder Bay National Marine Sanctuary Project will be curricula on the Great Lakes (and the Thunder Bay region) (Lau, personal communication 1993).



NOAA

Figure 4.62 Artwork from the "Kids Care About Our Great Lakes" poster contest (1993) sponsored by the Michigan 4-H Program and the National Marine Sanctuary Program.



NOAA

Figure 4.63 The winner of the poster contest sponsored by the Michigan 4-H Program and the National Marine Sanctuary Program.

○ RESEARCH

Organizations conducting research activities in the Thunder Bay region include the following (personal communication with program offices, unless otherwise cited):

STATE ORGANIZATIONS

Michigan Department of State (DOS):

Michigan Historical Center – Administers programs in archaeology, historic preservation, and museums. It includes the Office of the State Archaeologist, and the State Historic Preservation Office.

Michigan Department of Natural Resources (Michigan DNR):

Fisheries Division – Maintains a Great Lakes Research Station in the City of Alpena to conduct fisheries research.

Wildlife Division – Maintains a Field Office in Atlanta and a Research Station in Houghton Lake with responsibilities for wildlife research in Alpena and nearby counties.

Michigan Department of Environmental Quality (Michigan DEQ):

Surface Water Quality Division – Responsible for surface water quality monitoring and research in the Thunder Bay River watershed and other watersheds in the Thunder Bay region.

The Division office is in Lansing.

Michigan Coastal Management Program (MCMP) – Funds research related to the Great Lakes coastal zone, shorelands, and bottomlands. The Program office is part of the Land and Water Management Division, located in Lansing.

Michigan State University:

Center for Maritime and Underwater Resource Management (CMURM) – Conducts social research, scientific management studies, and technology transfer involving maritime and underwater cultural resources.

University of Michigan:

Center for Great Lakes and Aquatic Sciences (CGLAS) – The center is comprised of various faculty, research scientists, technicians, and students interested in studying the Great Lakes.

FEDERAL AGENCIES AND FEDERAL FUNDING

*U.S. Geological Survey (USGS) –
Biological Resources Division:*

Great Lakes Science Center – Research addresses lake trout rehabilitation, fish population dynamics, habitat studies, chemical contaminants, and non-indigenous (exotic) species. Headquarters is in Ann Arbor. Field work generally takes place at biological stations. The research vessel *Grayling* is based in Cheboygan (NFRC-GL 1992).

U.S. Fish and Wildlife Service (USFWS):

Alpena Fishery Resources Office – Provides technical assistance to state, tribal and provincial fishery management agencies, and participates in research studies on Lake Huron.

National Oceanic and Atmospheric Administration (NOAA):

Michigan Sea Grant College Program (MSGCP) – Funds for research are provided by NOAA and the State of Michigan. Research, education, and outreach are principal functions of the program. Also, the program conducts technology development and transfer. Research activities include studies of Great Lakes processes, aquatic resources, and social dimensions (MSGCP 1991).

Michigan Coastal Management Program (MCMP) – Funds for the program are provided by NOAA and the State of Michigan. (See summary under State Organizations.)

Great Lakes Environmental Research Laboratory (GLERL) – Comprised of two divisions (Research Services Branch and Science Branch); research programs focus on contaminated sediments and the toxicology of organic contaminants, processes affecting the fate of organic contaminants, lake levels and diversions, ecosystem structure and function, nutrient recycling,

physical oceanography, climate change, and the introduction of exotic species. GLERL also participates in research projects with the Cooperative Institute for Limnology and Ecosystems Research (CILER) at the University of Michigan. GLERL is located in Ann Arbor, and maintains the research vessel *Shenon* for Great Lakes studies (GLERL 1992).

National Status and Trends Program – NOAA's National Status and Trends Program, found within the National Ocean Service, has established 24 monitoring sites within the Great Lakes. The Program is involved in a project that collects zebra mussels to document concentrations of a large list of trace elements and organic contaminants. Thunder Bay was first sampled in 1996 and again in 1998.

Environmental Protection Agency (USEPA):

The Great Lakes National Program Office (GLNPO) in Chicago conducts and funds research on many aspects of the Great Lakes, and maintains research vessels on the Great Lakes (MSGCP 1992). The USEPA and Environment Canada are guiding the development of Lakewide Management Plans (LAMPs) for each of the Great Lakes, based on an ecosystem approach. These plans will identify ways to reduce and prevent pollution and restore lake ecology (Vigmostad 1992).

U.S. Coast Guard (USCG):

Administers programs in marine safety (including aids to navigation and vessel inspections), recreational boating safety, prevention of oil discharge on the Great Lakes, and federal law enforcement.

4. ENVIRONMENTAL CONDITIONS AND NATURAL RESOURCES

Environmental Conditions

THUNDER BAY REGION WATERSHEDS

A watershed or drainage basin is the area of land from which a lake or stream receives water (Judson et al. 1987). The abiotic and biotic characteristics of watersheds interact to affect the characteristics of a lake, stream, or other body of water. Three watersheds that influence the Thunder Bay region include lands surrounding Lake Huron, county coastal areas, and lands that drain into the Thunder Bay River.

○ LAKE HURON WATERSHED

Lake Huron is 206 miles in length and a maximum of 183 miles wide (USEPA and Environment Canada 1988). The total shoreline length

is estimated at 3,827 miles, including the shoreline of approximately 30,000 islands found within the lake (USEPA and Environment Canada 1988). Over one-half of the land area comprising the Lake Huron watershed is located in the Province of Ontario, Canada. The remainder of the watershed includes a large portion of the eastern half of Michigan's lower peninsula and a small section of Michigan's upper peninsula. The watershed totals 51,700 square miles (USEPA and Environment Canada 1988).

○ COASTAL WATERSHEDS

Alpena County, Presque Isle County, and Alcona County contain large coastal watersheds that border Thunder Bay and associated waters of Lake Huron. United States Geological Service (USGS) quadrangle names for Alpena County coastal areas (south to north) include Black River, Spruce, South Point, Ossineke, Alpena, North Point, Thunder Bay Island, Long Lake

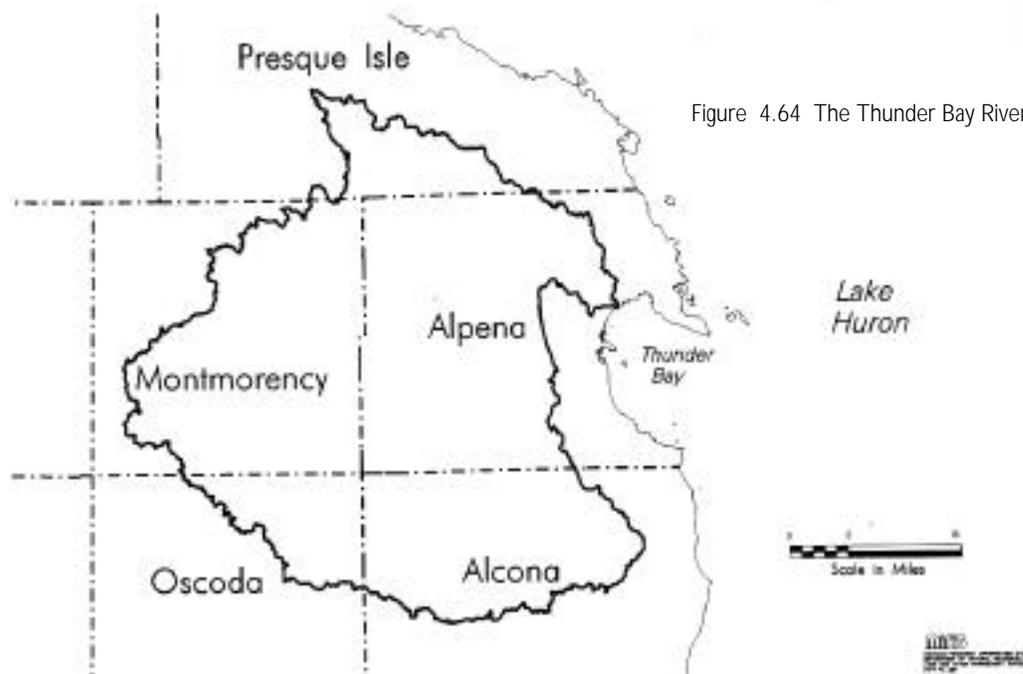


Figure 4.64 The Thunder Bay River watershed.

East, and Middle Island (MUCC 1993; Michigan Geological Survey Division 1991).

○ THUNDER BAY RIVER WATERSHED

The watershed of a large river usually can be subdivided into a number of secondary watersheds that are drained by tributaries of the river (Judson et al. 1987). The watershed of the Thunder Bay River and its tributaries total approximately 1,200 square miles of land and encompasses approximately two-thirds of Alpena and Montmorency Counties, one-third of Alcona County, and portions of Oscoda and Presque Isle Counties (Figure 4.64) (MRIP 1992; Burton 1981).

GEOLOGY

Thunder Bay is located on the northeast perimeter of the ancient Michigan Basin, a depression formed at the end of the volcanic Precambrian Era (Dorr and Eschman 1970). Soils and other geologic materials overlying the Precambrian Era bedrock can be traced to the last glacial period of the Cenozoic Era.

During the Pleistocene Epoch of the Cenozoic Era, a series of glaciers advanced slowly in a southerly direction and then receded to the north over the landscape of present-day Michigan. These glacial events were named Nebraskan, Kansan, Illinoian, and Wisconsinian. The advancing and receding ice lobes deepened and widened the old river valleys that later would

become glacial lakes and eventually the present-day Great Lakes basins. As the most recent (Wisconsinian) glaciers receded, they deposited glacial till on the present-day Thunder Bay region. Glacial till is a composite of unconsolidated rock materials of all sizes, including clay, silt, sand, gravel, and boulders.

In addition to the glacial till, lake sediments from glacial lakes that preceded Lake Huron overlay the bedrock of the Thunder Bay region coastal zone and Lake Huron bottomlands. Farrand (1982) classifies the soils along the Alpena County coastal zone as either lacustrine clay and silt (i.e., clay-rich till on low-lying areas formerly inundated by glacial lakes) or dune sand (i.e., fine to medium sand associated with former lake and outwash plains). Because of the thin layer of glacial till over bedrock in many parts of the Alpena County coastal zone, the groundwater under these areas is vulnerable to contamination from surface activities (Lusch 1992a; 1992b).

Thunder Bay has several notable geological features. Carbonate rocks (i.e., limestone and Karst), located in the north-northeast section of Alpena County, extend out into Lake Huron and form a 40 to 75 foot drop-off on the eastern side of Thunder Bay Island. Nearby in Misery Bay are limestone sinkholes (Figure 4.65). In addition, numerous rock shoals and reefs within Thunder Bay have caused many shipwrecks and have provided the impetus for the construction of lighthouses and lifesaving stations.

Figure 4.65 A sinkhole and shoal waters in Misery Bay.

METEOROLOGY/CLIMATE

The climate of Alpena is influenced by its location with respect to major storm tracks and the moderating effects of the Great Lakes. Prevailing winds are from the northwest except during May and June when southeast winds predominate (NOAA 1991).

Summers in Alpena are warm and sunny. Mean temperatures at Alpena for June, July, and August (1873 - 1991) range from the low to mid 60s with an average high of 77° F. Most storms pass to the north of Alpena, often bringing brief showers every few days. Summer showers

moving from the southwest weaken and sometimes dissipate as they approach Alpena, although heavy thunderstorms with damaging winds occasionally occur. The mean rainfall is 29.11 inches (NOAA 1991).

The average wintertime storm track is south of Alpena, and most passing storms bring snow. Winter storms often bring winds with an easterly component, and result in a mean snowfall of 85.7 inches. Precipitation from these storms is increased by both the moisture and instability picked up from Lake Huron, and the forced upslope flow as the storms move westward over land. Minimum air temperatures during early

winter are higher than would be expected at this latitude because of the moderating influence of Lake Huron. But as nearby waters freeze over, particularly at the Straits of Mackinac, sub-zero temperatures become fairly common by February, lowering the average winter temperature to 13° F. Freezing temperatures have occurred as late as June and as early as late August (NOAA 1991).

**Annual Average Meteorological
Measures in Alpena, Michigan (NOAA 1991)**

Mean Winds	6.7 – 9.2 mph
Mean Rainfall	29.11 inches
Mean Snowfall	85.7 inches

BOTTOMLANDS/BATHYMETRY

The Thunder Bay region of Lake Huron can be segmented into three areas: nearshore, Thunder Bay, and open lake based on the depth of water and distance from shoreline (Figure 4.66) (NOS 1990; NOS 1988). In general, surface sediments within this region are classified as undifferentiated till or bedrock (Dolan et al. 1986). The topography and sediments of bottomlands within these areas can be described as follows (miles are expressed as statute miles):

○ *NEARSHORE AREAS*

The nearshore portion of the Thunder Bay region is defined as the bottomlands extending out to approximately the 25 foot depth contour line. Overall, the area can be characterized as

being very shallow and having a gradually sloping to flat gradient. Islands can be found off South, Hardwood, Partridge, and North Points, as well as Rockport and Black River. Bottomland topography includes reefs located off Sulfur Island (Partridge Point) and extending from North Point to Crooked Island. Misery Bay contains exposed and submerged rocks, as well as a sinkhole.

○ *THUNDER BAY*

Thunder Bay can be described as an area west of a line from South Point to North Point, but not including nearshore areas previously described. The Bay has a gradually sloping bottom with flats that extend from the nearshore area located off of the Thunder Bay River to the open waters of Lake Huron. Depths range from approximately 25 feet at the eastern boundaries of the nearshore areas to approximately 60 feet at the eastern boundary of Thunder Bay. Sediments of this area include the following: less than 25% clay-size particles; mean grain size of sediments range from 2 to 4 PHI¹ in the northern half of the Bay to less than 2 PHI in the southern half of the Bay; surface sediments have a pH² of 7.0 – 7.5; and surface sediments have less than .05% nitrogen and less than 0.022% phosphorus, less than .05% P205 (Thomas 1981).

○ *OPEN LAKE*

The open waters of Lake Huron reach a depth of approximately 60 feet at the eastern boundary

1. PHI is a scale for grain size of sediments. A PHI size of 2.0 corresponds to medium sand; a PHI size of 4.0 corresponds to fine sand/coarse silt.

2. pH is a scale for acidity (1.0) or alkalinity (14.0). Neutral is 7.0

of Thunder Bay (i.e., on a line from South Point to North Point), 100 feet about 3 miles lakeward of Thunder Bay, 150 feet about 7 miles lakeward of Thunder Bay, and 200 feet about 14 to 15 miles lakeward of Thunder Bay (i.e., longitude

83 degrees west). The bottomlands are located at increasing depths traveling east from Thunder Bay to the midline of the Lake Huron basin. The maximum depth of Lake Huron is 748 feet (Michigan Sea Grant Extension 1990).

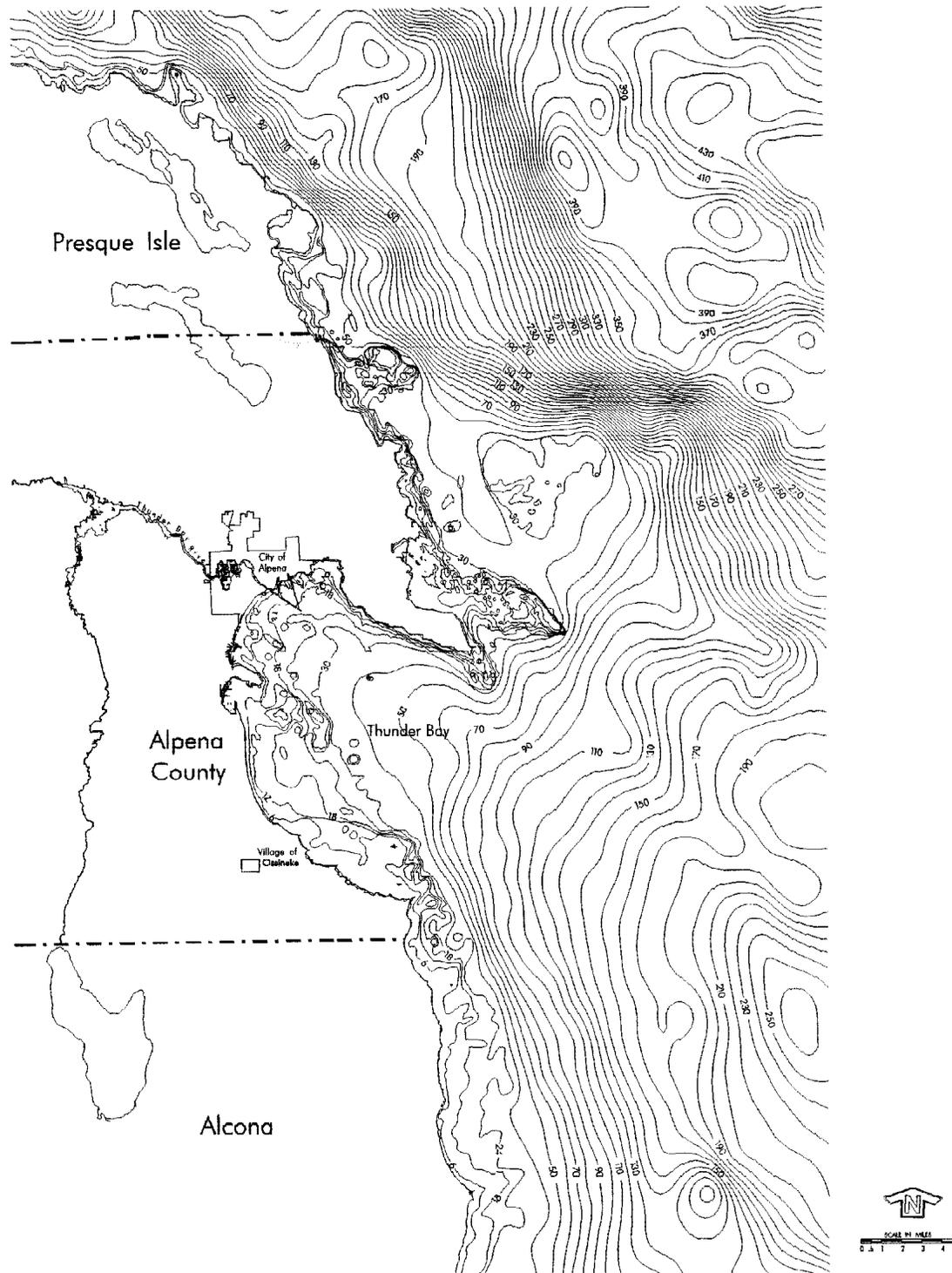


Figure 4.66 Topography of bottomlands in the Thunder Bay region.

LIMNOLOGY○ *WATER LEVELS*

Lake water levels fluctuate monthly and yearly (NOAA 1992). Factors influencing water level changes include precipitation, runoff, temperature and evapotranspiration, meteorological events (e.g., wind and storms), crustal movement (e.g., isostatic rebound or uplifting), flooding and erosion, dredging for navigation improvements, water diversion, regulation of water levels, and water control structures (Great Lakes Commission 1986). The annual average water level for the period of 1982 – 1991 at the three NOAA stations nearest Thunder Bay (Harbor Beach, Harrisville, and Mackinaw City) is slightly over 579 feet above sea level (NOS 1992).

The primary cause of long-term fluctuations in Great Lakes water levels is the amount of precipitation and evapotranspiration from the lakes (USEPA and Environment Canada 1988; Great Lakes Commission 1986). The average annual precipitation on Lake Huron and the Lake Huron watershed ranges between 27.6 and 39.4 inches; annual precipitation in the Thunder Bay region averages 27.6 inches (USEPA and Environment Canada 1988).

In addition to precipitation on the lake surface and runoff from the watershed, Lake Huron receives fresh water from Lake Superior through the St. Marys River and from Lake Michigan through the Straits of Mackinac. Water flow through the St. Marys River into Lake Huron is

estimated at 78,000 cubic feet per second; water flow through the Straits into Lake Huron is estimated at 52,000 cubic feet per second (US EPA and Environment Canada 1988). Lake Michigan and Lake Huron function as one hydraulic unit and have the same water levels due to the direct and substantial connection of these lakes through the Straits of Mackinac (USFWS 1988).

○ *THERMAL REGIME AND WATER CIRCULATION*

The annual thermal cycle of Lake Huron and Thunder Bay is typical of that for northern lakes. After ice-out, the shallow nearshore regions heat up faster than offshore areas and large horizontal gradients in temperature can occur during this period. When surface heating has persisted long enough to warm the surface waters of the entire region, the surface waters become vertically stratified. The time of onset of whole-lake stratification can vary from year to year by up to one month, with the latest time of occurrence being late June. Once the lake stratifies, the surface waters continue to warm until fall cooling begins. Just as in the spring heating regime, the nearshore waters respond more rapidly to cooler air temperatures than the offshore regions due to their greater thermal mass (GLERL, personal communication 1997).

Although coastline features may suggest that the long term circulation of the Bay is counterclockwise, the dominate circulation pattern is governed by the variances of the wind. Satellite-tracked drifting buoys were used in part of an

ongoing study of the circulation and mixing of Thunder Bay (McCormick, personal communication 1997). The drifting buoy data showed complex water movement within the Bay. Two conclusions are suggested from this study. First, in general, the currents in the Bay are weaker than those experienced in other coastal regions of Lake Huron. Second, there is little persistence of current flow. In the future, computer models will be developed to take further advantage of data sets that enable better understanding and management of Great Lakes and coastal resources (McCormick, personal communication 1997).

Of particular interest within the Thunder Bay region is the long homogeneous water mass observed in 1973 and 1980 that extends along the western shore of Lake Huron from the Straits of Mackinac to Thunder Bay (Moll et al. 1985). This water mass was interpreted by Moll et al. (1985:209) to represent Lake Michigan water entering Lake Huron through the Straits of Mackinac. Regions impacted by Lake Michigan waters were found to have relatively high alkalinity and ion concentrations (Moll et al. 1985).

Saylor and Miller (1991:2) indicate that seiches (i.e., oscillations of water levels caused by winds) drive currents hydraulically eastward and westward through the Straits of Mackinac. The current flow is affected by differences in thermocline levels between Lake Michigan and Lake Huron during the summer. The result is a westward flow of water below the thermocline into Lake Michigan. This inflow of relatively

unmixed Lake Huron waters has important implications for water chemistry and biology in northern Lake Michigan. The eastward outflow of surface waters into Lake Huron during the summer is comprised of relatively unmixed Lake Michigan waters (Saylor and Miller 1991). Annual net flow of water from these processes is eastward into Lake Huron.

○ ICE CONDITIONS

In general, Thunder Bay receives milder ice conditions than the average for nearshore areas of Lake Huron. The average date of freeze-up is the last week in December and the average date for maximum ice thickness is the second week in February (Bolsenga et al. 1988). Maximum ice thickness averaged 37 cm (14.5 inches) for 1965 – 1979; ice growth averaged approximately 8 mm (.32 inches) per day; and ice dissipation averaged approximately 28 mm (1.10 inches) per day (Bolsenga 1988). The average date of ice breakup was the second week in March (Bolsenga 1988).

AIR QUALITY

The Michigan Air Sampling Network is designed to “measure air quality throughout the state, and consists of over 200 monitoring sensors in 27 counties. The network is operated by the Air Quality Division of the Michigan Department of Environmental Quality (DEQ), city or county agencies, and industries” (Michigan DEQ 1995:11). Alpena County has monitoring sensors for total suspended particulate (TSP),

particulate matter, lead, toxic organics, trace metals, and meteorological data. LaFarge Corporation in the City of Alpena began an industrial monitoring program in 1995 (Michigan DEQ 1995). Results of air quality monitoring is provided in annual and special reports available through the Michigan DEQ.

WATER QUALITY

Much of the concern about changes in Great Lakes water quality has focused on excessive nutrient enrichment (i.e., eutrophication) and toxic contamination (Rossman 1986). Excessive nutrients and toxic contaminants are commonly called pollutants.

Phosphorus enrichment was diagnosed as a problem within Thunder Bay during the 1970s and led to the designation of Thunder Bay as a “problem area” by the International Joint Commission (IJC) in 1977 (Horvath et al. 1981; Waybrant 1977). In response to the problem area designation, the Michigan DNR conducted a water quality study of Thunder Bay in 1980 (Horvath et al. 1981), and the Northeast Michigan Council of Governments (NEMCOG) completed a water quality study of the Thunder Bay watershed in 1980 (Burton 1981).

Horvath et al. (1981) classified the Thunder Bay River mouth as eutrophic, the Alpena Harbor area as mesotrophic (i.e., between eutrophic and oligotrophic), and Thunder Bay waters as oligotrophic. Oligotrophic waters are low in nutrient inputs with low organic production

(Wetzel 1983). The Thunder Bay River mouth and Alpena Harbor are relatively small areas in comparison to waters of the Bay. The classification was based on water quality parameters (chlorophyll a, total phosphorus, and secchi depth transparency) and biological indicators (benthic macroinvertebrates). Historical water quality data indicate that the outer Bay has remained stable over time (i.e., 1960s – 1980) and that water quality in Alpena Harbor has improved slightly (Horvath et al., 1981). Results from the study of the Thunder Bay watershed in 1980 indicate that the Thunder Bay River was generally of high water quality, although there were localized areas of water quality degradation (Burton 1981).

With the exception of some screening for heavy metals by Horvath et al. (1981), there is minimal site specific data on toxic contaminants in Thunder Bay. Horvath et al. (1981) indicated that heavy metals were generally found at, or below, detection levels in Thunder Bay during 1980, except for elevated iron concentrations found in the Thunder Bay River and elevated zinc concentrations at certain sampling stations in July.

The Fish Contaminant Monitoring Program (FCMP) is administered by the Surface Water Quality Division of the Michigan Department of Environmental Quality (DEQ). “The goals of the FCMP are to: (1) evaluate whether fish contamination problems exist in specific surface waters; (2) identify spatial differences and temporal trends in the quality of Michigan’s surface waters with respect to persistent, bioaccumulative

chemicals; (3) evaluate whether existing pollution prevention, regulatory, and remedial programs are effectively eliminating or reducing chemical contamination in the aquatic environment; and (4) support the establishment or removal of public health sport fish consumption advisories by the Michigan Department of Public Health.” (Michigan DEQ 1995b:1). Fish contaminant monitoring methods used in the Thunder Bay region include wild fish edible portion monitoring, wild fish (whole fish) trend monitoring, river mouth caged fish trend monitoring, and special caged fish studies (Michigan DEQ 1995b). Results of these studies have been provided in annual and special reports since 1983.

Since 1973, the Great Lakes Water Quality Board of the IJC has identified Areas of Concern (originally called “problem areas.”) These are areas where “the 1972 (revised in 1978) Great Lakes Water Quality Agreement objectives of jurisdictional standards, criteria, or guidelines established to protect uses have been exceeded

and remedial measures are necessary to restore all beneficial uses” (IJC 1987:37). The three Areas of Concern nearest Thunder Bay are the Saginaw River system and Saginaw Bay, the St. Marys River, and the Spanish River in Ontario, Canada (IJC 1987). Remedial Action Plans are being prepared by the IJC under guidance from the Great Lakes Water Quality Board in order to restore beneficial uses in the Areas of Concern (IJC 1987).

Natural Resources

The Thunder Bay National Marine Sanctuary will protect and manage the underwater cultural resources (e.g., shipwrecks) of the Thunder Bay region. The Sanctuary will not protect or manage the region’s natural resources (e.g., wetlands, islands, wildlife, and aquatic organisms). The natural resources of the Thunder Bay region are described in the FEIS because they are an important part of the maritime cultural landscape and scenery of the region.

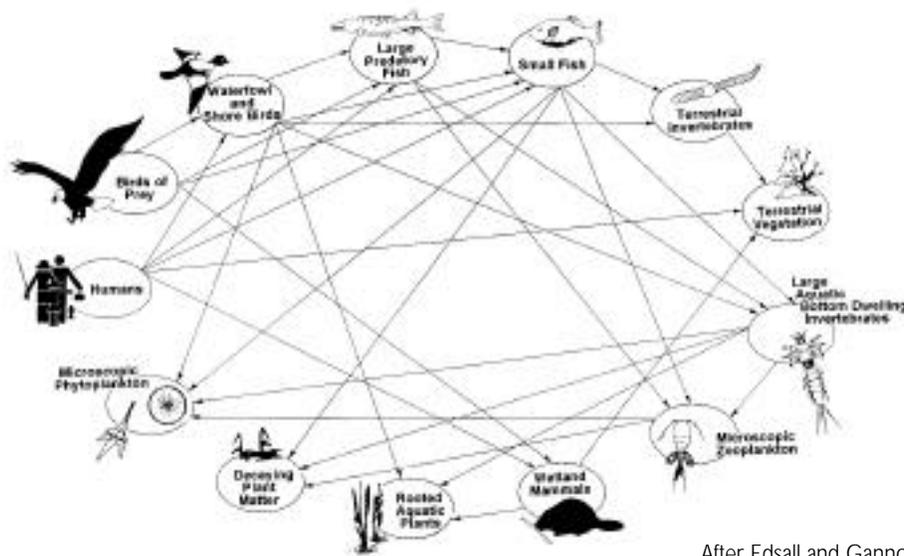


Figure 4.67 Generalized food web for Lake Huron waters of the Thunder Bay region.

WETLANDS

Herdendorf et al. (1980) indicated that approximately 7,417 acres of coastal wetlands exist in the Thunder Bay region; about half of this total acreage is located within the South Thunder Bay Wetland (Figure 4.68). Over 99% of the coastal wetlands located within the Thunder Bay region are classified as palustrine systems by Herdendorf et al. (1980). Palustrine systems include a broad range of wetlands usually dominated by trees, shrubs, persistent emergents, emergent mosses, and lichens; these systems include wetlands traditionally termed marshes,

swamps, bogs, and fens (Cowardin et al. 1979). Several wetland areas have been designated by the State of Michigan as *Environmental Areas*. The purpose of these Environmental Areas is to protect critical fish and wildlife habitat.

ISLANDS

Twenty-eight islands are found east of Alpena County (Table 4.12) and within the South Thunder Bay Wetland east of Alcona County. Some very small islands or protruding rocks located offshore of Partridge Point and Bare Point in Squaw Bay or elsewhere are not included in this total (Taylor, personal communication 1992).

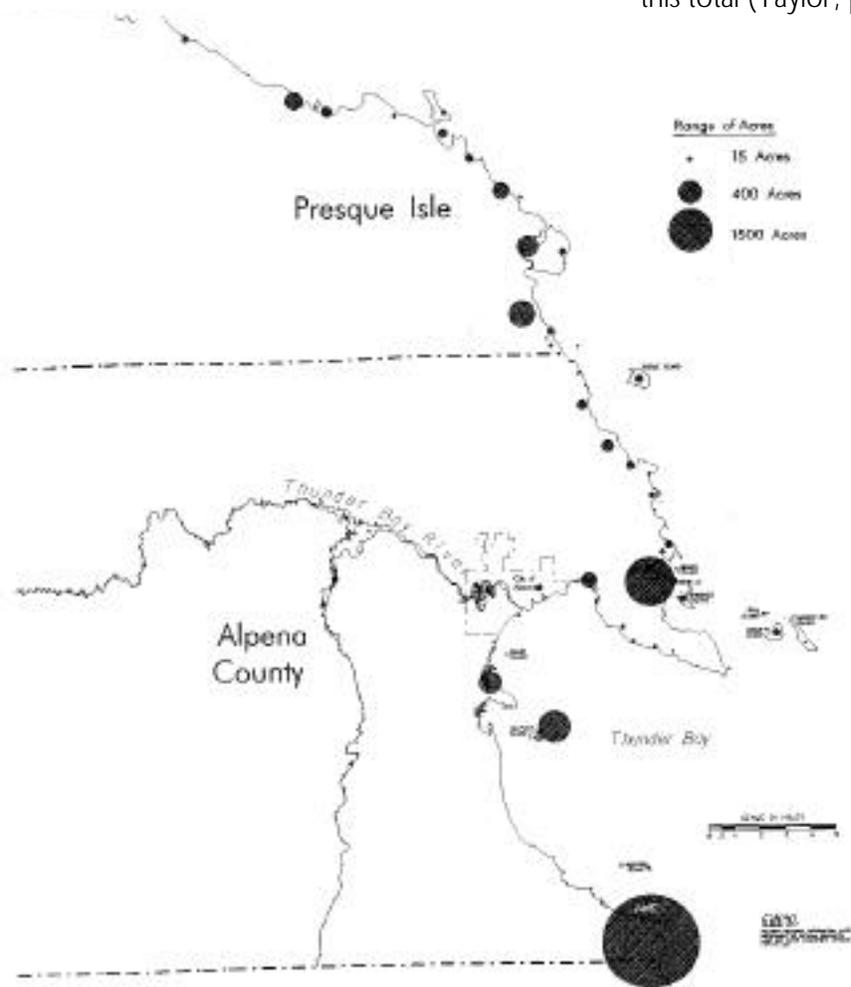


Figure 4.68 Coastal wetlands in the Thunder Bay region.

Table 4.12 Islands in Lake Huron, east of Alpena and Alcona Counties (some islands have multiple owners).

# of Islands	Total Acreage	Range of Acreage	County	Ownership		
				State	Federal	Private
28	964.56	.3 - 280.0	1	18	2	9

AQUATIC PLANTS

A comprehensive field survey of aquatic plants within the Thunder Bay region has not been completed. Herdendorf et al. (1980) identified some plant species probably occurring in coastal wetlands of the region, primarily through literature review. Wells et al. (1992) identified plant species found on some islands and associated wetlands in the region during a 1987 census.

Makarewicz et al. (1989) studied phytoplankton in the offshore regions of Lake Huron in 1983 – 1985. Phytoplankton are small, plantlike organisms comprised of photosynthetic pigments that constitute the base of primary productivity within lake ecosystems (Wetzel 1983).

AQUATIC ANIMALS

Aquatic animals are an important part of the food web for Lake Huron waters of the Thunder Bay region. Aquatic animals that may be viewed near shipwrecks include benthic invertebrates, such as sponges, hydras, aquatic worms, crayfish, freshwater shrimp, univalve snails, bivalve clams and mussels, and aquatic insects (Pennak 1989; Wetzel 1983). Other aquatic animals that may not be visible by eye include zooplankton (primarily Rotifera, Cladocera, and Copepoda).

○ FISH

In general, the fish inhabiting the Thunder Bay region can be characterized as forage and predator species. The preferred habitat of these fish varies with the species and the stages of their life cycle (Scott and Crossman 1973; Hubbs and Lagler 1964).

Important forage fish stocks in Lake Huron include whitefish, alewives, rainbow smelt, bloaters, deepwater sculpin, slimy sculpin, ninespine stickleback, and trout-perch (Argyle 1991). Other forage species found in Lake Huron include lake herring and suckers (USFWS



Thunder Bay Divers

Figure 4.69 Crayfish in the shelter of a Thunder Bay shipwreck.

1988). Most forage species can usually be found inshore near the lake bottom in search of food. Some species, such as the bloater (*Coregonus hoyi*), other ciscoes or "chubs," and deepwater sculpin, prefer deepwater habitats (Scott and Crossman 1973; Hubbs and Lagler 1964).

Predatory fish species found in Lake Huron include lake trout, brown trout, rainbow trout (steelhead), coho salmon, chinook salmon, pink salmon, walleye, yellow perch, and burbot (USFWS 1988). These species can be found in a wide range of depths within inshore and offshore areas of the lake, feeding upon forage fishes (Scott and Crossman 1973; Hubbs and Lagler 1964). To a large extent, the locations of predatory fishes are dependent upon the abundance and distribution of forage fishes.

With the exception of burbot and sea lamprey, the predatory fishes are important recreational fishery species (Rakoczy and Rogers 1990). The recreational fishery is maintained through international sea lamprey control programs, the rearing and stocking of certain fish species by state, provincial and federal governments, and fishing regulations (USFWS 1988).

Fish species observed around shipwrecks and other scuba diving sites in the Thunder Bay region include alewife, brown trout, burbot, carp, channel catfish, northern pike, salmon, smallmouth bass, steelhead, yellow perch and walleye (McConnell, personal communication 1992; Warner and Holecek 1975). A sizable population of smallmouth bass was reported on

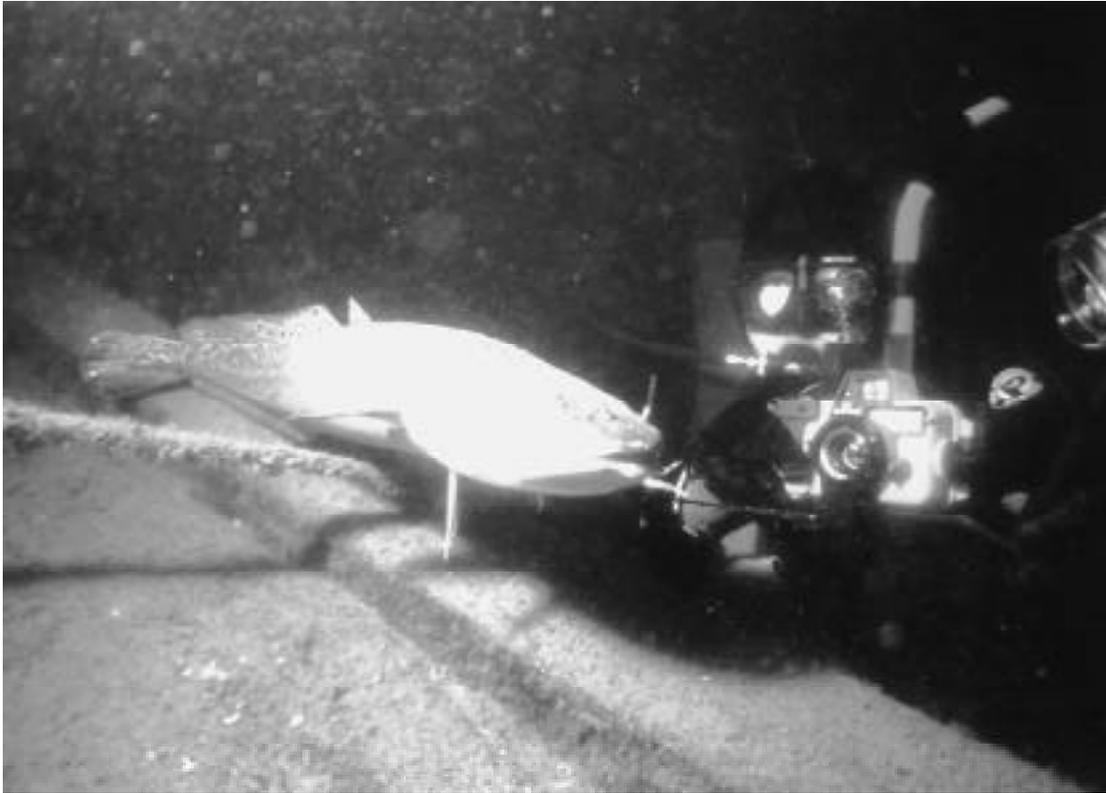
the *Molly T. Horner* site; large channel catfish were reported on the steamer *Johnson* (Warner and Holecek 1975). Warner and Holecek (1975) also suggest that the Misery Bay sinkholes and the limestone wall near Thunder Bay Island are good locations for viewing fish species.

○ REPTILES AND AMPHIBIANS

With the exception of some records presented by Herdendorf et al. (1980), the literature review did not reveal site specific information on reptiles and amphibians of the Thunder Bay region. A similar conclusion was made by the U.S. Fish and Wildlife Service (1988) in relation to the coastal wetlands of Lake Huron. Species of reptiles and amphibians recorded for Alpena County that may inhabit the Thunder Bay region include the mudpuppy, Jefferson salamander, American toad, wood frog, green frog, northern leopard frog, eastern smooth green snake, northern water snake, northern brown snake, northern ribbon snake, eastern garter snake, massasauga rattlesnake, snapping turtle, and midland painted turtle (Harding and Holman 1990; Holman et al. 1989; Herdendorf et al. 1980:773-774).

○ BIRDS

A total of approximately 160 breeding bird species were recorded for all habitat types in Alpena County from 1983 – 1988 (Brewer et al. 1991). Bird species with the greatest number of observations in open water habitats of Michigan's northern lower peninsula include American coot,



Thunder Bay Divers

Figure 4.70 Burbot and scuba diver on a Thunder Bay shipwreck.

barn swallow, belted kingfisher, Canada goose, great blue heron, green-backed heron, mallard, tree swallow, and wood duck (Brewer et al. 1991). Killdeer and spotted sandpiper were frequently observed on shoreland habitats; caspian tern, common tern, herring gull, and ring-billed gull typically nest in shore and beach habitats (Brewer et al. 1991). There has also been a large increase in cormorants (McCormick, personal communication 1997).

Winter bird use of Lake Huron is generally low. Species commonly reported during the winter include mallard, common goldeneye, common merganser, and red-breasted merganser; these species occur as scattered groups throughout open water shoreline areas (USFWS 1988:32).

○ MAMMALS

Very little site specific information is available on mammals of the Thunder Bay region. However, the northern half of the Lake Huron basin is known to provide “excellent habitat for big game, small game, and furbearers” (USFWS 1988:71). Big game mammals include white-tailed deer, black bear, and a small population of elk in the northeast lower peninsula of Michigan (USFWS 1988; Baker 1983). Small game animals include snowshoe hare, eastern cottontail, grey fox, and red squirrel (USFWS 1988).

Mammals that may utilize the coastal wetlands of the Thunder Bay region include eastern cottontail, snowshoe hare, beaver, meadow vole,

muskrat, red fox, raccoon, long-tailed weasel, mink, river otter, and white-tailed deer (Herdendorf et al. 1980:760). The wetlands of Lake Huron are essential habitat for beaver, muskrat, mink, and river otter (USFWS 1988:72). For detailed information on the distribution, life histories, and habitat preferences of Michigan mammals, consult Baker (1983).

○ *AQUATIC NUISANCE SPECIES*

The six primary aquatic nuisance species in the Thunder Bay region are the zebra mussel, the spiny water flea, the sea lamprey, the round goby, the white perch, and the Eurasian ruffe. An aquatic nuisance species is defined as a waterborne, non-indigenous organism that threatens: (1) the diversity or abundance of native species, (2) the ecological stability of infested waters, or (3) a commercial, agricultural, aquacultural, or recreational activity dependent on infested waters (Michigan DNR 1995). As shown in Figures 4.71 and 4.72, zebra mussels have extensively colonized shipwrecks throughout Thunder Bay.

The populations of sea lamprey are controlled through application of the chemical lampricide TFM to Great Lakes streams. Presently, there are only two streams within the Sanctuary boundary that are on the treatment schedule (McClain, personal communication 1995).

○ *ENDANGERED, THREATENED, OR RARE SPECIES*

No comprehensive studies of endangered, threatened, or rare species have been conducted within the Sanctuary boundary.

Fish and bird species known to occur within the Sanctuary boundary that are currently on Michigan and federal lists of endangered, threatened, and rare species are identified in Tables 4.13 and 4.14.



Thunder Bay Divers

Figure 4.71 (above) and 4.72 (below) Zebra mussels have colonized shipwrecks in the Thunder Bay region.

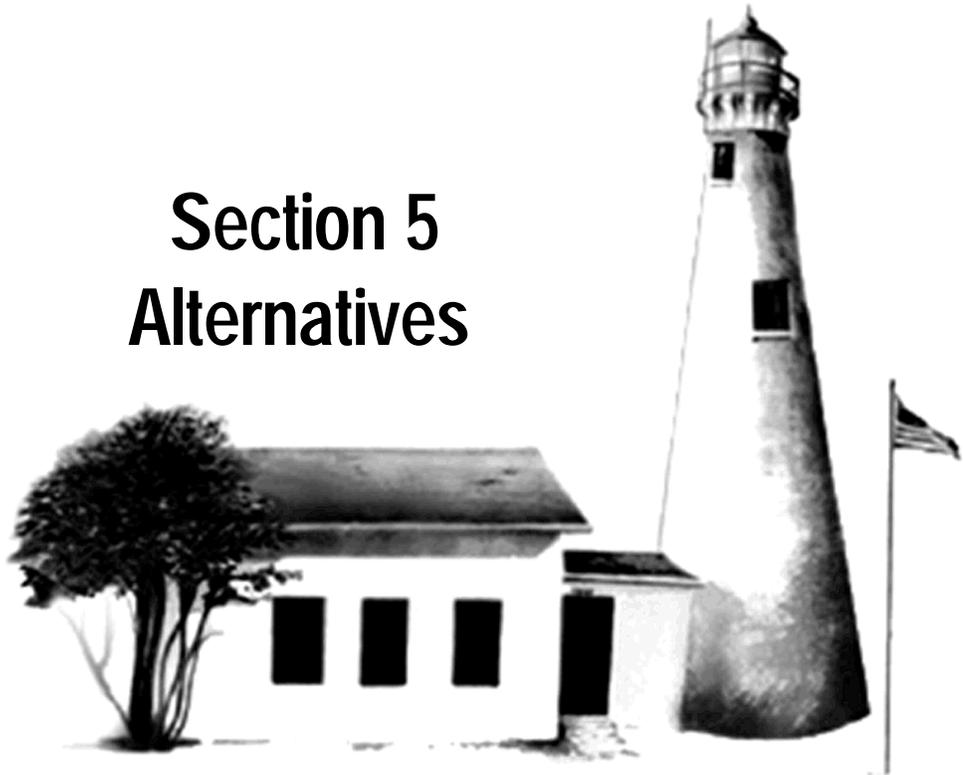
Table 4.13 Listing of State of Michigan endangered, threatened, and rare species.

	Endangered	Threatened	Rare	Special Concerns
Fish	None	Channel Darter Lake Sturgeon Shortjaw Cisco Sauger	None	Kiyi
Birds	None	Caspian Tern Common Tern Common Loon Osprey Red Shouldered Hawk	None	Black-crowned Night Heron

Table 4.14 Listing of federal endangered, threatened, and rare species.

	Endangered	Threatened	Rare	Special Concerns
Fish	None	None	None	Shortjaw Cisco Lake Sturgeon Deepwater Cisco Kiyi
Birds	None	Bald Eagle	None	None

Section 5 Alternatives



SECTION 5

ALTERNATIVES

NOAA's Preferred Alternatives for the Thunder Bay National Marine Sanctuary

- NOAA would designate Thunder Bay as a National Marine Sanctuary.
- NOAA would adopt a boundary of the Thunder Bay National Marine Sanctuary marked at the north by the northernmost Presque Isle Lighthouse and at the south by the Sturgeon Point Lighthouse. The boundary would extend lakeward to longitude 83 degrees west and would establish a Sanctuary of 808 square miles.
- NOAA would adopt regulations similar to those used in other Sanctuaries to protect underwater cultural resources and consistent with State of Michigan law.
- The State of Michigan, another federal agency, or NOAA would issue permits for research or recovery of underwater cultural resources.

A. INTRODUCTION

The Alternatives section provides a comparative analysis of a range of possible federal actions, in this case whether or not to designate a National Marine Sanctuary, and if so, what boundary, regulatory, and administrative alternatives to accept. These alternatives are compared in terms of the resources and human uses identified in Section 4, The Sanctuary Setting, and in light of the relative environmental consequences from the various agency actions (alternatives) that may be taken.

The Alternatives section presents four sets of alternatives related to the designation and management of the Thunder Bay National

Marine Sanctuary (Figure 5.1). The information provided in this section should help answer the following questions:

1. Should Thunder Bay be designated as a National Marine Sanctuary?

If the Thunder Bay National Marine Sanctuary is designated:

2. What should the boundaries be?

3. What should the NOAA Sanctuary regulations include?

4. How should the permit system be administered?

All of the alternatives are based on the determination that the Thunder Bay National Marine Sanctuary would focus solely on the underwater cultural resources of the region and not be involved in the protection or management of natural resources.

Comprehensive ecosystem management of natural resources was rejected during the feasibility process as a management option by

the Thunder Bay Core Group. This was based in part on a conclusion that the State of Michigan has adequate authority to manage natural resources in Thunder Bay.

The alternatives, therefore, consider the natural resources of Thunder Bay only in terms of their scenic or aesthetic qualities, and only as they relate to the cultural landscape of the region.

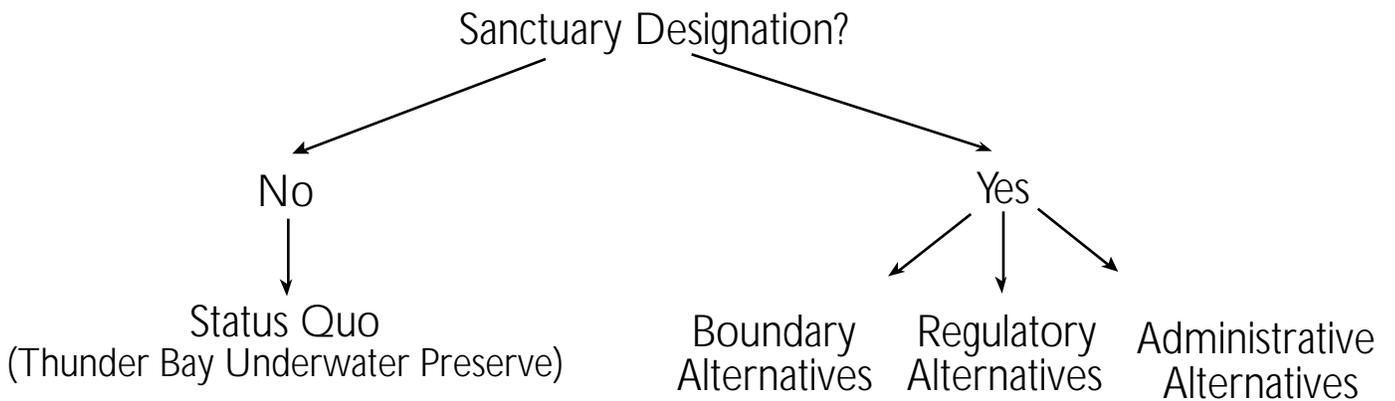


Figure 5.1 Alternatives related to designation and management of the Thunder Bay NMS.

Summary of Preferred Alternatives

Sanctuary Designation Alternatives

A. No Sanctuary designation: NOAA would not designate Thunder Bay as a National Marine Sanctuary (the “status quo” or “no action” alternative). Thunder Bay would continue to be administered as a State of Michigan underwater preserve.

B. Sanctuary designation: NOAA would designate and establish the Thunder Bay National Marine Sanctuary. All levels of government, organizations, and businesses would work together to comprehensively manage the underwater cultural resources of the Thunder Bay region in the context of the maritime cultural landscape (*NOAA's preferred alternative*).

If NOAA designates the Thunder Bay National Marine Sanctuary, the following additional alternatives and questions need to be discussed:

Boundary Alternatives

A. Existing Thunder Bay Underwater Preserve: NOAA would adopt the existing state-designated underwater preserve, which is 288 square miles, as the Sanctuary boundary.

B. Alpena County latitudes: NOAA would use the northern and southern latitudes of Alpena County and extend the lakeward boundary to longitude 83 degrees west. This boundary alternative is 448 square miles.

C. Presque Isle Harbor to Sturgeon Point: NOAA would adopt a northern boundary marked by the northernmost Presque Isle Lighthouse, and a southern boundary marked by the Sturgeon Point Lighthouse. The boundary would extend lakeward to longitude 83 degrees west and establish a Sanctuary of 808 square miles (*NOAA's preferred alternative*).

Regulatory Alternatives

A. State of Michigan: NOAA would adopt regulations that mirror State of Michigan law to protect underwater cultural resources.

B. Other Sanctuaries: NOAA would adopt regulations similar to those used in other Sanctuaries to protect underwater cultural resources. The regulations would be consistent with State of Michigan law (*NOAA's preferred alternative*).

Summary of Preferred Alternatives (continued)

Administrative Alternatives

A. Permits issued by NOAA: All Sanctuary permits would be issued solely by NOAA. These Sanctuary permits would be in addition to existing permits issued by state and/or other federal agencies. The State of Michigan would be involved in the review of Sanctuary permits through Section 106 of the National Historic Preservation Act.

B. Permits issued either by the State of Michigan, a federal agency, or NOAA: (1) the State of Michigan would continue to issue permits under state law related to underwater cultural resources; (2) for activities involving permits from other federal agencies, NOAA would address Sanctuary concerns through the review and authorization, and if necessary, the placing of conditions on federal permits; or (3) for an activity adversely impacting underwater cultural resources but that requires neither a state permit nor a permit from another federal agency, a Sanctuary permit would need to be obtained directly from NOAA in order to conduct the activity (*NOAA's preferred alternative*).

1. SANCTUARY DESIGNATION ALTERNATIVES

A. No Sanctuary designation: NOAA would not designate Thunder Bay as a National Marine Sanctuary (the “status quo” or “no action” alternative). Thunder Bay would continue to be administered as a State of Michigan underwater preserve.

Under Designation Alternative A, existing management authorities (federal, state, tribal, and regional agencies) having responsibilities in the Thunder Bay region would retain authority and Thunder Bay would not be designated as a National Marine Sanctuary. The long-term protection and management of Thunder Bay's underwater cultural resources would remain

with existing local, state, federal, and tribal authorities and programs.

Management of underwater cultural resources in Michigan is defined by Part 761, Aboriginal Records and Antiquities of Public Act (P.A.) 451 (1994), as amended, and Part 325, Great Lakes Submerged Lands of P. A. 451 (1994), as amended. In addition, the federal Abandoned Shipwreck Act (ASA) of 1987 applies to abandoned shipwrecks in Michigan waters.

Part 761, Aboriginal Records and Antiquities of P. A. 451, authorizes the establishment of Michigan underwater preserves to protect “abandoned property of historical value, or ecological, educational, geological, or scenic features or

formations having recreational, educational, or scientific value." Part 325, Great Lakes Submerged Lands of P. A. 451, provides for oversight and control of activities on state-owned bottomlands of the Great Lakes. See Appendices E and F for the full text of these state laws.

Under Designation Alternative A, the existing legal protection now provided by Part 761 and Part 325 in the underwater preserves would be provided throughout the Sanctuary. These existing laws have gaps, however, which leave certain underwater cultural resources unprotected from salvage and personal collection. With no additional Sanctuary regulations, there would be no supplemental protection of underwater cultural resources that are not protected under the existing legal regime. For additional discussion on this topic, refer to the regulatory alternatives in this section.

The Michigan Department of Environmental Quality's (DEQ) Land and Water Management Division and the Department of State's (DOS) Michigan Historical Center are responsible for the management of the Thunder Bay Underwater Preserve, as well as for underwater cultural resources outside of the Preserve boundaries. The Michigan Underwater Salvage and Preserve Committee provides technical and other assistance to the Director of the DEQ and the Secretary of DOS for actions relating to Michigan underwater preserves and the management of underwater cultural resources (e.g., creation of preserves, permit applications, permit fees, legislation, and rules).

Examples of past projects in the Alpena area and the Thunder Bay Underwater Preserve include mooring buoys, interpretive signs, and displays. These projects were funded through grants issued by the Michigan Coastal Management Program in cooperation with nonprofit organizations in Alpena. Development of informational materials and maintenance of mooring buoy systems are supported through the volunteer efforts of the Thunder Bay Underwater Preserve Committee and the Alpena Area Chamber of Commerce. Outreach and technical assistance are provided by Michigan Sea Grant Extension, Michigan State University, and The University of Michigan.

Dedicated state funding and staff support, however, are limited for administration of the Thunder Bay Underwater Preserve and the management of underwater cultural resources. Currently, the DEQ and DOS each have only one staff person to oversee the underwater preserve program, which consists of nine underwater preserves. The primary responsibility of the existing staff is to review permit applications and address other regulatory issues raised by the public. The one staff person in the DEQ works on two programs and is estimated to work only 10 – 15% of his time on the underwater preserve program. Given the number of underwater preserves and the limited staff, adequate time and resources are not available at present to develop coordinated educational, research and enforcement efforts, particularly efforts dedicated to underwater cultural resources and the associated maritime heritage of the Thunder Bay region.

B. Sanctuary designation: NOAA would designate Thunder Bay as a National Marine Sanctuary. All levels of government, organizations, and businesses would work together to comprehensively manage the underwater cultural resources of the Thunder Bay region in the context of the maritime cultural landscape (NOAA's preferred alternative).

Under Designation Alternative B, NOAA would designate Thunder Bay as a National Marine Sanctuary. The Sanctuary would provide supplemental protection of underwater cultural resources, and supplemental resources for education, interpretation, personnel, research, and administration. This would lead to more comprehensive management of underwater cultural resources in the Thunder Bay region. NOAA estimates that the Thunder Bay National Marine Sanctuary would receive at least \$200,000 annually in federal funds from NOAA.

Section 3 of this document, Management Plan, describes many of the activities that NOAA, the State of Michigan, local agencies, nonprofit organizations, and other partners could undertake if the Sanctuary is designated.

The implications of designating a Sanctuary are described below in the context of the boundary alternatives, regulatory alternatives, and administrative alternatives.

2. BOUNDARY ALTERNATIVES

This section discusses boundary alternatives for the Thunder Bay National Marine Sanctuary

(Figure 5.2). These boundary alternatives evolved as a result of information collected for the Thunder Bay Region Inventory of Resources (Vrana 1993) and through input received from regional experts and community members throughout the feasibility process.

During the feasibility process, NOAA considered a boundary that ran north to Presque Isle Harbor, south to Sturgeon Point Lighthouse, and eastward in an arc formation so the point of the arc touched longitude 83 degrees west. Given the similarity to another boundary alternative (described below as Boundary Alternative C), NOAA decided to include only one of these boundary alternatives for the following reasons: (1) the number of known, probable, and suspected shipwrecks is similar to the arc boundary, and (2) it would be very difficult to identify, administer, and enforce a boundary with an arc.

BOUNDARY ALTERNATIVES

A. Existing Thunder Bay Underwater Preserve: NOAA would adopt the existing state-designated underwater preserve, which is 288 square miles, as the Sanctuary boundary.

B. Alpena County latitudes: NOAA would use the northern and southern latitudes of Alpena County and extend the boundary lakeward to longitude 83 degrees west. This boundary alternative is 448 square miles.

C. Presque Isle Harbor to Sturgeon Point: NOAA would adopt a northern boundary

marked by the northernmost Presque Isle Lighthouse, and a southern boundary marked by the Sturgeon Point Lighthouse. The boundary would extend lakeward to longitude 83 degrees west and establish a Sanctuary of 808 square miles (*NOAA's preferred alternative*).

All boundary alternatives include Thunder Bay proper and encompass almost all of the existing Thunder Bay Underwater Preserve. Boundary Alternatives B and C omit a small portion of the eastern boundary of the Preserve which extends lakeward just beyond longitude 83 degrees west.

The landward extent of all boundary alternatives is Lake Huron's ordinary high water mark and, therefore, does not affect any activities on land. For an explanation of the ordinary high water mark, see Figure 5.3.

Criteria were selected to evaluate boundary alternatives. Selection of criteria was based on the goals of the NMS Program, the goals of the Thunder Bay NMS, and the needs of the State of Michigan and regional communities.

Boundary evaluation criteria are:

1. Known, probable, and suspected locations of shipwrecks in the Thunder Bay region;
2. Known probable, and suspected locations of nationally historic shipwrecks in the Thunder Bay region;

3. Maritime cultural landscape of the Thunder Bay region, including lighthouses/lifesaving stations, known and suspected historic and prehistoric sites, natural and aesthetic resources, and coastal communities;

4. Accessibility to underwater cultural resources and associated Sanctuary facilities and services;

5. Existing and potential infrastructure for community recreation and tourism, and other Sanctuary support services (e.g., education, research); and

6. Effectiveness and efficiency of Sanctuary management and administration.

Criterion 1: Known, probable, and suspected shipwrecks

The location of shipwrecks is an important criterion in determining the boundary of the Sanctuary because these resources are the focus for management. Known total losses are defined as vessels for which archaeological evidence and/or strong historical documentation (three primary sources or more) confirm the existence and location where they were stranded, foundered, burned/explored, or abandoned. Probable total losses include those vessels for which oral tradition, one or more historical primary sources, or three or more reliable secondary sources, confirm their location. Suspected total losses encompass

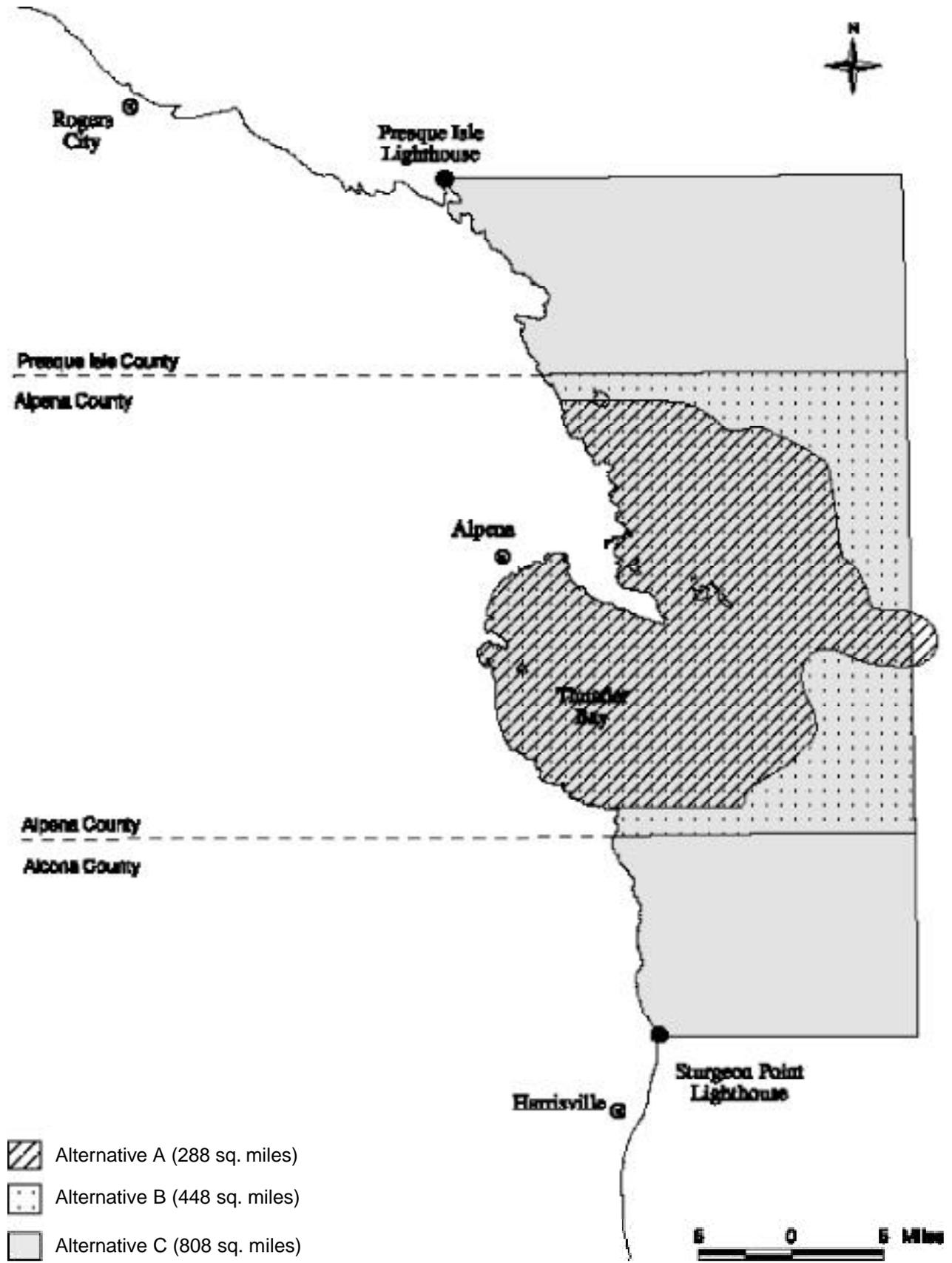
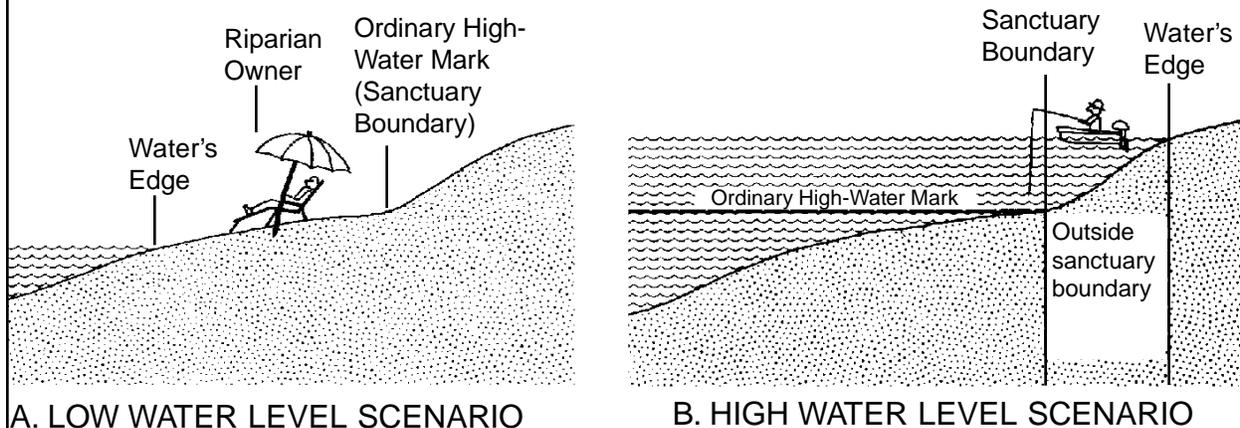


Figure 5.2 Boundary alternatives for the Thunder Bay NMS.

The inland boundary of the Sanctuary is the ordinary high water mark (OHWM) on Lake Huron. The OHWM is permanently set in statute in Part 325, Great Lakes Submerged Lands, of P. A. 451 (1994), as amended. On Lake Huron, the OHWM is fixed at 580.5 feet International Great Lakes Datum (IGLD) above sea level. The OHWM is the legal boundary separating state-controlled bottomlands from private property. This mark represents the line between upland (private property) and bottomlands (state-owned property) *regardless of the actual level of the lake.*

When the water's edge is below the OHWM, a landowner with waterfront property has exclusive use of the exposed bottomland and may post this area (e.g., place a "No Trespassing" sign). The landowner retains all access rights to the lake. However, the bottomlands and any cultural artifacts protected under state law remain under state control. Under the Sanctuary regulations, all underwater cultural resources located below the OHWM would be managed and protected under Sanctuary regulations.

When the water's edge is above the OHWM, the public is free to navigate, fish, and hunt on the entire water area. Michigan Common Law provides that if you have gained lawful access to the water, you may walk along the shore, provided that you remain in the water. The submerged area *above* the OHWM would not be considered part of the Sanctuary.



If a person found an underwater cultural resource (as defined in the Sanctuary regulations) on a portion of a beach that was below the OHWM and therefore within the Sanctuary boundary, it would be covered under Sanctuary regulations.

If a person found an artifact above the OHWM and thus *outside* the Sanctuary boundary, it would not be considered a Sanctuary resource and that person would not be in violation of the Sanctuary regulations.

Figure 5.3 Explanation of the ordinary high water mark as the landward boundary.

those shipwrecks listed in secondary sources, but not confirmed by primary documents, oral tradition, or archaeological fieldwork.

Criterion 2: Nationally historic shipwrecks

The mission of the NMS Program is to manage nationally significant ecological and cultural resources within marine and Great Lakes environments for the benefit of current and future generations. Therefore, the boundaries of the Sanctuary must encompass those underwater cultural resources having national historic significance, as well as those having regional or local significance. For additional discussion on national significance, refer to Section 4, The Sanctuary Setting.

Criterion 3: Maritime cultural landscape

The Thunder Bay National Marine Sanctuary should be considered in the context of the maritime cultural landscape of the region. Cultural landscape is described by the National Park Service as a geographic area including the following components: cultural and natural resources; coastal environments; and human communities and related scenery that are associated with historic events, activities, or persons, or that exhibit other cultural or aesthetic values (NPS 1992). Most of the cultural landscape would not be regulated by NOAA because the landward boundary of the Sanctuary would stop at the ordinary high water mark. However, NOAA would work in partnership with other governmental and non-governmental entities to de-

velop research and education programs that encourage residents and visitors to understand, appreciate, and become stewards of the maritime cultural landscape.

In determining the boundaries of the Sanctuary, the lighthouses/lifesaving stations, historic and prehistoric coastal sites, and associated coastal communities should be considered as part of the cultural landscape. The quality of the cultural landscape provides context and meaning to the management, education, and research programs of the Sanctuary. The quality of the cultural landscape also enhances or detracts from the experiences of Sanctuary visitors.

Criterion 4: Accessibility to the Sanctuary resources and associated facilities and services

The primary mission of the NMS Program is to protect resources while facilitating existing and multiple uses within the Sanctuary to the extent compatible with the primary mission. This cannot be accomplished without the active involvement and interaction of Sanctuary users with Sanctuary resources, facilities, and programs. Visitors to the Sanctuary must have access to the resources found within the boundaries of the Sanctuary, and to the facilities and services associated with the Sanctuary. The Thunder Bay NMS must provide programs that are meaningful and accessible to visitors, divers and non-divers alike. Criterion 4 focuses on the facilities and services that are directly connected or enhance accessibility to Lake Huron and the resources of the Sanctuary.

Criterion 5: Infrastructure for recreation, tourism, and Sanctuary support services

Because it is important for visitors to have access to the resources and programs of the Sanctuary, an infrastructure must be available to accommodate and support visitors. The infrastructure has the potential to enhance or detract from the experiences of visitors. This infrastructure could include public boat launching facilities, water-based recreation services (e.g., charter services and boat rentals), maritime attractions (e.g., museums, interpretive centers, and historic structures), conference facilities, and research/education facilities. Infrastructure is considered for the following coastal communities that are either within or near the boundaries of the Sanctuary: Harrisville, Black River, Ossineke, Alpena, Presque Isle, and Rogers City.

Criterion 6: Effectiveness and efficiency of Sanctuary management

Consideration must be given to maximizing the effectiveness and efficiency of Sanctuary management. Many aspects of Sanctuary management are included in Criteria 1 – 5. However, other aspects deserving consideration include the ability by users to identify the Sanctuary boundary, and the availability or proximity of enforcement personnel and visitor safety services in relation to the boundaries of the Sanctuary. Enforcement personnel could include the U.S. Coast Guard, Michigan DNR conservation officers, Michigan State Police, and the Sheriff Marine Patrols. Visitor safety providers include

the U.S. Coast Guard, hospitals, and hyperbaric facilities (for scuba divers).

Analysis of Boundary Alternatives A, B, and C

A larger number of known, probable, and suspected shipwrecks, as well as those shipwrecks of potential national historic significance are included in Boundary Alternative C, as compared to Boundary Alternatives A and B (Tables 5.1 and 5.2; Figure 5.4). The shipwrecks of potential national historic significance are the *Havre*, *H. Hubbard*, *Kyle Spangler*, *John F. Warner*, *James Mowatt*, *New Orleans*, *Grecian*, and the *Isaac M. Scott* (Martin 1996). Potential national historic significance was evaluated by Martin (1996) using criteria of the National Historic Landmark Program.

It is important to consider the coastal maritime resources adjacent to Sanctuary boundaries as part of the maritime cultural landscape, although the boundaries of the Sanctuary would not extend landward of the ordinary high water mark. Coastal maritime resources include lighthouses/lifesaving stations, and historic and prehistoric sites. Boundary Alternatives A and B are adjacent to the Lighthouses at Middle Island and Thunder Bay Island, while Boundary Alternative C also includes the Presque Isle Lighthouses and Sturgeon Point Lighthouse (Figures 5.5 and 5.6). Boundary Alternative C is adjacent to Negwegon State Park, known to have numerous coastal historic and prehistoric sites (Table 5.3).

Table 5.1 Number of known, probable, and suspected shipwrecks by boundary alternative.

Boundary	# of Known Shipwrecks	# of Probable Shipwrecks	# of Suspected Shipwrecks	Total
A	26	71	15	112
B	28	73	15	116
C	34	83	43	160

Table 5.2 Shipwrecks of potential national historic significance.

Boundary	Vessels with Known Locations	Vessels with Probable Locations	Vessels with Suspected Locations
A	<i>John F. Warner, New Orleans, Grecian</i>	<i>Kyle Spangler Havre, H.</i>	<i>Hubbard</i>
B	<i>John F. Warner, New Orleans, Grecian</i>	<i>Kyle Spangler Havre, H.</i>	<i>Hubbard</i>
C	<i>John F. Warner, New Orleans, Grecian, Isaac M. Scott</i>	<i>Kyle Spangler, Havre, H., James Mowatt</i>	<i>Hubbard</i>

Boundary Alternatives A and B extend to about the middle of Negwegon State Park. An equal number of islands are adjacent to the Sanctuary in all boundaries, with the exception of Black River Island off Alcona County, included in Boundary Alternative C.

Alpena is the central coastal community in all of the boundary alternatives. Boundary Alternatives A, B, and C are adjacent to or include the community of Ossineke. Boundary Alternative

C is also adjacent to or nearby Harrisville, Black River, Presque Isle, and Rogers City. All boundary alternatives have diverse natural scenery along the shoreline.

Access to Sanctuary resources, associated facilities and services, and interaction with Sanctuary visitors are important to the comprehensive management of the Sanctuary. Access points include coastal parks, public beaches, harbors and marinas, and coastal visitors' centers

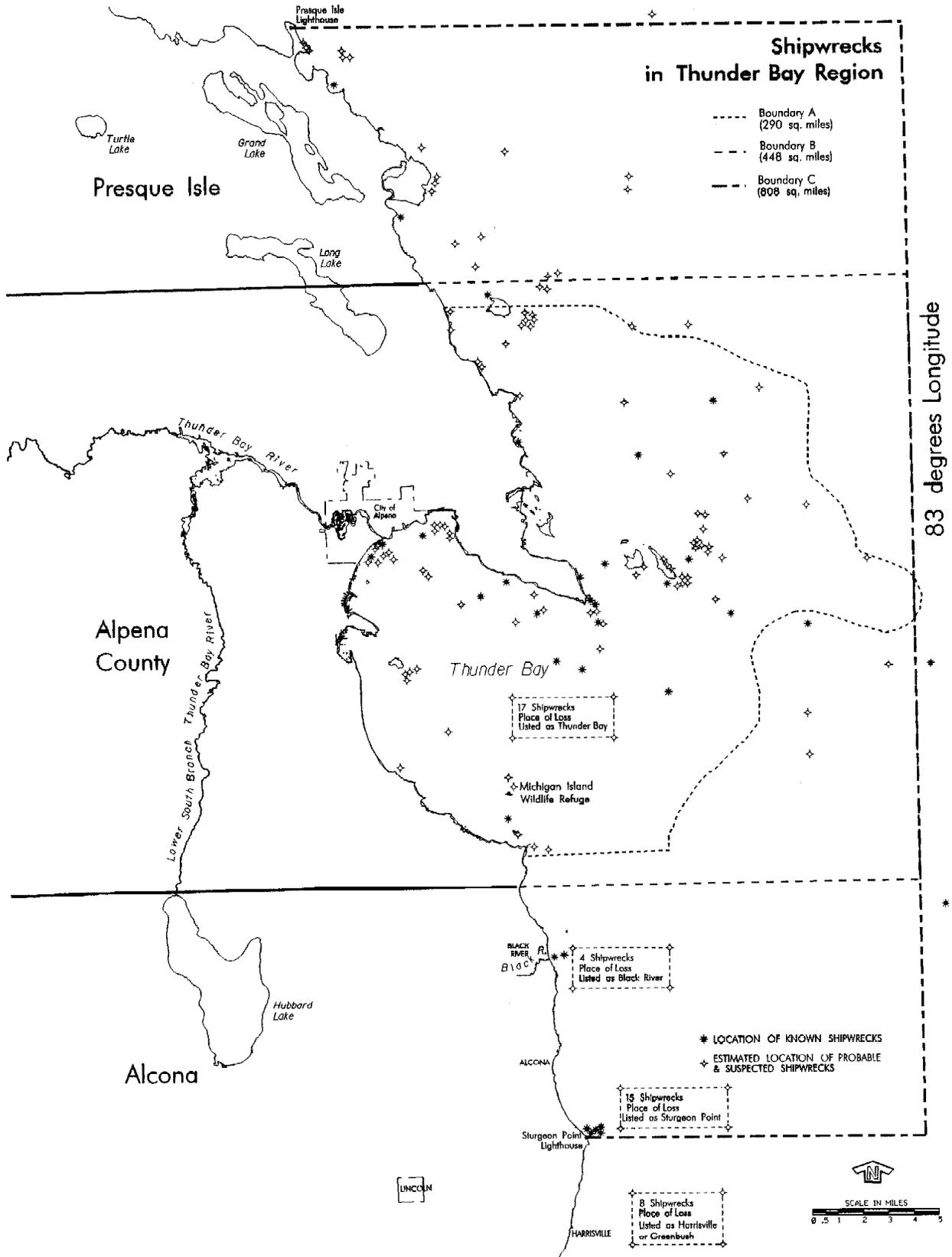


Figure 5.4 Locations of known shipwrecks, and estimated locations of probable and suspected shipwrecks within boundary alternatives of the Thunder Bay NMS.

and museums. Boundary Alternatives A, B, and C have similar numbers of parks and beaches with the exception of Negwegon State Park. Boundary Alternative C is adjacent to Negwegon State Park, an addition of approximately three miles of public beaches and coastal resources. Boundary Alternative C provides significant opportunities for visitor interaction and access to Sanctuary resources by being adjacent to the public boat launch site at Rockport and to Presque Isle Harbor. Presque Isle Harbor includes a public marina, two lighthouses, and a visitor center. Boundary Alternative C is also adjacent to the Sturgeon Point Lighthouse and its associated visitors' center and museum. Boundary Alternatives A and B are not adjacent to any

existing coastal visitor center and/or museum. Alpena's facilities and services are available in all boundary alternatives. The larger area of Boundary Alternative C includes local charter boat operators in Presque Isle and Alcona counties; public boat launching facilities at Presque Isle, Rockport, and Black River; and the lighthouses at Sturgeon Point and Presque Isle. Boundary Alternative C also has more diverse facilities and services available due to the close proximity to Rogers City and Harrisville (Tables 5.4 and 5.5).

In terms of effectiveness and efficiency of Sanctuary operation, Boundary Alternative A is already recognized as the existing Thunder Bay Under-



The Penrose Family

Figure 5.5 Presque Isle Lighthouse, constructed in 1870.



Michigan Historical Center

Figure 5.6 Sturgeon Point Lighthouse, constructed in 1869.

water Preserve. Boundary Alternative B is identified by the north and south boundaries of Alpena County, which lack obvious landmarks. Boundary Alternative C is the most recognizable boundary, because the north and south boundaries are lighthouses. Potentially, more enforcement personnel would be available for Boundary Alternative C because it includes Alcona and Presque Isle Counties (Table 5.6).

**Boundary Alternative C:
NOAA's Preferred Alternative**

Boundary Alternative C (north to Presque Isle Harbor, south to Sturgeon Point Lighthouse, and lakeward to longitude 83 degrees west) is NOAA's preferred boundary alternative. This boundary is preferred because it includes the greatest number of shipwrecks known to be in the Thunder Bay region, and encompasses the greatest area for protecting those shipwreck sites having probable or suspected locations in the region. The larger Sanctuary boundary would allow for continued research efforts to locate, identify, and assess these shipwrecks. Boundary Alternative C protects the known locations of the shipwrecks identified as having potential national historic significance.

Boundary Alternative C is an excellent complement to the maritime cultural landscape and is representative of the maritime history of the Thunder Bay region. The boundary is readily identifiable, marked by the Sturgeon Point Lighthouse to the south, and the Presque Isle Lighthouses to the north. Both Sturgeon Point

and Presque Isle Lighthouses have visitors' centers and museums, which allow for easy access by Sanctuary visitors. The lakeward boundary of the Sanctuary (longitude 83 degrees west) is also readily identifiable. Boundary Alternative C includes or is adjacent to all of the primary coastal wetlands and the islands of the Thunder Bay region.

Boundary Alternative C is adjacent to Negwegon State Park and its coastal historic and prehistoric sites. The Park contains approximately seven miles of undeveloped sandy and rocky beaches which provides access to the Sanctuary. Close proximity of the Sanctuary to Negwegon State Park helps foster the development of partnerships with the Park for education and research activities. Boundary Alternative C is also near many other state, county, and city coastal parks along the shoreline. Alpena is the central community to Boundary Alternative C. Boundary Alternative C is also adjacent to or nearby the communities of Harrisville, Black River, Ossineke, Presque Isle and Rogers City. This regional network of communities spanning three counties provides a diverse infrastructure for supporting Sanctuary programs, services, and visitors. The multiple political districts further strengthen the vision of cooperative and participatory management of the underwater cultural resources of the Thunder Bay region. All levels of government could share a collective responsibility to retain and protect those underwater cultural resources.

In summary, Boundary Alternative C is the

Table 5.3 Maritime cultural landscape.

Boundary	Lighthouses/ Lightsaving Stations	Other Historic and Prehistoric Coastal Sites	Islands	Coastal Communities	Diversity of Natural Landscape
A	Thunder Bay Island Lighthouse, Middle Island Lighthouse.	Devils River prehistoric shrine, Devils River burial ground, Norwegian Creek settlement, Hooley Creek settlement, Thunder Bay Island and Sugar Island commercial fishing camps.	Bird, Scarecrow, Sulpher, Grass, Crooked, Misery, Round, Sugar, Thunder Bay, Gull, Middle, and 15 unnamed Islands.	Alpena, Ossineke.	Wetlands of Squaw Bay; residential development of Partridge Point; Alpena City harbor and waterfront development; undeveloped rocky shoreline of North Point; residential development of Thunder Bay; undeveloped Islands with the exceptions of Middle Island and Thunder Bay Island Lighthouses; Middle Island Lighthouse as a visible boundary endpoint.
B	Same as Boundary A.	Same as Boundary A.	Same as Boundary A.	Same as Boundary A.	Sandy beach frontage at Negwegon Park; wetlands of Squaw Bay; residential development of Partridge Point; Alpena City harbor and waterfront development; undeveloped rocky shoreline of North Point; residential development of Thunder Bay; undeveloped Islands with the exception of Middle Island and Thunder Bay Island Lighthouses.
C	Same as Boundary A, and Sturgeon Point Lighthouse, Presque Isle Lighthouses.	Same as Boundary A.	Same as Boundary A, and Black River Island.	Same as Boundary A, and Harrisville, Black River, Presque Isle, Rogers City.	Sturgeon Point Lighthouse as a visible boundary endpoint; miles of sandy frontage at Negwegon State Park; wetlands of Squaw Bay, residential development of Partridge Point; Alpena City harbor and waterfront development; undeveloped rocky shoreline along North Point; minimal residential development of Misery Bay; undeveloped islands with the exception of Middle Island and Thunder Bay Island Lighthouses; minimal residential development from Rockport to Presque Isle; Presque Isle Lighthouse as a boundary endpoint.

Table 5.4 Accessibility to the Sanctuary resources, and associated facilities and services.

Boundary	Coastal Parks & Other Public Coastal Lands	Miles of Public Beaches (approximate)	Public Harbors, Marinas	Private Harbors & Marinas	Coastal Visitor Centers/ Museums
A	Bay View Park, Thompson Park, Blair Street Park, Mich-e-ke-wis Park, Ossineke (Sanborn) Park, Ossineke State Forest, Negwegon State Park	5.75	Alpena Municipal Marina	Partridge Point Marina	0
B	Same as Boundary A	6.0	Same as Boundary A	Same as Boundary A	0
C	Same as Boundary A, and Negwegon State Park, Huron National Forest	8.75	Same as Boundary A, and Presque Isle Harbor	Same as Boundary A	Sturgeon Point Lighthouse, Presque Isle Lighthouses

Table 5.5 Infrastructure for tourism, recreation, and Sanctuary support services.

Boundary	Coastal Communities	Water-based Recreation Services	Conference Facilities	Education/ Research Facilities	Public Boat Launching Facilities	Maritime Attractions
A	Alpena, Ossineke	Thunder Bay Divers, Trout Scout Chartering, Charlie's Charters, DES Charter Service, Fishin' Fun Charter Service, Lake & Stream Charter Service, Bay Charters, Bounty Hunter, Three Harbors	Alpena Community College, Alpena Civic Center, Alpena Holiday Inn	Alpena Community College	Alpena Municipal Marina, North Riverfront Park, Devil's River Mouth, Ossineke State Forest Campground, Snug Harbor	Jesse Besser Museum
B	Same as Boundary A	Same as Boundary A	Same as Boundary A	Same as Boundary A	Same as Boundary A, and Rockport	Same as Boundary A
C	Same as Boundary A, and Harrisville, Black River, Presque Isle, Rogers City	Same as Boundary A	Same as Boundary A	Same as Boundary A	Same as Boundary A, and Rockport, Presque Isle Harbor.	Same as Boundary A, and Sturgeon Point Lighthouse, Presque Isle Lighthouses

preferred boundary alternative because it protects a collection of shipwrecks that is representative of Great Lakes maritime history and has potential national historic significance. Boundary Alternative C best complements and enhances the cultural landscape and maritime history of the Thunder Bay region. The boundary is readily identifiable to Sanctuary visitors, staff, and enforcement personnel, and to other agencies with management responsibilities in the region. Adoption of this boundary provides high quality access for visitors using Sanctuary resources and for Sanctuary staff interacting with visitors.

3. REGULATORY ALTERNATIVES (REGULATIONS TO PROTECT UNDERWATER CULTURAL RESOURCES)

Regulatory alternatives describe substantive options for protecting underwater cultural resources of the Thunder Bay National Marine Sanctuary. The evaluation of regulatory alternatives was conducted as a series of meetings that included written materials developed by NOAA and the Thunder Bay Core Group (for a more complete discussion of this process, refer to Section 2, Background). As part of this process, NOAA and the Thunder Bay Core Group concluded that there was no evidence of ad-

Table 5.6 Effectiveness and efficiency of Sanctuary management.

Boundary	Ease of Boundary Recognition	# of Possible Agency Resources and Enforcement Personnel Accessible to Boundary	Visitor Safety Services
A	One visible endpoint with Middle Island Lighthouse; 150 ft contour line	Alpena County Sheriff's Marine Patrol (1 full time; volunteers; 1 30ft boat) 15 Coast Guard (1 full time; 1 seasonal; Coast Guard Auxiliary; 1 boat); Michigan State Police for dive recovery; Michigan DNR Conservation Officers	Alpena Community Hospital, recompression chambers in Kalamazoo, Grand Rapids, Marquette, and Milwaukee, WI
B	No visible endpoints (county lines); 83 degrees longitude west	Same as Boundary A	Same as Boundary A
C	Two visible endpoints- Sturgeon Point Lighthouse and Presque Isle Lighthouses; longitude 83 degrees west	Same as A plus, Alcona County Sheriff's Marine Patrol (2 part time; 1 boat) Presque Isle County Sheriff's Marine Patrol (1 full time; 1 boat); Michigan DNR Conservation Officers (2 in Alcona County with 1 boat)	Same as Boundary A

verse impacts upon natural resources. Because the national significance of Thunder Bay natural resources and ecosystems is not established, the conclusion was made that a comprehensive ecosystem management approach is not needed. The regulatory alternatives, therefore, focus only on underwater cultural resources.

The regulatory alternatives identified for the Thunder Bay National Marine Sanctuary are:

REGULATORY ALTERNATIVES

- A. State of Michigan: NOAA would adopt regulations that mirror State of Michigan law protecting underwater cultural resources.
- B. Other Sanctuaries: NOAA would adopt regulations similar to those used in other Sanctuaries to protect underwater cultural resources. The law would be consistent with State of Michigan law (*NOAA's preferred alternative*).

A. State of Michigan: NOAA would adopt Sanctuary regulations that mirror State of Michigan law protecting underwater cultural resources.

Under Regulatory Alternative A, NOAA would adopt Part 761, Aboriginal Records and Antiquities, of P. A. 451 (1994), as amended, and Part 325, Great Lakes Submerged Lands, of P. A. 451 (1994), as amended.

The Sanctuary regulations would mirror state

law and apply to the entire Sanctuary, rather than just the Thunder Bay Underwater Preserve. In addition, the Sanctuary regulations would provide for the control of “hand-taking” of artifacts from all locations within Sanctuary boundaries. Under Part 761, Aboriginal Records and Antiquities of P. A. 451, a person may recover abandoned property outside an underwater preserve without a permit if the abandoned property is not attached to or located near the immediate vicinity of and associated with a sunken aircraft or watercraft, and if the abandoned property is recoverable by hand without mechanical or other assistance. Under Regulatory Alternative A, “hand-taking” activities would be prohibited within the boundaries of the Sanctuary, including locations outside of the Thunder Bay Underwater Preserve. This represents the most significant change between state law and the Sanctuary regulations under Regulatory Alternative A.

B. Other Sanctuaries: NOAA would adopt regulations similar to those used in other Sanctuaries to protect underwater cultural resources. The regulations would be consistent with State of Michigan law (NOAA's preferred alternative).

Under Regulatory Alternative B, NOAA would adopt Sanctuary regulations that are generally used in other National Marine Sanctuaries to protect underwater cultural resources. The regulations would be consistent with the purpose and intent of state law under Part 761, Aboriginal Records and Antiquities, of P. A. 451 (1994), as amended, and Part 325,



Jesse Besser Museum

Figure 5.7 An ice boat on Thunder Bay around the turn of the 20th century.

Great Lakes Submerged Lands, of P. A. 451 (1994), as amended. These types of Sanctuary regulations have proven to be an effective safety net for protection of underwater cultural resources (*Craft v. National Park Service* 34 F. 3d 918 [9th Cir. 1994]).

In response to public comments on the DEIS/DMP, NOAA made several changes to Regulatory Alternative B which makes this alternative closer to Regulatory Alternative A.

The first change is the definition of “underwater cultural resource.” Several comments noted that the definition of “underwater cultural resource” in the draft Sanctuary regulations was

vague and too broad. NOAA is therefore revising the definition to make it more consistent with the State definition of “abandoned property” and provide more predictability to Sanctuary users about what NOAA is managing and protecting.

The State definition of “abandoned property” (which is the state term for underwater cultural resources) is:

“an aircraft, a watercraft, including a ship, boat, canoe, skiff, raft, or barge; the rigging, gear, fittings, trappings, and equipment of an aircraft or watercraft; the personal property of the officers, crew, and passengers of an aircraft or watercraft; and the cargo of an aircraft or

watercraft which have been deserted, relinquished, cast away, or left behind for which attempts at reclamation have been abandoned by owners and insurers. Abandoned property also means materials resulting from activities of historic and prehistoric Native Americans."

NOAA is proposing in the final regulations to adopt the state definition of "abandoned property" with the following modifications:

- The regulations would apply to all shipwrecks, not just those that are abandoned;
- References to "aircraft" are deleted;
- To be covered by the Sanctuary regulations, the underwater cultural resource must exist in the Sanctuary at the time of Sanctuary designation; and
- Historical remnants of docks and piers are added.

The definition of "underwater cultural resource" in the draft final Sanctuary regulations is:

any sunken watercraft, including a ship, boat, canoe, skiff, raft, or barge; the rigging, gear, fittings, trappings, and equipment of any watercraft; the personal property of the officers, crew, and passengers of any watercraft; and the cargo of any watercraft, that existed prior to the effective date of Sanctuary designation. Underwater cultural resource also means historical

remnant of docks or piers or associated material, or materials resulting from activities of historic and prehistoric Native Americans. For any other underwater cultural resource to be considered a Sanctuary resource, it must meet the criteria set forth in § 922.196.

The second change is the wording of one of the prohibitions in the Sanctuary regulations. NOAA included language in the draft final regulations that is similar to language in Part 761, Aboriginal Records and Antiquities. The prohibition now reads, "recovering, altering, destroying, possessing, or attempting to recover, alter, destroy, or possess an underwater cultural resource."

The third change is to add a prohibition on the use of grappling hooks and other anchoring devices on underwater cultural resource sites that are marked with a mooring buoy.

The Sanctuary regulations, (15 CFR § 922.192(a)(1)-(3)) under Regulatory Alternative B include three prohibitions:

- 1) Recovering, altering, destroying, possessing, or attempting to recover, alter, destroy, or possess an underwater cultural resource;
- 2) Drilling into, dredging or otherwise altering the lakebottom associated with underwater cultural resources, including contextual information; or constructing, placing or abandoning any structure, material or other matter on the lakebottom associated with underwa-

ter cultural resources, except as an incidental result of:

- i) anchoring vessels;
 - ii) traditional fishing operations; or
 - iii) minor projects that do not adversely affect underwater cultural resources; and
- 3) Using grappling hooks or other anchoring devices on underwater cultural resource sites that are marked with a mooring buoy.

In accordance with the Programmatic Agreement described in Section 3 and Section 106 of the National Historic Preservation Act, applications for permits would be reviewed by the State Archaeologist and NOAA. Permits that strictly adhere to the Sanctuary regulations and/or relevant state law would be deemed to be in compliance with Section 106 of the National Historic Preservation Act and would not require approval of the federal Advisory Council on Historic Preservation. Permits that do not strictly adhere to the Sanctuary regulations and/or relevant state law would be subject to Section 106 review. See Figure 5.8 for an overview of the Section 106 process.

A permit may be issued if the proposed activity satisfies the permit requirements, and if the recovery of the underwater cultural resource is in the public interest, is part of research to present historical information for public use, or is necessary to protect the resource, preserve historical information, or further the policies of the Thunder Bay NMS.

The Sanctuary regulations as proposed under Regulatory Alternative B, would expand coverage to all shipwrecks, and not just “abandoned” shipwrecks, as defined under state law and the federal Abandoned Shipwreck Act. The Sanctuary regulations would, therefore, serve as a federal safety net for state underwater cultural resources that the State of Michigan is unable to protect under either state law or the Abandoned Shipwreck Act.

For the full text of NOAA’s draft final regulations, refer to Section 3, Management Plan (Attachment 1, pages 54 – 74).

Regulatory Alternative B: NOAA’s Preferred Alternative

NOAA’s preferred alternative is Regulatory Alternative B, to adopt regulations similar to those used in other National Marine Sanctuaries to protect underwater cultural resources (Part 922, National Marine Sanctuary Program Regulations). The Sanctuary regulations would be consistent with State of Michigan law protecting underwater cultural resources. Protection would be provided for underwater cultural resources that are not covered by existing state law (i.e., property that is not abandoned), and would provide a better safety net of protection for underwater cultural resources that are covered by state law. It is important to note that under Regulatory Alternative B, the state permit programs under Part 761, Aboriginal Records and Antiquities of P. A. 451 and Part 325, Great Lakes Submerged Lands of P. A. 451 would remain

Figure 5.8 The National Historic Preservation Act, a look at the Section 106 Review.

The National Historic Preservation Act:
A Look at the Section 106 Review*

Step 1: Identify and evaluate historic properties.

The Federal agency responsible for an undertaking begins by identifying the historic properties the undertaking may affect. To do this, the agency first reviews background information and consults with the State Historic Preservation Officer (SHPO) and others who may know about historic properties in the area.

Step 2: Assess effects.

If historic properties (properties included in or eligible for inclusion in the National Register) are found, the agency then assesses what effect its undertaking will have on them. Again, the agency works with the SHPO, and considers the views of others. The agency can make one of three determinations:

- No effect: the undertaking will not affect historic properties;
- No adverse effect: the undertaking will affect one or more historic properties, but the effect will not be harmful;
- Adverse effect: the undertaking will harm one or more historic properties.

Step 3: Consultation.

If an adverse effect will occur, the agency consults with the SHPO and others in an effort to find ways to make the undertaking less harmful. Others who are consulted, under various circumstances, may include local governments, Indian tribes, property owners, other members of the public, and the Council. Consultation is designed to result in a Memorandum of Agreement (MOA), which outlines measures agreed upon that the agency will take to reduce, avoid, or mitigate the adverse effect.

Step 4: Council comment.

The Council may comment during step 3 of the process, by participating in consultation and signing the resulting MOA. Otherwise, the agency obtains Council comment by submitting the MOA to the Council for review and acceptance.

Step 5: Proceed.

If an MOA is executed, the agency proceeds with its undertaking under the terms of the MOA. In the absence of an MOA, the agency head must take into account the Council's written comments in deciding whether and how to proceed.

Alternative approaches.

The Section 106 regulations also spell out three alternative means of complying with Section 106. These are:

- Programmatic Agreements among an agency, the Council, one or more SHPOs, and others;
- Counterpart regulations developed by an agency and approved by the Council;
- An agreement between the Council and a State, which substitutes a State review system for the standard Section 106 review process.

*Source: Introduction to Federal Projects and Historic Preservation Law
Participant's Coursebook p. III-148.

in effect. The Sanctuary regulations would build upon and strengthen these existing state programs.

While Part 761, Aboriginal Records and Antiquities of P. A. 451 and the federal Abandoned Shipwreck Act cover only abandoned property, the Sanctuary regulations would be broader and could regulate underwater cultural resources that are not abandoned. Implementation of the Sanctuary regulations would be limited, however, to activities in which no "taking" of private property would occur. While Sanctuary regulations could not prohibit a person who owns artifacts on a non-abandoned shipwreck from removing these artifacts, the Sanctuary program could require that individual to provide a report to NOAA and the State of Michigan on the contents removed and to videotape the shipwreck for documentation purposes. This broader coverage of underwater cultural resources is possible because NOAA would become a trustee of underwater cultural resources if Thunder Bay is designated as a National Marine Sanctuary.

The provision for protecting non-abandoned shipwrecks is more important due to decisions in various courts regarding the issue of abandonment. Some court decisions make it more difficult for states to assert that shipwrecks are abandoned.

If states are increasingly limited in the number of shipwrecks and other underwater cultural resources that are under their jurisdiction, the

protection of these resources is reduced. By adopting Sanctuary regulations that are similar to those used in other Sanctuaries to protect underwater cultural resources, NOAA would have greater authority to protect more of these resources.

Along with federal designation and regulations, public concerns arise in regard to federal intrusion into state and local matters and the loss of state management and control over state resources. These concerns are addressed in general terms as part of the administrative alternatives. Particular attention is given to the proposed provision that provides for administration of permits by the State of Michigan for certain activities affecting underwater cultural resources.

What Does the State of Michigan Regulate Now?

Aboriginal Records and Antiquities (Part 761 of Public Act 451)

- Requires a joint permit from the Department of Environmental Quality and the Department of State for recovering, altering, or destroying abandoned property.
- Allows for the “hand-taking” (the taking of artifacts without mechanical assistance) of certain abandoned property outside underwater preserve boundaries.
- Applies only to “abandoned” property (e.g., shipwrecks and associated artifacts that have been deserted, relinquished, cast away, or left behind, and for which attempts at reclamation have been abandoned by owners and insurers).
- The DEQ may assess fines for violations.

Great Lakes Submerged Lands (Part 325 of Public Act 451)

- Requires a permit and/or lease, deed, or other agreement from DEQ for the following activities on Great Lakes bottomlands:
 - dredging and/or filling bottomlands below the ordinary high water mark;
 - placement or alteration of a structure on bottomlands below the ordinary high water mark; and
 - development, construction, and operation of a marina or other commercial structures.
- The DEQ may issue minor permits, as defined under the Part 325 administrative rules, if the proposed activity of a minor nature is not controversial, has minimal adverse environmental impact, etc.
- The DEQ may assess fines for violations.

Figure 5.9 What the State of Michigan regulates now.

What is Different in the Sanctuary Regulations?

If the Thunder Bay National Marine Sanctuary is designated, relevant State of Michigan law and administrative rules (Part 761 and Part 325) will continue to be implemented in the Sanctuary boundary.

The following aspects of the Sanctuary regulations are different than what is currently regulated under State of Michigan law:

- “Hand-taking” of artifacts outside the Thunder Bay Underwater Preserve, but still within the Sanctuary boundary, is prohibited.
- Underwater cultural resources are protected regardless of whether they are “abandoned.”
- The use of grappling hooks and other anchoring devices is prohibited on underwater cultural resource sites that are marked with a mooring buoy.
- Permit applications are more detailed to satisfy the Federal Archaeology Program guidelines.
- As an additional enforcement mechanism, NOAA may assess civil penalties under the National Marine Sanctuaries Act for violation of Sanctuary regulations.

Figure 5.10 What is different in the Sanctuary regulations.

What Will the Sanctuary Regulations NOT DO?

The Sanctuary regulations:

- will not assess a user fee for individuals to be in the Sanctuary;
- will not regulate or manage natural resources such as wetlands, fish, wildlife, or water;
- will not regulate activities on land; the inland boundary of the Sanctuary will stop at the ordinary high water mark;
- will not prohibit fishing activities;
- will not limit access to fishing areas;
- will not create “no fishing” zones; and
- will not interfere with fish stocking programs or fishery research projects.

Figure 5.11 What the Sanctuary regulations will not do.

4. ADMINISTRATIVE ALTERNATIVES

There are two administrative alternatives related to how the Sanctuary regulations would be administered if Thunder Bay is designated as a National Marine Sanctuary.

ADMINISTRATIVE ALTERNATIVES

A. Permits issued by NOAA: All Sanctuary permits would be issued solely by NOAA. These Sanctuary permits would be in addition to permits issued by the State and/or other federal agencies. The State of Michigan would be involved in the review of Sanctuary permits through the National Historic Preservation Act Section 106 process.

B. Permits issued either by the State of Michigan, a federal agency, or NOAA: (1) the State of Michigan would continue to issue permits under state law related to underwater cultural resources; (2) for activities involving permits from other federal agencies, NOAA would address Sanctuary concerns through the review and authorization, and if necessary, the placing of conditions on the federal permits; or (3) for an activity adversely impacting underwater cultural resources but that requires neither a state permit nor a permit from another federal agency, a Sanctuary permit would need to be obtained directly from NOAA in order to conduct the activity (*NOAA's preferred alternative*).

A. Permits issued by NOAA: All Sanctuary permits would be issued solely by NOAA. These Sanctuary permits would be in addition to permits issued by the State and/or other federal agencies. The State of Michigan would be involved in the review of Sanctuary permits through the National Historic Preservation Act Section 106 process.

Under Administrative Alternative A, the State of Michigan would continue to administer its permit programs under Part 761, Aboriginal Records and Antiquities of P.A. 451 (1994) as amended, and Part 325, Great Lakes Submerged Lands of P.A. 451 (1994) as amended. However, in addition to applying for a state permit, the permit applicant would also apply for a Sanctuary permit if the activity was prohibited by Sanctuary regulations. For example, if an individual proposed to recover artifacts from an abandoned shipwreck, that individual would apply for both a state permit under Part 761 and a Sanctuary permit. The State of Michigan would have the option of being involved in the review of all Sanctuary permits through the National Historic Preservation Act Section 106 process.

B. Permits issued either by the State of Michigan, a federal agency, or NOAA: (1) The State of Michigan would continue to issue permits under state law related to underwater cultural resources; (2) for activities involving permits from other federal agencies, NOAA would address Sanctuary concerns through the review

and authorization, and if necessary, the placing of conditions on the federal permits; or (3) for an activity adversely impacting underwater cultural resources but that requires neither a state permit nor a permit from another federal agency, a Sanctuary permit would need to be obtained directly from NOAA in order to conduct the activity.

The three scenarios described in Administrative Alternative B are as follows:

1. The State of Michigan would issue a state permit for an activity related to underwater cultural resources if that activity could be conducted consistent with Michigan law. If the state permit is certified by the State Archaeologist as consistent with the Programmatic Agreement among NOAA, the State, and the federal Advisory Council on Historic Preservation, the activity will have met the criteria of Section 106 of the National Historic Preservation Act and of the Sanctuary program. Thus, the activity would be deemed authorized by NOAA and no separate Sanctuary permit would be required. For example, if an individual proposed to recover artifacts from an abandoned shipwreck within the Thunder Bay Underwater Preserve, that individual would apply for a State of Michigan permit under Part 761, Aboriginal Records and Antiquities, of P.A. 451. If the state certified the permit as consistent with the Programmatic Agreement, then the individual would not have to obtain a Sanctuary permit, because the Part 761 permit would address all Sanctuary concerns.

2. For activities for which a federal permit is required (most likely a Corps of Engineers permit), NOAA would review and “authorize” the federal permit to address any concerns of the Sanctuary program. NOAA would coordinate with other federal agencies to determine which permits needed a NOAA authorization. If necessary, NOAA would place conditions on the federal permit to address Sanctuary concerns. The permit applicant would follow the existing notification and review procedures laid out in 15 C.F.R. § 922.194.

3. For an activity adversely impacting underwater cultural resources that requires neither a state permit nor a permit from another federal agency, the applicant would apply for a Sanctuary permit directly from NOAA in order to conduct the activity. This could occur for activities involving “hand-taking” outside the Thunder Bay Underwater Preserve but still within the Sanctuary boundary, or recovery of artifacts from a shipwreck that is not abandoned and is located anywhere within the Sanctuary boundary.

In summary, the permit application procedure for any activity that is currently regulated under State of Michigan law related to the protection of underwater cultural resources would remain the same. If a federal permit is required in addition to a state permit, NOAA would review that federal permit for NOAA authorization, but the applicant would not apply directly to NOAA for a Sanctuary permit. If an activity is proposed that is prohibited by Sanctuary regulations, and no state

or federal permit program exists to authorize the activity, the applicant would apply directly to NOAA for a Sanctuary permit. Sanctuary permits would be issued from the Thunder Bay National Marine Sanctuary office in Alpena. NOAA anticipates that this would be a rare situation, given that most activities would require an existing state or federal permit.

**Administrative Alternative B:
NOAA's Preferred Alternative**

NOAA prefers Alternative B because it relies on the existing state permitting program for many of the permits that will be issued. If Sanctuary concerns can be addressed through the issuance of a state permit and through Section 106 of the National Historic Preservation Act, NOAA does not believe that a separate Sanctuary permit is necessary. This alternative takes into account the well-established permit program at the state

level. If the applicant is applying for a permit to conduct an activity that is already regulated by the State of Michigan, the applicant would not do anything different if the Sanctuary is designated.

Alternative B also allows Sanctuary concerns to be addressed through the review and authorization by NOAA of the issuance of federal permits. The permit applicant would apply for a federal permit (e.g., from the Corps of Engineers). NOAA would work with the federal agency to ensure that there would be no adverse impact on underwater cultural resources; this would result in the authorization of the federal permit.

NOAA believes that the great majority of activities in the Sanctuary would be covered by either an existing state or federal permit. NOAA expects, therefore, that few applicants will be required to apply directly to NOAA for a Sanctuary permit.

Section 6
Environmental
and
Social-Economic
Consequences of the Alternatives



SECTION 6

ENVIRONMENTAL & SOCIAL-ECONOMIC CONSEQUENCES OF THE ALTERNATIVES

- Sanctuary designation will improve the protection and management of underwater cultural resources.
- The total economic impact of Sanctuary designation is estimated at \$5.8 million in sales, \$3.3 million in income, and nearly 180 full and part-time jobs within five years.
- The Sanctuary will provide national recognition of the Thunder Bay region, contribute to outdoor recreation experiences, and enhance educational opportunities for visitors and residents.
- Sanctuary designation is not expected to have negative social-economic impacts because no additional regulations are proposed that will eliminate or curtail recreation or commercial activities.
- Negative impacts related to congestion or other user conflicts can be moderated through comprehensive management.

A. INTRODUCTION

An analysis and assessment of impacts associated with proposed federal actions is a requirement of the National Environmental Policy Act (42 U.S.C. 4321 et seq.) *Impact assessments* provide information that is critical in making effective, efficient, and equitable decisions involving people and the physical resources of concern. The physical resources of concern in this FEIS/MP are underwater cultural resources.

This section assesses the environmental, social, and economic impacts of alternatives for the Thunder Bay National Marine Sanctuary. In this case, environmental impacts are defined as impacts on underwater cultural resources and associated bottomlands. Social-economic impact assessments help predict “how implementing the management strategies will directly and indirectly

affect user groups, communities, and/or industries, as well as the local economy and overall quality of life” (Wellman and Cluett 1996). The predictions are based on an understanding of existing environmental, social, and economic conditions, and estimates of changes to existing conditions.

The assessment of social-economic impacts of the Thunder Bay National Marine Sanctuary is based on: (1) limited secondary sources of information describing the existing social conditions and trends in the Thunder Bay region (especially Alpena County), (2) the economic impact assessment (EIA) developed by Mahoney et al. (1996) specifically for the Sanctuary, and (3) comments from the Thunder Bay Core Group and other public comments received during the Sanctuary feasibility process.

B. UNDERWATER CULTURAL RESOURCES

Underwater cultural resources include shipwrecks, historical remnants of docks and piers and materials from historic and prehistoric Native Americans. Shipwrecks have been the focus of most historical research, recreational activity, and public interest involving underwater cultural resources in the Great Lakes region. About 160 shipwrecks are believed to be present within the Sanctuary boundary. Hundreds of other underwater cultural resources may exist within the boundary, but they have not been surveyed systematically.

Underwater cultural resources exist in dynamic physical environments. In particular, sites within nearshore areas and shallows are often subject to the actions of high-energy waves, longshore currents, and ice movement. Certain sites are also susceptible to vandalism, theft, and unintentional damage due to a variety of human factors.

There is general agreement that underwater cultural resources are impacted by environmental processes and human activities that cause deterioration of cultural materials over time. However, the extent of these impacts on underwater cultural resources in the Sanctuary boundary has not been documented.

C. IDENTIFICATION OF STAKEHOLDERS (INCLUDING USER GROUPS)

Underwater cultural resources are used by people who are stakeholders in these resources. *Stakeholders* can be viewed as individuals, groups, or organizations that influence or are affected by the use and management of particular resources. Defining people in terms of different stakeholders helps organizations better understand and respond to a diversity of needs, perceptions, expectations, concerns, and issues relating to underwater cultural resources.

Different groups of stakeholders in the underwater cultural resources of the Thunder Bay region include recreational divers, heritage tourists, dive and tourism business people, museum professionals, historic preservationists, history enthusiasts, researchers, educators, and state and federal resource managers (Vrana and Mahoney 1993). Other publics may not benefit directly from these resources, but may enjoy the historical information provided by shipwrecks and the maritime heritage of the region.

Many of these stakeholders supported designation of the Thunder Bay Underwater Preserve in 1981 and advocated the evaluation of the region for inclusion in NOAA's National Marine Sanctuary Program, beginning in 1982 (Vrana 1989). Numerous actions have been taken by local stakeholders to better coordinate activities, services, and planning associated with the Thunder Bay Underwater Preserve.

The most active coordinating organization has been the Thunder Bay Underwater Preserve Committee. The Committee is an unincorporated advocacy group organized in 1980 to enhance promotion, management, and development of the Preserve. The Committee has been associated with the Alpena Area Chamber of Commerce since 1982. Other local organizational stakeholders in the Preserve have included the Jesse Besser Museum, Northeast Michigan Community Foundation, Alpena General Hospital, Alpena Community College, the City of Alpena, historic preservation organizations, and local dive and water sport related businesses.

The Thunder Bay Divers has been the largest retail dive shop and dive charter business for the region since designation of the Preserve in 1981. The Jesse Besser Museum has developed a number of exhibits about the Preserve, shipwrecks, and maritime heritage of the region. Most of these exhibits have been displayed on a temporary basis. Although recommended in local planning and development documents, there are no active plans to establish an information and interpretive center for the Preserve to showcase the underwater cultural resources and maritime heritage of the region.

D. SOCIAL-ECONOMIC CHARACTERISTICS

The population of Alpena County has been decreasing since the late 1970s, and according to the 1990 population figures, totals 30,605 (U.S. Department of Commerce 1992). The largest

and most central coastal community in the Thunder Bay region is the City of Alpena (Alpena County) with a population of 11,354 (1990). Other incorporated coastal communities in the Thunder Bay region include Ossineke Township (Alpena County) with a population of 1,652; Alcona Township, including Black River (Alcona County) with a population of 906; Haynes Township, including Sturgeon Point (Alcona County) with a population of 549; and Presque Isle Township (Presque Isle County) with a population of 1,312 (U.S. Department of Commerce 1992).

Over 85% of coastal property adjacent to the Sanctuary boundary is in private ownership (Ayres et al. 1982). Negwegon State Park comprises much of the total of public coastal property. The Park is located in the southeast corner of Alpena County.

The per capita income of Alpena County in 1993 was \$16,559. Most employment in 1993 was in private, nonfarm businesses (78%), and government (18%). About 23% of employment and 17% of earnings were in service businesses; about 15% of employment and 27% of earnings were in manufacturing (Michigan Department of Commerce 1996). Tourism and recreation are important parts of the service sector.

Employment in manufacturing industry categories in northeast lower Michigan has declined slowly since the late 1970s (ZHA Inc. et al. 1990). A goal of economic development for Alpena County and the City of Alpena is to maintain the

higher paying jobs of manufacturing (Kolasa, personal communication 1992; Midwest Research Institute 1988; Ayres et al. 1982).

The principal economic base employers in Alpena County are the Alpena General Hospital, Besser Corporation, ABT Company, Inc., LaFarge Corporation, Presque Isle Corporation, Fletcher Paper Corporation, and NEMROC, Inc. These employers are involved primarily in regional medical care, and the manufacture of wood and cement products. About 16% of the employed County work force is on the payroll of these seven employers. The 1994 average unemployment rate for Alpena County was 11.3%; the 3-year average unemployment rate (1990 – 1992) was 12.1% (Michigan Department of Commerce 1996, 1993).

The median age of Alpena County residents is 35.3 years. About 25% of the Alpena County population is age 55 years and older; 15% of the County population is age 65 years and older (U.S. Department of Commerce 1992). Income from retirement provides approximately 44% of all economic support in the region. This source of income is more important than manufacturing and tourism (ZHA Inc. et al. 1990).

The Midwest Research Institute (1988) conducted a situational analysis (or social assessment) of the social and economic conditions of Alpena County to help develop an economic adjustment strategy for the County. The situational analysis included focus groups, surveys, and interviews with community leaders. Con-

clusions from the situational analysis are summarized as follows:

Strengths of Alpena's social and economic conditions include: a superior natural setting near major state parks, lakes, and stream fishing, with boating and water sports activities, which promises further development opportunities in tourism and recreation; talented people in the community; residents of the community like the quality of life available and want to remain in Alpena; Alpena is a growing retail center with a record of increasing retail sales; employment in the service industries is growing, and general employment opportunities in these industries are favorable; Alpena County has a diversified manufacturing base that can provide substantial employment stability for a segment of the existing work force; Alpena County has a viable infrastructure including adequate to good streets, sewers, and utilities; availability of professional skills; superior medical facilities to support the growing needs of an aging population; a growing enrollment and the recent addition of advance study courses at Alpena Community College; job training facilities; available industrial sites; a growing awareness of the importance of providing an attractive business climate to prospective developers and business persons; an awareness that planning is vital to economic development; and recent goal setting by the Alpena city government.

Community residents and leaders perceive that the current economic condition in Alpena County is weak. Limitations in the local business [and social] climate include: a lack of consensus on how to resolve major issues facing the community and region; a declining total population and an aging population, which reduces the tax base in the region while requiring an increase in the use and quality of social services; the loss of some younger members of the work force, which reduces the economic viability of the community in its industrial promotion efforts and decreases the tax base; a very slow growth for most manufacturing activities; a somewhat conservative atmosphere in investment circles in terms of providing loans; distance from emerging markets, which has fostered the perception that Alpena is too isolated in relation to other Michigan business hubs; limited and unreliable air service and the need for better highway access to facilitate commercial transport; and no strategy for coordinating and implementing local development plans.

A breakdown of selected demographic and housing characteristics for Alpena County is available from the U.S. Department of Commerce, Bureau of the Census (1992).

Employment projections for the Northeast Lower Michigan Service Delivery Area (SDA)

(Alcona, Alpena, Cheboygan, Crawford, Montmorency, Oscoda, Otsego, and Presque Isle Counties) during 1988 to 2000 indicate that “service workers will continue to grow faster than total employment. This occupational group is expected to account for more job growth than any other broad group, increasing its share of total employment in the Northeast Lower Michigan SDA from 19.2% in 1988 to 20.6% in 2000” (Michigan Department of Labor 1991:37). Service workers, as an occupational group, include tourism-related job categories and exclude private household workers.

An important component of population change in northeast lower Michigan has been an increase in the number of people age 65 and over, which increased by over 50 percent in the 1970s. The trend in aging of the resident population in northeast lower Michigan and Alpena County is expected to continue (ZHA Inc. et al. 1990).

E. IMPACTS OF SANCTUARY DESIGNATION ALTERNATIVES

SANCTUARY DESIGNATION ALTERNATIVES

A. No Sanctuary designation: NOAA would not designate Thunder Bay as a National Marine Sanctuary (the “status quo” or “no action” alternative). Thunder Bay would continue to be administered as a State of Michigan Underwater Preserve.

B. Sanctuary designation: NOAA would designate and establish the Thunder Bay National Marine Sanctuary. All governmental and nongovernmental entities would work together to comprehensively manage the underwater cultural resources of the Thunder Bay region in the context of the maritime cultural landscape (*NOAA's preferred alternative*).

1. IMPACTS OF SANCTUARY DESIGNATION ALTERNATIVE A

Thunder Bay and adjoining waters would not be designated as a National Marine Sanctuary under Designation Alternative A. Instead, the current focus of shipwreck management would remain with local and state organizations that are involved with the Thunder Bay Underwater Preserve. The current positive impacts associated with the Thunder Bay Underwater Preserve in protection of shipwrecks would continue to be realized under Alternative A. The State of Michigan has adequate laws to protect "abandoned" shipwrecks and other underwater cultural resources. However, there is a recognized lack of local and state personnel and financial resources for conducting comprehensive management of underwater cultural resources in the Thunder Bay region.

Scuba diving tourism associated with the Thunder Bay Underwater Preserve is not expected to increase at the rates anticipated by designation of a national travel destination area, such as the Sanctuary (Mahoney, et al. 1996). As an ex-

ample, dive charter activity in the Preserve appears to have leveled off in the five-year period of 1990 – 1995 (Thunder Bay Divers 1994; Barnhill, personal communication 1996). It is anticipated that scuba diving activity would remain constant or slightly decrease in the Thunder Bay region without better coordination of services and marketing by stakeholders. This prediction is based on the recent trend in dive charter activity, and the increasing competitiveness of the diving industry as a whole in the Great Lakes region.

Simple extrapolation of past trends indicates an annual growth rate of 5 to 10 percent in the Michigan travel and tourism industry through the year 2000 (Holecek 1995:19). Current efforts to encourage eco-tourism and heritage tourism are expected to continue in promoting northeast Michigan and the Thunder Bay region as a travel destination. The numbers of these types of visitors (and associated social-economic impacts) would probably increase, although not at the rates expected with the development and marketing of a major water-based attraction like the Thunder Bay National Marine Sanctuary (Mahoney, personal communication 1996). Presently, there is no major cultural resource-based attraction that would identify the Thunder Bay region as a primary destination for ecotourists or heritage tourists. A Sanctuary would attract the attention of organizations, (e.g., travel writers, conservation and heritage organizations) that can help promote the area as a destination.

2. IMPACTS OF SANCTUARY DESIGNATION ALTERNATIVE B

Under this alternative, NOAA would designate Thunder Bay as a National Marine Sanctuary. Designation of the Sanctuary would enhance the use and protection of underwater cultural resources (particularly shipwrecks) and the lakebottom directly associated with those resources. Protecting underwater cultural resources to insure their long-term use and integrity for present and future generations would be a primary function of the Thunder Bay NMS. Protecting the 160 shipwrecks mentioned in historical records (including those having national historic significance) and the other underwater cultural materials and prehistoric sites is important to maintaining and enhancing the recreational, educational, and scientific values of these resources. NOAA would provide supplemental financial resources for protection, education, and research of the underwater cultural resources.

The Sanctuary would provide supplemental protection for underwater cultural resources that are not defined as “abandoned” under state law or the federal Abandoned Shipwreck Act. The Sanctuary regulations, as proposed under Regulatory Alternative B, would expand coverage to all shipwrecks, and not just “abandoned” shipwrecks. The Sanctuary regulations would, therefore, serve as a federal safety net for underwater cultural resources that the State of Michigan may be unable to protect under state law or the Abandoned Shipwreck Act.

The Thunder Bay National Marine Sanctuary would perform a variety of functions related to resource protection, education, and research. For example, it would:

- Coordinate agencies, organizations, and businesses to identify and address management issues that focus on underwater cultural resources and maritime heritage. Examples are the infestation of zebra mussels on shipwrecks and their impacts on recreational diving experiences, and potential user conflicts in the Bay.
- Provide educational leadership to develop and implement collaborative education programs that meet the needs and interests of local schools, residents, and visitors to the Sanctuary.
- Support a scientific research and monitoring program focusing on underwater cultural resources. Initial research activities would provide baseline inventory information on which to base management decisions.
- Develop and maintain a mooring buoy system to provide safe access with minimum impact to the underwater cultural resources and help make the location of sites more visible to both divers and non-divers.
- Inventory and assess Sanctuary underwater cultural resources, as well as document existing and potential threats (both natural and human induced) to these resources.

All of these activities would contribute to the comprehensive management of the Thunder Bay region's underwater cultural resources. Without the ability to conduct these activities, fewer shipwrecks and other underwater cultural resources would be protected adequately; fewer personnel would be available for education on Thunder Bay's maritime heritage; and fewer research dollars would be available for documenting the nationally significant shipwrecks.

Although the Sanctuary designation process has stimulated interest in Great Lakes education and the need for a Maritime Heritage Center, it is unlikely that such a facility will be constructed without Sanctuary designation. This is due primarily to the lack of local and state resources (e.g., staff, money) dedicated and/or available to develop and maintain such a facility.

Designation of the Thunder Bay National Marine Sanctuary is expected to benefit underwater cultural resources and the lakebottom directly associated with those resources. Because the Sanctuary will not regulate fish or other natural resources, designation of the Sanctuary will have no significant impact on natural resources in the region.

Projections of Economic Impacts for Sanctuary Designation Alternative B

If the Thunder Bay National Marine Sanctuary is designated, NOAA will invest in the comprehensive management of underwater cultural resources within the Sanctuary boundary. This

investment will include the development of programs, facilities, and services for underwater cultural resource protection, education, and research.

An *Economic Impact Assessment (EIA)* is commonly used to help determine whether a proposed federal action (such as Sanctuary designation) is a wise investment of public funds. An EIA was completed in 1996 by Michigan State University to provide estimates of the potential economic impacts associated with designation of the Thunder Bay National Marine Sanctuary (Figure 6.1). The following information is excerpted primarily from the introduction and results of Mahoney et al. (1996).

The EIA provides estimates of the potential direct and total (direct plus indirect plus induced) economic impacts associated with different Sanctuary "development-use scenarios" over a five-year period (Table 6.1). The economic impacts are linked to the increasing use of the Sanctuary by visitors to the Thunder Bay region, the operating budget of the Sanctuary, and support from Sanctuary partners.

An input-output model was used to generate estimates of these impacts. An input-output model traces the flows of economic activity between different sectors within a regional economy.

The EIA concentrates on the potential positive economic impacts of the Sanctuary. Sanctuary designation is not expected to have any signifi-

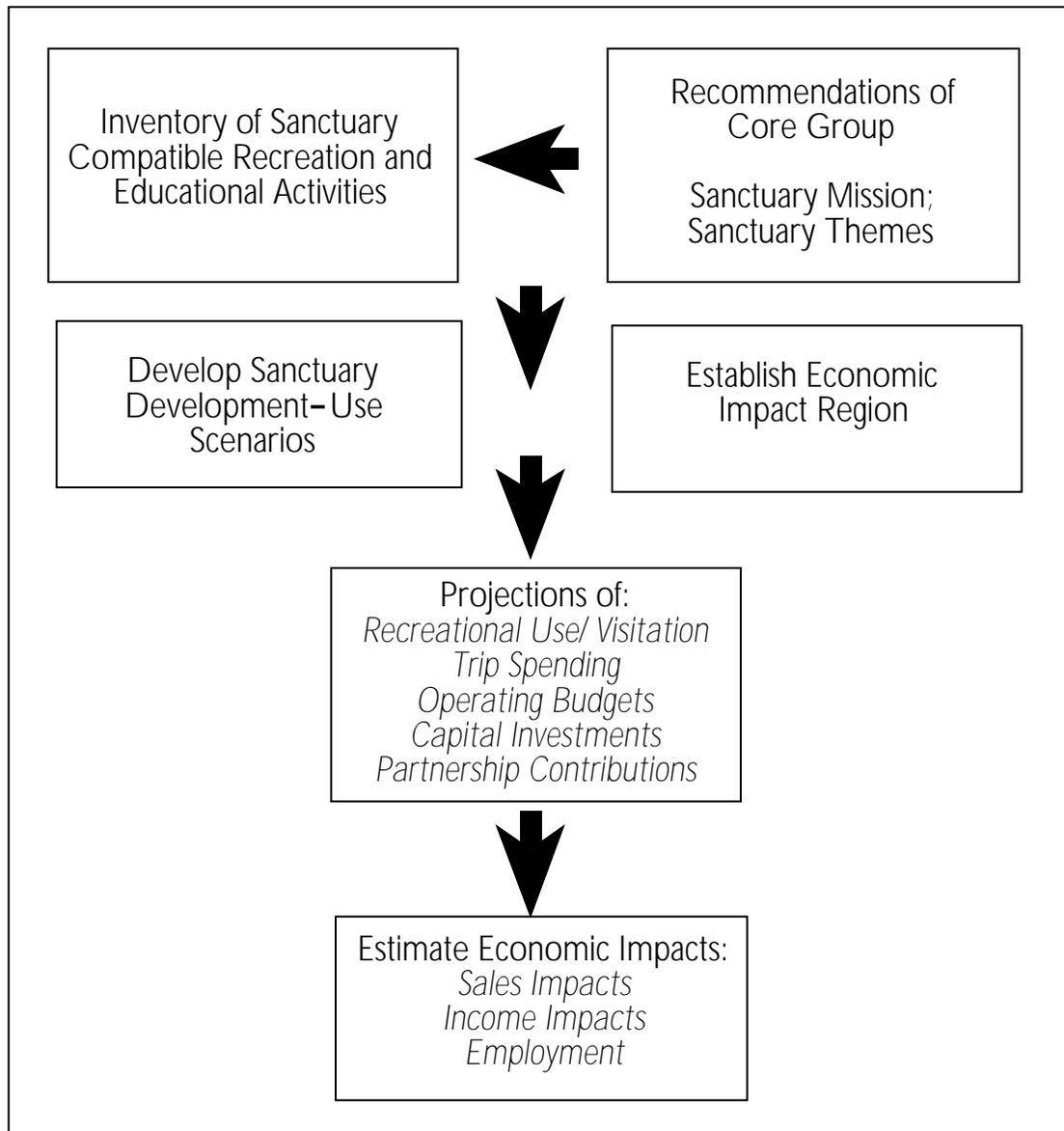


Figure 6.1 Method of estimating the economic impacts of the Thunder Bay National Marine Sanctuary.

cant negative economic impacts because no additional Sanctuary regulations are being proposed that would eliminate or curtail existing recreational or commercial activities (e.g., sport fishing and hunting, commercial fishing, charter operations, commercial shipping).

The EIA does not make any attempt to estimate the potential non-monetary benefits of the

Sanctuary to tourists, resident recreationists, or local publics, such as school children, environmental organizations, or community improvement associations. Likewise, the EIA does not quantify the potential negative externalities (e.g., additional crowding at local attractions and facilities), or fiscal impacts such as additional public service costs that could be associated with increased tourism generated by the Sanctuary.

Table 6.1 Development-use scenarios for the Thunder Bay National Marine Sanctuary.

	Year 1	Year 2	Year 3	Year 4	Year 5
Recreation and Education Trips					
Scuba diving trips	1,200	1,350	1,500	1,800	2,000
Nature-based recreation (day trips)	800	1,400	1,900	2,400	3,000
Nature-based recreation (overnight trips)	1,100	1,800	2,500	3,300	4,000
Kayaking/canoeing (day trips)	200	250	275	300	350
Kayaking/canoeing (overnight trips)	750	900	1,000	1,200	1,350
Sightseers (day trips)	900	1,500	3,000	6,000	9,000
Sightseers (overnight trips)	1,200	2,000	4,000	8,000	12,000
Gt. Lakes education – student contacts			8,000	10,000	12,000
Total Party Trips	6,150	9,200	14,175	23,000	31,700
NOAA Operating Budgets*	\$150,348	\$173,890	\$199,000	\$205,000	\$211,000
Partnership Contributions					
Services	\$10,000	\$10,000	\$20,000	\$30,000	\$41,000
Shared Positions		\$19,000	\$40,000	\$41,200	\$42,400
Construction - Education Center					\$1,300,000

Given the relatively low levels of projected visitation in the first five years of Sanctuary operation, the types of visitation, and available capacity in the region, it is unlikely that the Sanctuary would produce a noticeable increase in crowding or public service costs. Current infrastructure, facilities, and services should be adequate to accommodate the rate of growth and scale of development that comprise the development-use scenarios.

Results of the Economic Impact Assessment

Even with conservative budget and visitation estimates, a Thunder Bay National Marine Sanctuary would have significant positive economic impacts

on the region (Tables 6.2 – 6.3; Figures 6.2 – 6.4).

Direct spending associated with trips to the Sanctuary is estimated to increase from \$554,000 in Year 1 to almost \$2.4 million in Year 5 (Table 6.2). However, not all of this direct spending would be captured by the region. It is estimated that \$2.4 million in direct visitor spending in Year 5 would generate approximately \$2.2 million in direct sales, \$1.3 million in direct income, and 100 direct jobs. Estimated total economic impacts (direct and indirect impacts) of recreational visits directly related to the Sanctuary mission and themes would increase from \$892,000 in sales, \$514,000 in income, and 31 jobs in Year 1

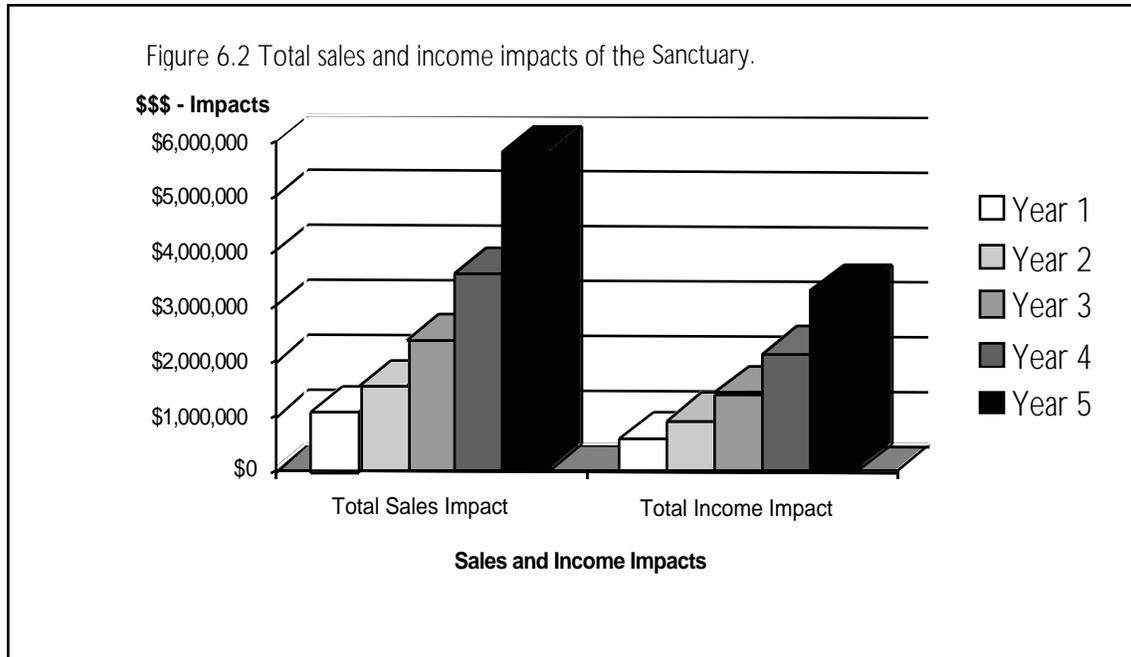
* Budget figures as reported in Mahoney, et al 1996.

Table 6.2 Economic impacts of spending by Sanctuary visitors by year.

	Year 1	Year 2	Year 3	Year 4	Year 5
Visitor Spending (\$000's)	\$554	\$776	\$1,131	\$1,763	\$2,368
Direct Effects					
Sales (\$000's)	418	625	963	1,563	2,155
Income (\$000's)	254	380	586	948	1,311
Jobs	20	29	45	73	100
Total Effects					
Sales (\$000's)	892	1,341	2,066	3,291	4,627
Income (\$000's)	514	774	1,192	1,898	2,670
Jobs	31	46	71	113	158

Table 6.3 Economic impacts of Sanctuary operating budgets and cost-share partnerships.

	Year 1	Year 2	Year 3	Year 4	Year 5
Operating Budget Impacts					
Direct Effects					
Sales (\$000's)	90.80	93.52	96.33	99.22	102.2
Income (\$000's)	69.40	71.48	73.63	75.84	78.11
Jobs	2.30	2.37	2.44	2.51	2.59
Total Effects					
Sales (\$000's)	143.20	147.50	151.92	156.48	161.17
Income (\$000's)	97.80	100.73	103.76	106.87	110.07
Jobs	3.50	3.61	3.71	3.82	3.94
Total Impacts (Including Partnership Positions)					
Direct Effects					
Sales (\$000's)	90.80	131.52	175.25	180.57	185.69
Income (\$000's)	69.40	109.48	152.55	157.19	161.60
Jobs	2.30	4.37	4.44	4.51	4.59
Total Effects					
Sales (\$000's)	143.20	216.50	295.25	304.21	312.79
Income (\$000's)	97.80	155.72	217.96	224.58	230.89
Jobs	3.50	6.33	7.23	7.39	7.54



to more than \$4.6 million in sales, almost \$2.7 million in income, and 158 jobs in Year 5.

NOAA operating budgets would produce a total economic impact of \$143,200 in sales, \$97,800 in income, and 3 to 4 jobs in Year 1 (Table 6.3). It is estimated that this would increase to \$161,200 in sales, \$110,000 in income, and 4 jobs in Year 5. Two partnership cost-share positions (e.g., education coordinator, maritime archaeologist) could add additional economic impacts. It is estimated that the NOAA operating budget and these cost-share positions would generate \$312,800 in total sales impact, \$230,900 in total income, and 7 to 8 jobs in Year 5.

Other partnership contributions, including services, surplus equipment, and volunteer/donated labor, would not provide much addi-

tional economic impact because these contributions would not generate a great deal of additional spending in the region. Nevertheless, these partnerships are still important because they contribute to the mission and quality of Sanctuary programs and services.

If visitation, operating budgets, and partnership projections are realized, the Sanctuary has the potential for producing nearly \$2.4 million in direct sales impacts, about \$1.5 million in direct income, and more than 100 jobs (Table 6.2 and Table 6.3). The estimated growth in Sanctuary produced sales, income, and employment impacts are displayed in Figures 6.2 and 6.3. A comparison of operating budgets, total sales impacts, and total income impacts of the Thunder Bay National Marine Sanctuary are displayed in Figure 6.4.

Figure 6.3 Total employment impacts of the Sanctuary.

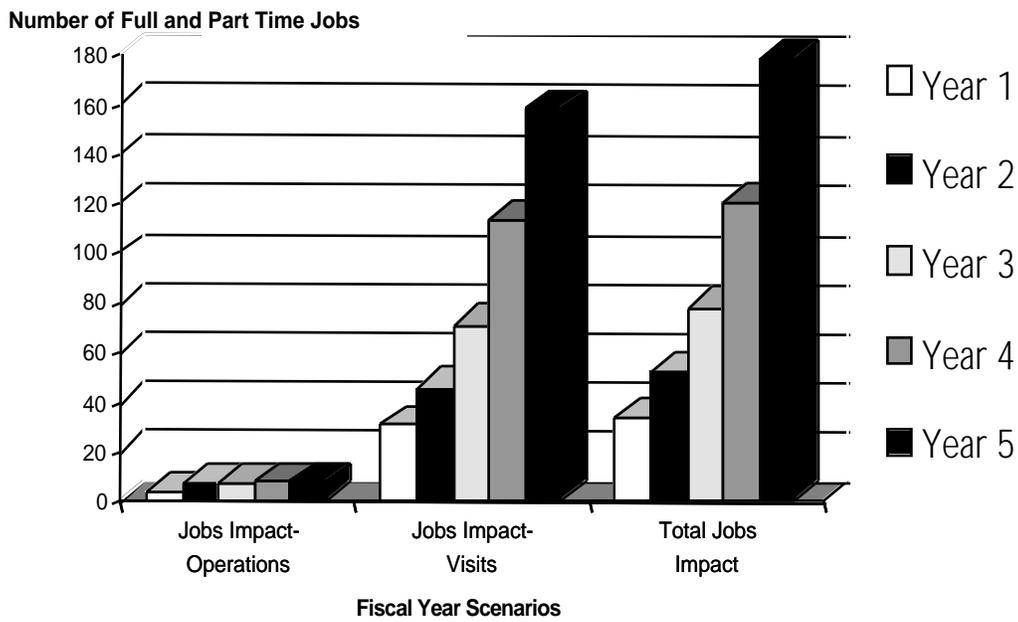
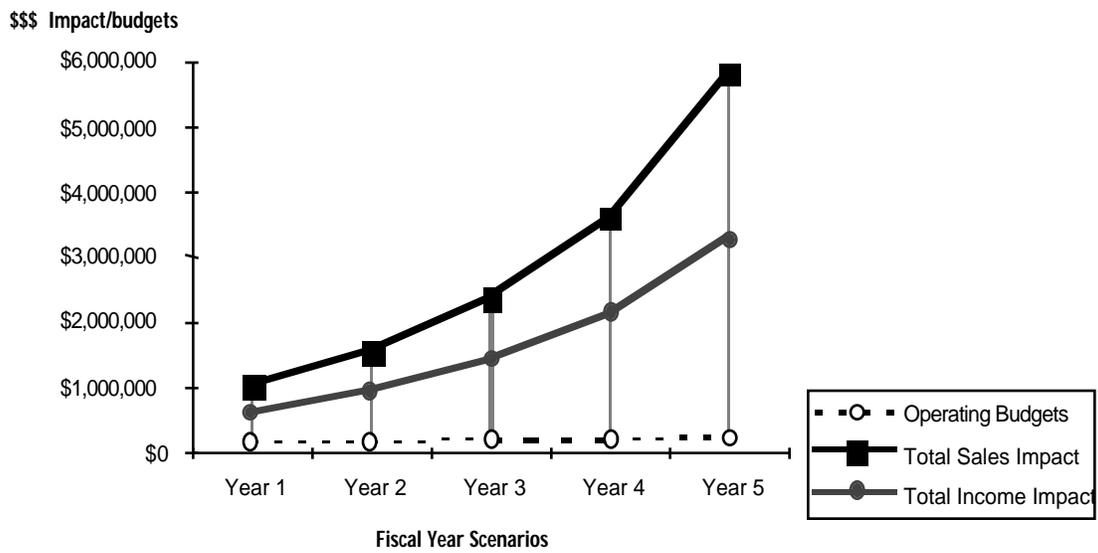


Figure 6.4 Comparison of operating budgets, total sales impacts, and total income impacts of the Sanctuary.



**Summary of Potential Positive and Negative Impacts from Sanctuary Designation
Alternative B**

The potential positive impacts from Sanctuary designation include the following:

- tourism development by establishment of a major (national/international) water-based attraction;
- national recognition from being part of a system of National Marine Sanctuaries;
- regional sales, income and employment, including service sector jobs for younger wage-earners;
- recreation and volunteer opportunities for a large retired/aging resident population;
- opportunities for partnership development with different levels of government and the private sector;
- opportunities to attract other sources of funding for education, research, and development;
- preservation of underwater cultural resources through comprehensive management;
- opportunities for direct and indirect access to underwater cultural resources;
- enhanced knowledge of Great Lakes

maritime heritage through maritime heritage education programs and historic preservation projects;

- linkage of land-based maritime heritage tourism (e.g., lighthouses) with water-based recreation (e.g., scuba diving);
- operational cost-effectiveness through coordination of management programs;

Potential negative impacts include the following:

- deteriorating physical condition of underwater cultural resources from cumulative effects of increased visitation;
- visitor dissatisfaction due to crowding on some popular shipwreck sites;
- conflicts among divers and other recreational users (e.g., sport anglers, pleasure boaters, personal watercraft users);
- costs to community infrastructure (e.g., emergency medical services, other local government services);
- perceived bureaucracy (e.g., "red tape," inefficiency) associated with federal programs;
- regulations and regulatory approaches to management; and
- growth in federal programs associated with the Sanctuary.

F. IMPACTS OF BOUNDARY ALTERNATIVES

BOUNDARY ALTERNATIVES

A. Existing Thunder Bay Underwater Preserve: NOAA would adopt the existing state-designated underwater preserve, which is about 290 square miles, as the Sanctuary boundary.

B. Alpena County latitudes: NOAA would use the northern and southern latitudes of Alpena County and extend the lakeward boundary to longitude 83 degrees west. This boundary alternative is 448 square miles.

C. Presque Isle Harbor to Sturgeon Point: NOAA would adopt a northern boundary marked by the northernmost Presque Isle Lighthouse, and a southern boundary marked by the Sturgeon Point Lighthouse. The boundary would extend lakeward to longitude 83 degrees west and would establish a Sanctuary of 808 square miles (*NOAA's preferred alternative*).

1. IMPACTS OF BOUNDARY ALTERNATIVE A

Boundary Alternative A mirrors the State of Michigan's existing Thunder Bay Underwater Preserve. The positive environmental impacts of Sanctuary designation discussed above would be realized, but these positive impacts would not be as large as in Boundary Alternative C. For example, fewer shipwrecks would be afforded regulatory protection. Under Boundary Alternative A, there are 8 fewer known shipwrecks, 12 fewer probable shipwrecks, and 28 fewer

suspected shipwrecks. In addition, federal funds for education and research would be available only within the smaller boundary area.

Potential negative impacts on users and underwater cultural resources would probably be less under Boundary Alternative A than Boundary Alternatives B or C.

2. IMPACTS OF BOUNDARY ALTERNATIVE B

Boundary Alternative B runs from the north and south boundaries of Alpena County lakeward to longitude 83 degrees west. This is a larger boundary than Boundary Alternative A, but smaller than Alternative C (NOAA's preferred alternative). Approximately the same number of shipwrecks under Boundary Alternative B would be protected as under Boundary Alternative A. Additional financial resources for underwater cultural resource protection, education, and research would be applied to a larger area than Boundary Alternative A, but to a smaller area than Boundary Alternative C.

3. IMPACTS OF THE PROPOSED BOUNDARY ALTERNATIVE C

The major differences among the boundary alternatives are (1) the area of bottomlands/surface waters and (2) the number of shipwrecks and other underwater cultural resources that would be protected by the Thunder Bay NMS. NOAA's preferred boundary (Boundary Alternative C) would protect 34 known shipwrecks, 83 probable shipwrecks, and 43 suspected ship-

wrecks for a total of 160 shipwrecks. The Sanctuary would protect other underwater cultural resources such as prehistoric archaeological sites and cultural materials, although the extent of these resources is unknown. NOAA, the State of Michigan, local organizations, and other partners would provide resources to protect and manage these underwater cultural resources in a comprehensive manner. As discussed in Section 3, the Management Plan, this comprehensive management would be accomplished through underwater cultural resource protection, education, and research.

If NOAA's preferred alternatives are selected, all shipwrecks would be protected. In contrast, under the State of Michigan's Part 761, Aboriginal Records and Antiquities, only abandoned shipwrecks are protected. In addition, positive environmental impacts from protection of underwater cultural resources would be enhanced by preventing illegal salvage, deterring souvenir collecting, and reducing accidental damage to these resources. These benefits would be realized to a greater extent in Boundary Alternative C due to the greater number of shipwrecks and other underwater cultural resources located on these bottomlands.

Potential negative impacts on users include restrictions on commercial salvage and souvenir collection. There could be cumulative adverse impacts to a greater number of underwater cultural resources from an increased number of divers expected to visit the Sanctuary. However, the amount of negative impacts under any of the

boundary alternatives is expected to be very low.

G. IMPACTS OF REGULATORY ALTERNATIVES

REGULATORY ALTERNATIVES

A. State of Michigan: NOAA would adopt regulations that mirror the State of Michigan regulations to protect underwater cultural resources.

B. Other Sanctuaries: NOAA would adopt regulations similar to those used in other Sanctuaries to protect underwater cultural resources. The regulations would be consistent with the State of Michigan regulations (*NOAA's preferred alternative*).

Overall, the potential positive impacts from Sanctuary regulation in both Regulatory Alternatives A and B include additional resources and flexibility in enforcement of regulations through involvement of state/local and federal officers, increased ability to prosecute violators, increased ability to educate visitors, and increased capabilities for advocating adherence to regulations (i.e., self-policing, stewardship). Potential negative impacts include visitor inconvenience from increased activities in law enforcement and adherence, as well as the perception of unnecessary regulations and regulatory approaches to management.

The primary difference between Regulatory Alternatives A and B relates to the overall

protection of underwater cultural resources. Under Regulatory Alternative A, the Sanctuary regulations would be narrower in scope because they would mirror the State of Michigan regulations, which apply only to abandoned property. In contrast, the Sanctuary regulations under Regulatory Alternative B would be broad enough to protect all underwater cultural resources in the boundary of the Sanctuary.

A regulatory prohibition against recovering, altering, destroying, or possessing underwater cultural resources, and against drilling into, dredging, or otherwise altering the lakebottom would be constant in Boundary Alternatives A, B, and C. In Boundary Alternatives A, B, and C, Sanctuary regulations would also prohibit the use of grappling hooks and other anchoring devices on underwater cultural resource sites that are marked with a mooring buoy. Permits from the State of Michigan under Part 761 of PA. 451 (1994), as amended, would be available for scientific research and appropriate recovery of cultural materials if these activities are consistent with the intent of the National Historic Preservation Act (16 U.S.C. 470 et seq.). The differences in the alternatives are the number of underwater cultural resources protected and the potential for new finds in the corresponding boundary areas. Under Designation Alternative A (no designation), underwater cultural resources that are not protected by state law would remain unprotected. In addition, the Sanctuary program could not provide personnel and financial resources for inventory, enforcement, education, and research.

In addition to the projected positive impacts to underwater cultural resources, the associated social-economic impacts are also expected to be positive. In particular, the recreational dive community and related dive industry is expected to benefit from Sanctuary designation.

Commercial salvage companies and businesses selling shipwreck artifacts or other archaeological materials, although limited in number, may be adversely impacted. However, the Sanctuary is entirely in state waters, and, therefore, commercial salvage and sale of artifacts are already subject to state regulations similar to those that would be applied pursuant to federal historic preservation law.

There have been no significant commercial shipwreck salvage or "treasure hunting" operations in the Thunder Bay region since designation of the Thunder Bay Underwater Preserve in 1981. There have been only seven salvage permits issued for removal or alteration of shipwrecks or associated artifacts in the region since 1980 (Graf, personal communication 1996). One of those permits was issued to protect the hull of a sunken vessel from dredging of a new marina in Alpena harbor. The hull was moved to a location outside the breakwater in 1988. Two permit applications were denied.

The economic impact of commercial shipwreck salvage and treasure hunting to coastal communities in the Thunder Bay region and State of Michigan has been negligible since passage of the Michigan Underwater Salvage and Preserve Act

in 1980. The last large-scale salvage operation in Michigan Great Lakes waters was the 1988 salvage of steamer *Regina* in southern Lake Huron (Halsey 1990).

The greatest overall negative impact on Great Lakes shipwrecks in Michigan waters since 1980 is commonly believed to be from: (1) the depreciative behavior of scuba divers (i.e., theft, vandalism), and (2) inadvertent damage while participating in recreational boating and scuba diving activities. The impacts of recreational diving have been reduced significantly by the enactment and enforcement of state laws that specifically prohibit the alteration of shipwrecks and other underwater cultural resources, the adherence of divers to those laws, and the development of a “conservation ethic” among recreational divers. This ethic is often portrayed in the statement, “take only pictures and leave only bubbles,” and has led to efforts in self-policing, and private-public initiatives to enhance diving etiquette on shipwrecks (e.g., PADI Project AWARE, Great Lakes Regional Conference on Underwater Cultural Resources). A rationale of “finders, keepers” was common among recreational divers from the 1950s – 70s.

In addition, there are unknown negative impacts to shipwrecks and other underwater cultural resources from harbor and shoreline improvements, dredging of navigation channels and harbors, coastal construction projects (including marina development), and natural coastal processes (e.g., nearshore wave action and currents, ice movement, sand deposition). Most

projects related to harbor and channel improvement and maintenance are supported by federal funds.

In summary, industries related to recreational use of the Sanctuary should benefit economically from protection of underwater cultural resources. If the Sanctuary is designated, negative economic impacts to commercial salvors, businesses that sell archaeological artifacts, and souvenir collectors might occur, but these impacts should be minor. In addition, the negative impacts to these users are outweighed by the positive environmental and economic impacts resulting from supplemental protection and management. The degree of impacts, both positive and negative, is directly associated with the number and type of underwater cultural resources within the three boundary alternatives.

H. IMPACTS OF ADMINISTRATIVE ALTERNATIVES

ADMINISTRATIVE ALTERNATIVES

A. Permits issued by NOAA: All Sanctuary permits would be issued solely by NOAA. These Sanctuary permits would be in addition to existing permits issued by state and/or other federal agencies. The State of Michigan would be involved in the review of Sanctuary permits through the Section 106 process of the National Historic Preservation Act.

B. Permits issued either by the State of Michigan, a federal agency, or NOAA:

(1) the State of Michigan would continue to issue permits under state law related to underwater cultural resources; (2) for activities involving permits from other federal agencies, NOAA would address Sanctuary concerns through the review and authorization, and if necessary, the placing of conditions on the federal permits; or (3) for an activity adversely impacting underwater cultural resources but that requires neither a state permit nor a permit from another federal agency, a Sanctuary permit would need to be obtained directly from NOAA in order to conduct the activity (*NOAA's preferred alternative*).

The administrative alternatives, when evaluated by themselves, do not cause different impacts. There are virtually no differences in environmental or social-economic impacts associated with who issues the permits, as the issuance of permits is an administrative action. The differences are associated with the protection of underwater cultural resources; this discussion is found under the regulatory alternatives.

1. MODERATION OF POTENTIAL NEGATIVE IMPACTS

Sanctuary designation is not expected to have any significant negative economic impacts because no additional Sanctuary regulations are being proposed that would eliminate or curtail existing recreational or commercial activities (e.g., sport fishing and hunting, commercial fishing, charter operations, commercial shipping).

Given the relatively low levels of projected

visitation in the first five years of Sanctuary operation, the types of visitation, and available capacity in the region, it is unlikely that the Sanctuary would produce a noticeable increase in crowding or public service costs to coastal communities. Current infrastructure, facilities, and services should be adequate to accommodate the expected rate of growth and scale of development through the fifth year (Mahoney et al. 1996).

The Sanctuary would make possible the comprehensive management and protection of underwater cultural resources. Comprehensive management and protection should moderate (1) the physical impacts to these resources from increased visitation, (2) recreational dissatisfaction due to crowding, (3) conflicts among users, and (4) conflicts between recreational visitors and coastal property owners. Only limited instances of crowding and recreation related conflicts are expected in the Sanctuary, based on the experiences of stakeholders in the state Thunder Bay Underwater Preserve.

Physical impacts to shipwrecks and other underwater cultural resources (e.g., vandalism, theft, other damage) need to be monitored and evaluated before action is taken by law enforcement authorities. An estimation of the types and rates of deterioration, the determination of negative effects, and the identification of specific causes are important factors that should be considered for more effective management of shipwrecks, and more efficient use of limited organizational resources to moderate negative

effects. Some of these factors may need to be evaluated on a site by site basis.

Negative impacts from perceived bureaucracy, regulations and regulatory approaches to management, and growth in federal programs associated with the Sanctuary would be moderated by the Memorandum of Understanding and the Programmatic Agreement with the State of Michigan, the actions of the Sanctuary Advisory Committee, and public awareness and involvement in Sanctuary programs.

The success of the Thunder Bay National Marine Sanctuary will be dependent on cooperation and the development of partnerships with governmental and non-governmental entities. All of these organizations and other stakeholders will share responsibility for assuring effective, efficient, and equitable management and development of the Thunder Bay National Marine Sanctuary.

J. ENHANCEMENT OF POTENTIAL POSITIVE IMPACTS

The potential positive economic impacts associated with designation of a Thunder Bay National Marine Sanctuary are dependent on cooperative efforts to develop and market the Sanctuary.

The amount of economic impact can be increased through (1) cooperative efforts to attract more recreational visits, (2) increasing the length of stay and spending in the area, (3) public and private investment in Sanctuary related facilities, services, and businesses, and (4) attracting

additional resources (e.g., grants, donations) from outside the region. Although the Sanctuary is located primarily near Alpena County, there is great potential for enlisting interest and support of organizations and individuals throughout the state, region, and country.

In particular, there are opportunities for volunteer programming in partnership with local foundations and the business community. These programs can incorporate seniors that comprise a relatively large percentage of the Alpena County and regional population. Service sector jobs associated with the Sanctuary can be marketed to young residents in conjunction with hospitality and tourism training to encourage the retention of youth in Alpena County and the region.

The designation of a Thunder Bay National Marine Sanctuary may not directly assist in increasing the manufacturing base of the region, but it can enhance the quality of life, which may attract new businesses and investment in general (including manufacturing). This quality of life approach to economic development appears to have been successful in other Michigan communities using history and historic preservation as development themes (e.g., Petoskey, Marshall).

Critical to the mission of the Thunder Bay National Marine Sanctuary is protection of a nationally significant collection of shipwrecks and preservation of an important Great Lakes and regional maritime heritage. The Sanctuary would build on the successes of the state Thun-

der Bay Underwater Preserve to better protect and preserve these resources, and enhance opportunities to access and enjoy this heritage.

The NOAA National Marine Sanctuary Program would provide funding and investment for underwater cultural resource protection, education, and research that is not available (or expected in the near future) from state and local sources. These Sanctuary programs, in partnership with other governmental and non-governmental entities, could enhance the quality of life in Alpena County and the Thunder Bay region for present and future generations of residents and visitors.

K. CONCLUSION

Significant underwater cultural resources, particularly historic shipwrecks, are located within the Thunder Bay National Marine Sanctuary. These resources are of value to different users within the Sanctuary, including: (1) recreational divers who value the shipwrecks as part of their diving experience, which is enriched by the historical-cultural significance of the underwater cultural resources, (2) commercial salvors and souvenir collectors who may value the resources for their monetary worth, (3) archaeologists, historians, and educators who value the resources for research and teaching, and (4) anglers and boaters who may value the resources because their historical or cultural significance enhances the fishing/boating experience.

These resources are also of value to other users who do not actually visit the Sanctuary, including: (1) historical museum visitors and museum professionals, (2) Great Lakes maritime heritage “buffs” interested in the connections between land and water-based maritime history, and (3) non-users who value or appreciate the long-term preservation of underwater cultural resources for their mere existence or for potential use by present and future generations.

The assessment indicates that a Thunder Bay National Marine Sanctuary can have significant positive impacts on the economy of Alpena County and the Thunder Bay region without significant negative social impacts. Over 75% of the visitors' spending and the Sanctuary operating budgets would be captured by the region's economy. This spending has the potential to generate a significant amount of sales and income for local businesses, especially those that provide services and products to tourists. The additional jobs, particularly those created in the hospitality and service sectors, further diversify the economy of Alpena County and provide important employment to young persons in the region. The projected economic impacts associated with the Sanctuary would be much greater than the expected growth in its operating budget (Mahoney et al. 1996).

Sanctuary designation not only increases the numbers of visitors to the region, but also provides recognition, accessibility, and opportunities that improve the quality of the experiences for tourists, as well as the quality of life for

residents. The Sanctuary can provide a focus and mechanism for the partnerships needed to develop facilities, services, and programs that are meaningful to visitors and local residents, while protecting the underwater cultural resources upon which recreation and tourism are based.

Because the Sanctuary will not regulate fish or other natural resources, designation of the Sanctuary will not adversely impact the region's natural resources. Designation of the Thunder Bay National Marine Sanctuary provides positive environmental impacts and associated positive

economic impacts from scuba diving and heritage tourism. These positive impacts outweigh the potential negative economic impacts to commercial salvors and related industries. The underwater cultural resource protection goals of the National Marine Sanctuaries Act would be met while guaranteeing access to recreational divers, boaters, and anglers. Management strategies facilitate these compatible multiple uses of the underwater cultural resources in a manner that avoids or minimizes negative impacts to these resources.

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LIST OF PREPARERS

Coordinating Staff

Ellen Brody
NOAA National Marine Sanctuary Program
Project Coordinator
August 1996 - Fall 1999

Michele Malarney
NOAA National Marine Sanctuary Program
Project Coordinator
Project inception - July 1996

Kenneth J. Vrana
Center for Maritime & Underwater
Resource Management
Michigan State University
Managing Editor for DEIS/DMP

Technical Staff

Bobbe Hubbard
Spirit Lake Graphics
Publication Design and Layout for FEIS/MP

John Fenton
Great Lakes Environmental Research Laboratory
*Computer Support and Technical Assistance in
Desktop Publishing for FEIS/MP*

Kathryn E. Rowan
Center for Maritime & Underwater
Resource Management
Michigan State University
*Publication Design and Layout; Computer Graphics
for DEIS/DMP*

Renee Dopplick
CyberWonders
Copy Editing; Artwork

William R. Farrant
Michigan Travel, Tourism and Recreation
Resource Center
*Technical Assistance in Desktop and Electronic
Pre-Press Publishing; Copy-stand Photography;
Image Processing for DEIS/DMP*

Gary W. Taylor
Michigan Resource Information System (MIRIS)
Michigan Department of Natural Resources
Computer Graphics

Contributing Authors

(alphabetic order)

Ellen Brody

NOAA National Marine Sanctuary Program

Karen Brubeck

NOAA National Marine Sanctuary Program

Sherrard Foster

NOAA National Marine Sanctuary Program

Edward Mahoney

Department of Park, Recreation and

Tourism Resources

Michigan State University

Michele Malarney

NOAA National Marine Sanctuary Program

Jay C. Martin

Great Lakes Visual/Research, Inc.

Patmarie Nedelka

NOAA National Marine Sanctuary Program

Daniel J. Stynes

Department of Park, Recreation and

Tourism Resources

Michigan State University

Kenneth J. Vrana

Center for Maritime & Underwater

Resource Management

Michigan State University

Timothy J. Watkins

Department of Fisheries and Wildlife

Michigan State University

Sources of Photos, Maps, and Graphics

Alcona Historical Society

Alpena Area Chamber of Commerce

Center for Maritime & Underwater

Resource Management

Kevin Cronk, NOAA's Great Lakes Environmen-

tal Research Laboratory

Renee Dopplick of CyberWonders

Environmental Research Institute of Michigan

(ERIM)

Laura Florence, National Oceanic and Atmo-

spheric Administration (NOAA)

Peter K. Forsberg

Great Lakes Visual/Research, Inc.

Institute for Great Lakes Research,

Bowling Green State University (BGSU)

Jesse Besser Museum

Lake Carriers Association

Edward M. Mahoney, MSU Department of

Park, Recreation and Tourism Resources

Michigan Department of Natural Resources

(MDNR)

Michigan DNR Parks and Recreation Division

Michigan Historical Center

Michigan Maritime Museum

Michigan Resource Information System (MIRIS)

Michigan State University (MSU)

Michigan Travel, Tourism and Recreation

(continued)

Resource Center (MTTRRC)
National Oceanic and Atmospheric Association
(NOAA)
Gary Nelkie
NOAA National Marine Sanctuary Program
Old Woman Creek National Estuarine
Research Reserve (NERR)
The Penrose Family of West Branch, Michigan
Thunder Bay Divers
Hawk Tolson
U.S. Library of Congress
Gene Wright

Reviewers

(alphabetic order)

Martin Freeman
NOAA General Counsel for Ocean Services

Thomas P. Graf
Land & Water Management Division
Michigan Department of Environmental Quality

John R. Halsey
Michigan Historical Center
Michigan Department of State

Donald Inman
Michigan Department of Natural Resources

Pamela Lawrence
NOAA General Counsel for Ocean Services

Edward Lindelof

NOAA National Marine Sanctuary Program
John McConnell
Thunder Bay Underwater Preserve Committee

Don Sawyer
Alcona Historical Society

Dennis Schornack
Office of the Governor of Michigan

Chris A. Shafer
Land & Water Management Division
Michigan Department of Environmental Quality

Ole Varmer
NOAA General Counsel for Ocean Services

NOAA Project Administration

Ellen Brody
Karen Brubeck
Francesca Cava
Susan Durden
Sherrard Foster
Cheryl Graham
Doris Grimm
Annie Hillary
Edward Lindelof
Michele Malarney
Patmarie Nedelka
Randy Schneider
Leslie White

LIST OF AGENCY CONTACTS

Federal Agencies

U.S. Coast Guard
1240 East 9th Street
Cleveland, Ohio 44199

U.S. Coast Guard
145 Water Street
Alpena, MI 49707

U.S. Department of Agriculture
Forest Service
11177 W. 8th Avenue
Lakewood, CO 80225

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Great Lakes Environmental Research Lab
2205 Commonwealth Blvd.
Ann Arbor, MI 48105

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Sanctuaries (12)

U.S. Department of Defense
Air National Guard
Building 3500 Stop 18
Andrews Air Force, MD 20331

U.S. Department of Defense
Phelps Collins Air National Guard Base
Alpena, MI 49707

U.S. Department of Defense
Army Corps of Engineers
P.O. Box 1027
Detroit, MI 48231

U.S. Department of the Interior
Bureau of Land Management
P.O. Box 631
Milwaukee, WI 53201-0631

U.S. Department of the Interior
Fish and Wildlife Service
Shiawassee National Wildlife Refuge
6975 Mower Road, RR#1
Saginaw, MI 48601

U.S. Department of the Interior
Fish and Wildlife Service
2651 Coolidge Road
E. Lansing, MI 48823

U.S. Department of the Interior
Fish and Wildlife Service
Federal Building
145 Water Street
Alpena, MI 49707

U.S. Department of the Interior
National Park Service
Anthropology Division
Washington, D.C. 20002

U.S. Department of the Interior
National Park Service Regional Office
1709 Jackson Street
Omaha, NE 68102

U.S. Department of the Interior
National Park Service
Midwest Archaeological Center
Federal Building, Room 474
100 Centennial Mall
Lincoln, NE 68508

U.S. Department of the Interior
National Park Service
4402 N. Fairfax Drive
Arlington, VA 22203

U.S. Department of the Interior
National Park Service
Archaeological Assistance Division
800 North Capital Street NW, Suite 210
Washington, D.C. 20002

U.S. Department of the Interior
National Park Service
Sleeping Bear Dunes National Lakeshore
P.O. Box 277
Empire, MI 49630

U.S. Department of the Interior
National Park Service
Pictured Rocks National Lakeshore
P.O. Box 40
Munising, MI 49862

U.S. Department of the Interior
National Park Service
Apostle Islands National Lakeshore
RR#1, Box 4
Bayfield, WI 54814

U.S. Department of the Interior
National Park Service
Isle Royale National Park
800 E. Lakeshore Drive
Houghton, MI 49931

U.S. Department of the Interior
National Park Service, Alaska Regional Office
2525 Gambell St., Rm 107
Anchorage, AK 99503

U.S. Department of the Interior
331 S. Second Ave.
Minneapolis, MN 55401

U.S. Department of the Interior
Milwaukee District Office
P.O. Box 631
Milwaukee, WI 53201

U.S. Environmental Protection Agency
77 W. Jackson Avenue, WQP16J
Chicago, IL 60604

U.S. Geological Survey
Biological Resources Division
1451 Green Road
Ann Arbor, MI 481905

U.S. Geological Survey
6520 Mercantile Way, Suite 5
Lansing, MI 48911-5991

Michigan Department of Natural Resources
1955 N I-75
Grayling, MI 49738

State Agencies

Governor's Office
Executive Office, Olds Plaza
Lansing, MI 48913

Michigan Department of Natural Resources
Fisheries Division
160 E. Fletcher
Alpena, MI 49707

Michigan Department of Environmental Quality
Land and Water Management Division
P.O. Box 30458
Lansing, MI 48909

Michigan Department of Natural Resources
Fisheries Division
P.O. Box 30028
Lansing, MI 48909

Michigan Department of Military Affairs
2500 S. Washington Ave.
Lansing, MI 48913

Michigan Department of Natural Resources
Fisheries Division
488 Cherry Creek Road
Marquette, MI 49855

Michigan Department of Natural Resources
Land and Water Management Division
P.O. Box 30028
Lansing, MI 48909

Michigan Department of Natural Resources
Law Enforcement Division
P.O. Box 667
Gaylord, MI 49735

Michigan Department of Natural Resources
Oscoda Field Office
6670 F-41
Oscoda, MI 48750

Michigan Department of Natural Resources
Law Enforcement Division
Route #1, Box 7E
Cedarville, MI 49719

Michigan Department of Natural Resources
Region II Headquarters
8717 N. Roscommon Road
Roscommon, MI 48653

Michigan Department of State
Michigan Historical Center
717 W. Allegan
Lansing, MI 48918

Michigan Jobs Commission
201 N. Washington Square
Victor Office Center – 4th Floor
Lansing, MI 48913

Michigan Office of the Attorney General
530 W. Allegan, 8th Floor
Lansing, MI 48909

Native American Tribes

Chippewa-Ottawa Treaty Fishery Management Authority
Albert LeBlanc Bldg.
186 E. Three Mile Road
Sault Ste. Marie, MI 49783

Grand Traverse Band of Ottawa/Chippewa Indians
Route # 1, Box 135
Suttons Bay, MI 49682

Little Traverse Bay Band of Odawa Indians
P.O. Box 246
Petoskey, MI 49770

Little River Band of Ottawa Indians
409 Water Street
Manistee, MI 49660

Sault Ste. Marie Tribe of Chippewa Indians
523 Ashmun Street
Sault Ste. Marie, MI 49783

APPENDIX A

**Responses to Comments Received
On The
Draft Environmental Impact Statement/
Draft Management Plan**

Responses To Comments Received On The Draft Environmental Impact Statement/Draft Management Plan

On June 23, 1997 NOAA published in the *Federal Register* a proposal to establish, in partnership with the State of Michigan, an approximately 808-square-mile area of Lake Huron, encompassing and surrounding Thunder Bay, as a National Marine Sanctuary. A Draft Environmental Impact Statement/Draft Management Plan (DEIS/DMP) discussing this proposal, and alternatives to it, was published on the same date.

As described in the DEIS/DMP, the proposed Sanctuary boundary extends along the ordinary high water mark of Lake Huron's shoreline, from Presque Isle Lighthouse (Presque Isle County) south to Sturgeon Point Lighthouse (Alcona County), and lakeward to longitude 83 degrees west. The entire management focus of the Sanctuary is on underwater cultural resources.

A 145-day public comment period on the DEIS/DMP extended from June 23 through November 14, 1997, and included two comment extension periods provided in response to requests from the Alpena, Michigan community and the Sanctuary Advisory Council (SAC). During this public comment period, NOAA received a total of 62 written comments (including electronically-transmitted messages). Additionally, at three public hearings conducted in Alcona, Alpena and Presque Isle counties by NOAA (September 8-10, 1997), 32 persons testified on the proposed Sanctuary. As one of its primary purposes, the SAC provided a report to NOAA, which includes a series of recommendations regarding the proposed Sanctuary. These comments and recommendations received on the DEIS/DMP contributed to the refinement of policies for the Thunder Bay National Marine Sanctuary (NMS).

This Appendix identifies and summarizes issues raised by commenters and presents NOAA's responses. Significant issues and substantive comments are addressed in the "Responses to Comments" section, which follows, and by making changes in the FEIS/MP, as appropriate. NOAA has summarized similar substantive comments by issue (e.g., regulations, user fees) and provided responses that are easily identified by the reader.

Following the "Responses to Comments" section, a series of matrices show all public comments submitted through letters, electronic mail, and public hearings. The same groupings used in the "Responses to Comments" section are used in the matrices to indicate the issues on which an agency, organization, or individual commented. For information on the types of comments organized under each heading, see the "Responses to Comments" section.

Three additional headings not found in the “Responses to Comments” section were added to the matrices: “Support for Sanctuary Designation,” “Opposition to Sanctuary Designation,” and “Specific Recommendations/Changes for FEIS/MP.” Comments that are indicated under the “Support for Sanctuary Designation” heading expressed general support for the designation of Thunder Bay as a National Marine Sanctuary. Comments that are found under the “Opposition to Sanctuary Designation” heading opposed the designation of a National Marine Sanctuary in Thunder Bay. Comments located under the “Specific Recommendations/Changes for FEIS/MP” heading all provided specific suggestions for changes to the DEIS/DMP document. Where appropriate, these changes are reflected in the FEIS/MP.

Federal Presence in State Waters; State Sovereignty

1. Comment: The Thunder Bay Underwater Preserve provides adequate protection to the Bay’s underwater cultural resources; there is no need to duplicate efforts.

Response: NOAA agrees that State of Michigan law protecting the State’s underwater preserves (Part 761, Aboriginal Records and Antiquities of Public Act 451, as amended), provides a basic level of protection for “abandoned property” (the State’s term for underwater cultural resources). There are several ways, however, in which Sanctuary designation goes beyond what the State of Michigan accomplishes with the Thunder Bay Underwater Preserve.

First, although the Thunder Bay Underwater Preserve has been designated since 1981, the State has been unable to provide the necessary financial resources or staff to comprehensively manage the underwater preserves. Thus, while the Thunder Bay Underwater Preserve provides for the protection of underwater cultural resources, there are few programs in place to carry out the research, education or enforcement activities necessary to more fully know, understand and protect these resources. NOAA proposes to enter into partnership with the State of Michigan to enhance management of the Sanctuary proposal area (which fully encompasses the Preserve) by providing, with Sanctuary Program and collaborative partnership funding, support for these types of activities. NOAA is not proposing to solely manage the State’s resources; rather, NOAA is proposing to supplement and complement State and/or local efforts to provide protection to, and education and research on, Thunder Bay’s underwater cultural resources.

Second, the Sanctuary regulations provide additional protection for the area’s underwater cultural resources. The State only protects “abandoned property,” while the Sanctuary would protect all underwater cultural resources. This additional protection applies to non-abandoned shipwrecks, as well as historical remnants of docks and piers (see Section 5, Regulatory Alternatives for a more complete discussion of the differences between State law and Sanctuary regulations). The Sanctuary also has additional enforcement capabilities.

It is the intent of the Sanctuary to build on and strengthen the Thunder Bay Underwater Preserve. Because the Thunder Bay NMS is a partnership with the State of Michigan, NOAA and the State will consult regularly to ensure that the agencies are not duplicating efforts. Given the additional financial resources and legal authorities the Sanctuary has to offer, a partnership between the State of Michigan and NOAA will provide opportunities that neither agency could offer on its own. There are numerous benefits associated with a National Marine Sanctuary, including enhanced opportunities for research and long-term monitoring, additional development of educational materials, and increased support for enforcement. The presence of a Sanctuary draws attention to the fact that an area is nationally significant and worth protecting on a national level.

2. Comment: Any Federal government program or involvement in Alpena or surrounding communities is an intrusion into “sovereign” State waters. Designation of the Sanctuary will result in the loss of State control of Lake Huron, and a takeover of both management and regulation of the Thunder Bay area by the Federal government.

Response: As has been discussed and demonstrated throughout the Sanctuary feasibility process, the Thunder Bay National Marine Sanctuary will not change the ownership or control of State lands or waters; that is, no loss of State sovereignty will occur as a result of NOAA’s proposal. NOAA has worked closely with the State of Michigan to ensure that the State’s jurisdiction and rights are maintained and not relinquished. NOAA does not intend to intrude upon or change existing State or local authorities. All existing State laws, regulations, and authorities will remain in effect. The Memorandum of Understanding between the State of Michigan and NOAA contains several provisions to address this concern. A key provision states, “The State of Michigan has not conveyed title to or relinquished its sovereign authority over any State-owned submerged lands or other State-owned resources, by agreeing to include those submerged lands and resources within the Sanctuary boundary.”

3. Comment: The Sanctuary should have a provision requiring a review after five years to determine whether the State of Michigan still supports Sanctuary designation.

Response: The Memorandum of Understanding between NOAA and the State of Michigan contains a provision whereby NOAA will “re-propose” the Sanctuary five years after Sanctuary designation. The Governor will have the ability at that time to veto parts or all of Sanctuary designation.

Regulations

There were a number of comments related to the breadth and nature of the proposed Sanctuary regulations. In response to public comments, NOAA made several changes to the regulations. The first change is the definition of “underwater cultural resources.” Several comments noted that the definition was vague and too broad. NOAA, therefore, revised the definition to make it more consistent with the State definition of “abandoned property” and provide more predictability to Sanctuary users about what NOAA is managing and protecting. The second change is the wording of one of the prohibitions in the Sanctuary regulations. To clarify what types of activities are subject to the Sanctuary regulations, NOAA included language in the final regulations that is similar to language in Part 761, Aboriginal Records and Antiquities of Public Act 451, as amended. The prohibition now reads, “recovering, altering, destroying, or attempting to recover, alter, destroy, or possess an underwater cultural resource.” The third change was to add a prohibition on the use of grappling hooks and other anchoring devices on underwater cultural resources with a mooring buoy.

The Sanctuary regulations are limited to prohibitions on: 1) recovering, altering, destroying, possessing, or attempting to recover, alter, destroy or possess, an underwater cultural resource; 2) drilling into, dredging or otherwise altering the lakebottom associated with underwater cultural resources, including contextual information; or constructing, placing or abandoning any structure, material or other matter on the lakebottom associated with underwater cultural resources (except as an incidental result of anchoring vessels; traditional fishing operations; or minor projects that do not adversely affect underwater cultural resources); and 3) the use of grappling hooks or other anchoring devices on underwater cultural resource sites that are marking with a mooring buoy.

The Sanctuary regulations are different from the State law governing the State’s underwater cultural resources in the following ways:

- The Sanctuary regulations apply to all shipwrecks, not just those that are abandoned;
- The use of grappling hooks or other anchoring devices is prohibited on underwater cultural resources that are marked with a mooring buoy;
- “Hand-taking” of artifacts outside the Thunder Bay Underwater Preserve, but still within the Sanctuary boundary, is prohibited; and
- Permit applications are more detailed to satisfy the Federal Archaeology Program guidelines.

4. Comment: The Sanctuary will prohibit or restrict fishing activities in Thunder Bay.

Response: The Sanctuary will not restrict fishing, as long as the fishing activities do not involve a prohibited activity (see discussion above in the introduction to this section). NOAA is not placing any restrictions on who can use the Thunder Bay National Marine Sanctuary. NOAA will not require a permit or assess a user fee for people to use the Sanctuary. NOAA is not proposing any restrictions on fishing in the Sanctuary in addition to those that currently exist under State or other federal regulation. There is no regulation of, or restriction on, commercial or recreational fishing activities (including fishery-related research and stocking programs) in the Sanctuary, as long as the conduct of those activities does not involve a prohibited activity. Moreover, fishing activities are not included within the Sanctuary's "Scope of Regulation," which means no Sanctuary regulation could be applied to those activities, unless the entire Sanctuary designation process was repeated.

Although unlikely, if the impact of a fishing activity (e.g., from the use of fishing gear) caused disturbance or injury to the Sanctuary's underwater cultural resources, NOAA could find that user in violation of the Sanctuary regulations. One exception is alteration of the lakebottom (15 CFR §922.194(a)(2)) as an incidental result of traditional fishing operations (defined in 15 CFR §922.191).

5. Comment: Concern about restrictions on diving and access to shipwrecks.

Response: There is no regulation of, or restriction on, recreational or commercial diving activities within the Sanctuary, or on access generally to shipwrecks within the Sanctuary boundary. There are no "zones" prohibiting access and no permits required simply to dive in the Sanctuary.

It will be the policy of the Thunder Bay National Marine Sanctuary to provide free and open access to all underwater cultural resources. This is the philosophy of the National Marine Sanctuary Program, and the Program has a track record to demonstrate its commitment to multiple uses of the sanctuaries. Diving is allowed and encouraged at all National Marine Sanctuaries. For example, the Florida Keys NMS is constructing a "shipwreck trail," which encourages access to the shipwrecks. Even on the *Monitor* (the Civil War ironclad off the coast of North Carolina), which is too deep for most recreational divers, a licensed dive operator provides services to the shipwreck. There may be rare occasions, however, when the Thunder Bay NMS proposes to place temporary limits on access to a shipwreck (i.e., if an historically significant shipwreck is newly discovered and NOAA and the State need to document the artifacts in the event they are illegally recovered). The only way in which NOAA could restrict access, however, is through the imposition of an emergency regulation pursuant to 15 CFR §922.195. In accordance with the regulations and the Memorandum of Understanding, NOAA cannot impose an emergency regulation without concurrence from the Governor.

In the event that NOAA imposes some type of restriction on access to allow documentation of a newly-discovered shipwreck, NOAA envisions using volunteer divers who are trained to assist the agency in collecting information.

6. Comment: Concern about not being allowed to anchor to shipwrecks.

Response: Due to possible damage caused by grappling hooks to underwater cultural resources, and in response to a recommendation from the Sanctuary Advisory Council, NOAA added a prohibition on the use of grappling hooks or other anchoring devices on underwater cultural resource sites that are marked with a mooring buoy (15 CFR §922.192(a)(3)). If there is no alternative to the use of a grappling hook on a non-buoyed shipwreck, NOAA recommends that the person using the anchoring device consult with the Sanctuary manager to determine ways of avoiding damage to the shipwreck (e.g., obtaining information about the placement and orientation to avoid damaging vulnerable parts).

The State of Michigan also considers damage to abandoned property caused by grappling hooks a violation of Part 761, Aboriginal Records and Antiquities of Public Act 451 (1994), as amended. Therefore, even though the State has not enforced this aspect of the State law, NOAA's position on damage caused by grappling hooks to shipwrecks without a mooring buoy is consistent with the State.

A high priority activity once the Sanctuary is designated is the placement of mooring buoys at all feasible shipwreck sites. This will allow safe access for divers, allow boats to tie up to the mooring buoys, and eliminate the need for anchoring on the lakebottom.

7. Comment: Concern about restrictions on performing private archaeological surveys.

Response: Any activity that might alter an underwater cultural resource is subject to the Sanctuary regulations. Even if the conduct of private archaeological surveys is not expected to alter or otherwise adversely impact an underwater cultural resource, NOAA encourages the surveyor to consult with the Sanctuary manager. In general, NOAA encourages research and documentation on underwater cultural resources, as long as the activity does not violate the Sanctuary regulations.

8. Comment: Concern about restrictions on commercial diving charter operations.

Response: The regulations do not place any restrictions on the number of commercial dive charter operations in the Sanctuary, nor do they require dive charters to have a license or to register their boats for use in the Sanctuary. NOAA will not charge a user fee for commercial diving charter operations. NOAA will work in partnership with dive operators to educate divers about the Sanctuary.

9. Comment: Concern about requirements for diver and boat registration.

Response: The regulations do not require divers or boat operators to register to be in Sanctuary waters. NOAA will not charge a user fee for divers or boat operators.

10. Comment: The Sanctuary should not grant leases that remove oil and/or gas from locations under the bottomlands within the Sanctuary boundaries.

Response: The Sanctuary regulations include a prohibition on “drilling into, dredging or otherwise altering the lakebottom associated with underwater cultural resources, including contextual information; or constructing, placing or abandoning any structure, material or other matter on the lakebottom associated with underwater cultural resources, except as an incidental result of: (i) anchoring vessels; (ii) traditional fishing operations; or (iii) minor projects that do not adversely affect underwater cultural resources.” Any person conducting an activity that adversely impacts underwater cultural resources would be required to obtain a permit pursuant to the Sanctuary regulations.

11. Comment: Concern about restrictions on property rights and land use.

Response: The Sanctuary will have no effect on existing property rights or on existing land uses. The landward boundary of the Sanctuary extends along the ordinary high water mark between Sturgeon Point Lighthouse (Alcona County) and Presque Isle Lighthouse (Presque Isle County). The Memorandum of Understanding contains the following provision, “NOAA does not have the ability to, and therefore cannot, acquire land to regulate activities landward of the ordinary high water mark (e.g., limiting public access from the shore to Lake Huron). NOAA does have authority to co-manage activities lakeward of the ordinary high water mark pursuant to the Sanctuary regulations.”

12. Comment: Concern about restrictions on hunting activities.

Response: There is no regulation of hunting activities. Hunting is not an activity that is listed in the Sanctuary’s “Scope of Regulation.” Any hunting activity on land would be outside the Sanctuary boundary and therefore not affected at all by the Sanctuary regulations. Waterfowl hunting on the water is also outside the scope of the Sanctuary’s regulations.

13. Comment: Concern about new regulations or restrictions on human activities being imposed following designation of the Sanctuary.

Response: The Sanctuary has a very narrow management focus on underwater cultural resources, with virtually no effect on individual activities in Thunder Bay unless these activities have a negative impact on Sanctuary resources. In addition, NOAA must make a determination that a Sanctuary's resources are nationally significant. In order for any regulatory changes to be made to the Sanctuary following its designation, the entire designation process as described in Section 304 of the National Marine Sanctuaries Act would have to be repeated. This process includes extensive public involvement and review, as well as input and opportunity to veto by the Governor.

14. Comment: The definition of traditional fishing does not specifically reference tribal fishing.

Response: NOAA included in the proposed Sanctuary regulations a definition of "traditional fishing" because it is an activity that is exempt from 15 CFR §922.192(a)(2), alteration of the lakebottom. NOAA agrees that even though tribal fishing is prohibited in this area under the 1985 Consent Agreement, it is an activity that was "customarily conducted within the Sanctuary prior to its designation." NOAA, therefore, has clarified in the final regulations that tribal fishing falls under the definition of traditional fishing.

15. Comment: Do not allow the use of emergency regulations in the Thunder Bay NMS.

Response: Pursuant to 15 CFR §922.195, temporary regulation, including prohibition, of permitted activities in emergency situations, is a programmatic regulation that may be used to prevent or minimize the destruction of, loss of, or injury to a Sanctuary resource. Eliminating this authority would jeopardize the Sanctuary's ability to react and respond quickly to emergency situations threatening Sanctuary resources. Although the provision for emergency temporary regulation is vitally important to ensure the Program's ability to respond to emergency situations, the mechanism is very rarely used. The Memorandum of Understanding between NOAA and the State of Michigan requires that NOAA obtain concurrence from the Governor prior to initiation of any emergency regulation.

16. Comment: Exempt from prosecution charter boat operators and personal sport divers who dive a wreck without a mooring buoy, if the reason for the absence of a buoy is that it has not been set, or that it has been accidentally destroyed.

Response: The regulations for the Thunder Bay National Marine Sanctuary do not require that divers use mooring buoys. The regulations at 15 CFR §922.192(a)(3), however, prohibit the use of grappling hooks or other anchoring devices on underwater cultural resource sites that are marked with a mooring buoy. As discussed in Comment 23, it will be a priority of the Thunder Bay National Marine Sanctuary to install and maintain a mooring buoy system. Divers also must be in compliance with 15 CFR

§922.192(a)(1), which prohibits “recovering, altering, destroying, possessing, or attempting to recover, alter, destroy, or possess an underwater cultural resource.”

17. Comment: Adopt Sanctuary regulations that mirror the State of Michigan regulations protecting underwater cultural resources, per Alternative A, Regulatory Alternatives.

Response: NOAA’s preferred regulatory alternative is Alternative B (*see* Section 5 of the FEIS/MP), which is to adopt Sanctuary regulations consistent with the purpose and intent of State regulations under Part 761, Aboriginal Records and Antiquities, of P.A. 451 (1994), as amended, and Part 325, Great Lakes Submerged Lands, of P.A. 451 (1994), as amended. The primary advantage of Alternative B is that protective coverage is extended to *all* shipwrecks within the Sanctuary boundary; not just to “abandoned” shipwrecks, as defined under State law and the federal Abandoned Shipwreck Act. In effect, adoption of Alternative B will serve as a safety net for State underwater cultural resources that might be unprotected under either State law or the Abandoned Shipwreck Act

It is important to note that NOAA revised the Sanctuary regulations to reflect language in State law. For example, NOAA changed the definition of “underwater cultural resources” to a definition that uses terms similar to the State definition of “abandoned property” (which is the state term for underwater cultural resources). NOAA also changed the wording of a prohibited activity (15 CFR §922.192(a)(1)) to more closely reflect the State prohibition under Part 761, Aboriginal Records and Antiquities of P.A. 451 (1994), as amended. Therefore, while NOAA is still adopting Regulatory Alternative B, this alternative is closer to Regulatory Alternative A than it was in the DEIS/DMP.

18. Comment: What procedures are in place to ensure that NOAA cannot make unilateral changes to the Sanctuary (e.g., changing the scope of regulations)?

Response: In accordance with federal law, NOAA is unable to make substantive changes to the Sanctuary without following required administrative procedures. NOAA is required, at a minimum, to follow the procedures of the Administrative Procedure Act, requiring that adequate public notice and opportunity for public comment be given for new regulations. Further, if NOAA proposed a regulation outside the scope of regulations listed in the Sanctuary Designation Document, NOAA would be legally required to go through the designation process, including public review and comment, at least one public hearing, preparation of a Supplemental EIS, and gubernatorial review and approval. If the Governor objects, the regulation would not take effect in State waters. Finally, if NOAA proposed to substantially change an existing regulation, NOAA must provide for public review and comment and, although not legally required to do so, gubernatorial review and approval. The MOU contains a provision addressing changes by NOAA.

Extent of Underwater Cultural Resources in Sanctuary Boundary

19. Comment: The collection of underwater cultural resources (primarily shipwrecks) in Thunder Bay is not “nationally significant,” and thus does not qualify for National Marine Sanctuary status.

Response: The collection of over 160 shipwrecks both known and thought to be located within the boundary of the Thunder Bay National Marine Sanctuary represents a large diversity of vessels that navigated the Great Lakes in the 19th and 20th centuries. Collectively, these shipwrecks reflect transitions in ship architecture and construction methods, from wooden sailing boats to early steel-hulled steamers. In addition to representing important transitions in ship architecture and construction, the collection also conveys many stories of Great Lakes transportation and commerce over the past two hundred years.

For NOAA to designate a National Marine Sanctuary, the agency must determine that the area contains resources of special national significance (National Marine Sanctuaries Act, Section 301(a)(2)). NOAA funded a study to determine whether the underwater cultural resources of the Thunder Bay region are nationally significant. There is strong evidence, based on this study, of national historic significance attached to this collection of underwater cultural resources located in the Thunder Bay area (*See Preliminary Comparative and Theme Study of National Historic Landmark Potential for Thunder Bay*, Martin 1996). Martin (1996) indicated that the collection of shipwrecks would likely qualify as a National Historic Landmark. In addition, several of the known shipwrecks individually have potential national historic significance, e.g., *Isaac M. Scott*, which foundered in the Great Storm of 1913 (*See* Section 4, E. of the FEIS/MP for a complete discussion of these shipwrecks).

20. Comment: The number of shipwrecks occurring outside Alpena County does not warrant extension of the Sanctuary boundary beyond Alpena County.

Response: Although the majority of known and suspected shipwrecks occur in waters off Alpena County, there are also a significant number of known or suspected shipwrecks occurring in waters off both Alcona and Presque Isle Counties, notably near the lighthouses at both locations. (*See* Figure 5.4 of the FEIS/MP, “Approximate Locations of Shipwrecks in the Thunder Bay Region”). As described in Table 5.1 of the FEIS/MP, “Number of known, probable, and suspected shipwrecks,” the greatest increase occurs from Boundary B (Alpena County lines) and Boundary C (Presque Isle Lighthouse as the northern boundary and Sturgeon Point Lighthouse as the southern boundary — NOAA’s preferred boundary). The number of known, probable, and suspected shipwrecks increases from 116 in Boundary B to 160 in Boundary C.

NOAA also used a number of other criteria for selecting a boundary, including the maritime cultural landscape, accessibility to Sanctuary resources, and effectiveness of Sanctuary operation. NOAA determined

that Boundary C was the most desirable, not only for the number of shipwrecks, but for two lighthouses serving as the north and south boundaries and other factors related to features inside Boundary C.

21. Comment: The National Marine Sanctuary Program should not be supporting sanctuaries that only protect cultural resources.

Response: The National Marine Sanctuaries Act (section 301(a)(2)) states “the Congress finds that certain areas of the marine environment possess conservation, recreational, ecological, historical, research, educational, or esthetic qualities which give them special national, and in some cases, international significance.” NOAA is not required to designate national marine sanctuaries based upon a finding that all of these listed criteria are present. A sanctuary may be designated based on the national significance of any one of the listed criteria, provided that the requirements of sections 303 and 304 of the NMSA are met.

22. Comment: Arrange the boundaries of the Sanctuary to include only areas with a high concentration of known and probable wrecks.

Response: As noted in the discussion of boundary alternatives (See Section 5 of the FEIS/MP), NOAA's preferred boundary, Boundary Alternative C, contains the highest concentration of known, probable and suspected shipwrecks (see Table 5.1 of the FEIS/MP). It would be very difficult administratively to manage a Sanctuary with many “zones” as envisioned in this comment. Since the scope of the Sanctuary is limited to management and protection of underwater cultural resources, the Sanctuary will have minimal impact on the majority of users in the Sanctuary boundary.

Management of Shipwrecks

23. Comment: Use State and federal funds to maintain mooring buoys, anchored within 50 feet of each dive site, from May 1st to October 31st of each year, on all identified wrecks within the Sanctuary that are within 130 feet of the surface. Fit the anchor line for each buoy with a permanent guideline that maintains a depth of +/- 5 feet from the shallowest point of the dive site.

Response: The placement of mooring buoys is an important element of ensuring safe and open public access to Thunder Bay's underwater cultural resources, while also ensuring the protection of these resources. NOAA will pursue placing mooring buoys at identified dive sites, and will also pursue collaboration with private and/or other governmental sources of support to implement full mooring buoy place-

ment and maintenance, as appropriate. The specifics of mooring buoy placement will be addressed following designation, in part through findings and assessments resulting from Sanctuary inventory surveys. As with any activity, however, the placement and maintenance of mooring buoys will be subject to available funding.

24. Comment: Regularly publicize coordinates of existing and newly-found shipwrecks, dates of upcoming studies of wrecks and other research projects, and results of completed and ongoing research projects.

Response: Consistent with goals of the National Marine Sanctuary Program Strategic Plan, NOAA promotes “coordinated research and monitoring efforts throughout the Program.” As discussed in the Management Plan (Section 3 of the FEIS/MP), goals of the research/monitoring program at Thunder Bay include inventory and assessment of Sanctuary resources, and development of collaborative programs with other agencies, businesses, and organizations.

NOAA does have the authority under Section 304 of the National Historic Preservation Act and Section 9(a) of the Archaeological Resource and Protection Act to withhold the location of certain shipwrecks. It will be the policy of the Thunder Bay NMS to make these coordinates available to the public. However, for safety or enforcement purposes, exact locations of newly discovered shipwrecks may not be reported immediately.

Dates of Sanctuary-funded or Sanctuary-permitted studies of shipwrecks and other research projects will be available to the interested public, once those dates are established. Finally, results of completed research also will be made available to the interested public; progress on ongoing research projects will also be made available to the public, as appropriate.

25. Comment: Use State and federal funds, and/or assistance in fundraising, to purchase and install a hyperbaric chamber near the sanctuary.

Response: Decisions related to the purchase and installation of a hyperbaric chamber near the Sanctuary to support Sanctuary research/monitoring programs will be made as annual detailed research plans for the Sanctuary are developed. Such plans also will include discussion of funding for various equipment and supplies. NOAA acknowledges the importance of having a hyperbaric chamber in close proximity to the Thunder Bay National Marine Sanctuary.

26. Comment: Provide incentives and mechanisms to encourage private individuals and companies to explore shipwrecks not yet discovered; and to share information and documentation they already have,

or gather in the future, on shipwrecks in the area.

Response: Among the highest priorities to ensure effective Sanctuary management are research and inventory activities to establish baseline information on the location and status of underwater cultural resources. There will be no restrictions on divers or other public access to known or suspected shipwrecks within the Sanctuary, provided diving activity is conducted in a manner that complies with Sanctuary and other valid regulations. Individuals will be encouraged by NOAA to explore the Sanctuary for the potential discovery of underwater cultural resources, and to share information and documentation on Sanctuary resources with the user and other interested public. NOAA will facilitate these efforts by developing and providing information forums and written and/or visual materials for the public.

27. Comment: Provide State and federal support for selecting, purchasing, cleaning up, and scuttling additional vessels within the Sanctuary.

Response: The selection, purchase, clean-up and scuttling of “additional” vessels within the Sanctuary will not be a management activity for the Sanctuary. The purpose of the Sanctuary is to manage and protect existing shipwrecks in the Sanctuary boundary.

Development of Educational Programs

28. Comment: Develop joint State and federal public education programs, including a web page on the Internet, to promote understanding of the resources available in the Sanctuary to the public of the State, nation, and world.

Response: Development of joint State and federal public education and interpretive programs on the maritime heritage of the Thunder Bay area are contemplated in the Management Plan (see Section 3, Management Plan, FEIS/MP). Part of such programs will include further and continuing development and maintenance of a web page. A web page has already been developed containing preliminary information about the site and its progress toward National Marine Sanctuary designation. The web page address is: <http://glerl.noaa.gov/glsr/thunderbay>.

29. Comment: Provide joint federal and State support for local educational opportunities to all ages and types of schools about aspects of marine and ecological sciences and history in the Thunder Bay area; train educators in the use of that programming.

Response: As generally described in Section 3, Management Plan, the Sanctuary's goals for education include development and implementation of science-based programs that promote awareness and understanding of the Thunder Bay area's underwater cultural resources and maritime heritage. The primary purpose of the Thunder Bay National Marine Sanctuary is to provide comprehensive, long-term protection — through education, research and management programs — for the nationally-significant collection of underwater cultural resources found in the Thunder Bay area. Given this singular management focus, development and support for programming (and training in the use of that programming) to educate children, college students, and the public about aspects of marine and ecological science and history in the Thunder Bay area will not be a high management priority for the Sanctuary, unless such inquiries relate to maritime heritage (e.g., the effects of zebra mussels on shipwrecks).

30. Comment: Provide that the Sanctuary Manager or designee shall make presentations as requested to community organizations on the functions, budget, and staff of the Sanctuary.

Response: Success of the Thunder Bay National Marine Sanctuary will depend in large part upon its integration into the local and surrounding communities. Outreach and communication efforts made by the Sanctuary staff to those communities will support such integration. In coordination with its State partners and others, the Sanctuary Manager will be available to make presentations to community organizations on Sanctuary activities, programs and administration.

31. Comment: Provide publicity and mechanisms to invite and incorporate the involvement of local residents, who have appropriate credentials and experience, in Sanctuary research projects.

Response: A Sanctuary Research Plan will be developed, identifying research and monitoring activity priorities. As Sanctuary funds are available, some may be competitively awarded to support these research and/or monitoring projects. The funds will be awarded to individuals with appropriate credentials and experience from local residents and those from outside the area.

32. Comment: Provide specific mechanisms for involving the diving community in planning and conducting research and educational projects related to the Sanctuary.

Response: As with area residents interested in potential Sanctuary research and educational projects, the Sanctuary will make information and opportunities for planned research and education projects known to the area diving community. One way for interested area residents and representatives of the diving community to become involved in helping to plan for such projects is through the Sanctuary Advisory Council and its subcommittees. The SAC will advise and provide recommendations to the Sanctuary Manager regarding development of priorities for annual research and education plans. In other

sanctuaries, NOAA depends on the experience and expertise of divers to provide input to the Sanctuary Manager. NOAA will place a high priority on building a strong relationship with local and regional divers.

33. Comment: Use federal and State funds to document the cultural resources within the Sanctuary and to provide at least one public resource center through each tourist season.

Response: The identification and documentation of underwater cultural resources within the Sanctuary clearly are priority items for planning site management, which includes the provision of complete, current information to the user and other interested publics. NOAA will pursue development of a Maritime Heritage Center with other agencies (including State agencies), businesses, and organizations. This type of Center would provide the public with information on the Sanctuary, its resources, and the maritime heritage of the Thunder Bay area.

User Fees

34. Comment: A number of commenters expressed concern that user fees may be imposed on various Sanctuary users, such as those engaged in fishing, diving or boating activities.

Response: NOAA is not proposing the imposition of user fees on any activity. The imposition of user fees requires express statutory authority, and NOAA does not possess such authority. Therefore, user fees are not charged (nor have they ever been charged) in any existing National Marine Sanctuary, and there is no intent or desire by NOAA to do so in the case of the Thunder Bay National Marine Sanctuary. The Memorandum of Understanding between NOAA and the State of Michigan states that NOAA does not have the authority to impose user fees at the Thunder Bay National Marine Sanctuary. In the event that NOAA was granted this authority by Congress, the Governor would have to concur with the imposition of user fees.

Conflict Resolution

35. Comment: Tribal participation must be included in the conflict resolution procedures.

Response: NOAA agrees that tribal interests should be considered in the conflict resolution process. The MOU between the State of Michigan and NOAA describes a conflict resolution process. NOAA suggests that the Chippewa-Ottawa Fishery Treaty Management Authority and other tribes enter into a separate MOU(s) with NOAA to address such concerns.

36. Comment: How will the Sanctuary deal with potential conflicts between fishermen and divers?

Response: NOAA is not aware of existing conflicts between divers and fishermen, although NOAA recognizes that the possibility exists. Access to the Sanctuary will not be restricted to divers, fishermen or any other users, which could be a source of conflict. In fact, the National Marine Sanctuary Program recognizes multiple uses in the sanctuaries. In the Thunder Bay NMS, for example, there are no “zones” around shipwrecks that fishermen will be prohibited from using as fishing areas. If conflicts do arise from an increased number of users in the Sanctuary or from fishing gear that harm underwater cultural resources, there is a framework for conflict resolution in the Memorandum of Understanding. NOAA also expects that the Sanctuary Advisory Council or other local forum will be critical to the resolution of this type of conflict.

Economic Impact Assessment

37. Comment: There is an error in the Economic Impact Assessment regarding the transcription of projected use data from one table to another.

Response: The DEIS/DMP contained a word processing error in Table 1 of Appendix F and Table 6.1 in Volume 1 of the Draft EIS/MP (i.e., the use projections for bird watching [overnight trips] were inadvertently duplicated for kayaking/canoeing [day trips]). The word processing error resulted in trip figures after bird watching (overnight trips) to be “thrown off” by one line. The Total party trips in Table 1 and Table 6.1 should be 6,150 for FY97; 9,200 for FY98; 14,175 for FY99; 23,000 for FY00; and 31,700 for FY01 (as shown on the last line of Table 2 in Appendix F). The use projections in Table 1 and Table 6.1 should have been consistent with Table 2 in Appendix F of the DEIS/DMP. This correction was made in the FEIS/MP.

38. Comment: The use of kayaking, bird watching and sightseeing as categories for tourism is not related to a sanctuary to protect underwater cultural resources.

Response: The Economic Impact Assessment in Section 6 can be improved by better explaining the rationale for including bird watching, kayaking/canoeing, and sightseers in the impact calculations for an “underwater” sanctuary. Several reasons exist for including these uses. First, the Sanctuary will interpret and promote the entire “maritime cultural landscape” in partnership with the community and state, and the landscape includes resources other than shipwrecks. Second, a certain segment of visitors will be attracted to the region simply because there is a “National” Sanctuary. They may be primarily interested

in cultural heritage, but can realistically be assumed to participate also in recreation associated with natural heritage (in addition, some of this “natural” heritage is an important component of the maritime cultural landscape). Finally, social research involving heritage tourism indicates that a primary motivation for visitation is history and human heritage, but that these visitors also participate in other outdoor recreation activities. These rationale can be supported by social research in heritage tourism; aggregate trends and projections of use for bird watching, canoeing/kayaking, and sightseeing (i.e., nature-based tourism along the shorelands and from boats); and some results from the Florida Keys recreation and tourism study (Leeworthy et al. 1996).

39. Comment: The impact of increased visitors on the area’s local infrastructure and on the environment is not adequately addressed.

Response: The Economic Impact Assessment was limited in scope due to financial constraints and availability of data. However, NOAA does not believe the projected increase in visitation would cause stresses on the area’s infrastructure. The City of Alpena is growing, with new businesses and stores locating there. This growth, which is not a result of the Sanctuary, will prepare the City for increased visitation.

Other

40. Comment: Is State or local matching funding required for the Sanctuary?

Response: NOAA is not requiring any State and/or local support for Sanctuary programs and activities. The Memorandum of Understanding contains the following statement to address this concern: “No State or local funding is required to implement the Management Plan, its implementing regulations, or any provisions of this MOU.” Initial NOAA funding levels for the Sanctuary will be at least \$200,000 annually. This figure could be higher depending on appropriations. In addition to this level of support, there are opportunities for revenue enhancement and cost-sharing with a variety of agencies, organizations, institutions, businesses and individuals, to assist in meeting Sanctuary Program objectives. NOAA will continue to promote and encourage means such as partnerships and sponsorships, to raise additional support for Sanctuary programs.

41. Comment: Involve the existing SAC in reviewing and revising the Memorandum of Understanding (MOU) to ensure that it accurately addresses local concerns.

Response: Prior to the release of this FEIS/MP, the SAC was requested to review and make

recommendations to NOAA regarding the MOU. Before the FEIS/MP release, the SAC also reviewed and endorsed the Programmatic Agreement among NOAA, the State of Michigan and the Advisory Council on Historic Preservation. The SAC's involvement has been critical in shaping the terms and scope of the Thunder Bay National Marine Sanctuary.

42. Comment: Who on the state or local level would be responsible for enforcement of the Sanctuary regulations? The Final Management Plan should include a provision for funding enforcement activities.

Response: Enforcement of Sanctuary regulations is discussed in the MOU, which provides for possible deputization of State of Michigan, Michigan State Police, and county marine sheriff enforcement personnel, for the enforcement of Sanctuary regulations. NOAA envisions developing a separate agreement for enforcement. Under such an agreement, the appropriate State agency would be recognized as the lead enforcement entity, and provisions for necessary cost-sharing for law enforcement activities would be made.

43. Comment: NOAA needs to address the impacts of zebra mussels on shipwrecks.

Response: NOAA recognizes that zebra mussels will be a management concern for the Sanctuary. If this is determined to be a priority research activity, funds will be allocated to examine the impact of zebra mussels on shipwrecks.

44. Comment: The availability of the open water placement site for future placement of clean dredged materials is critical for continued maintenance of the Federal navigation channel at Alpena Harbor.

Response: NOAA recognizes the importance of maintaining the navigation channel at Alpena Harbor. NOAA is not aware of adverse impacts to underwater cultural resources caused by the open water placement site. Unless there are adverse impacts, the Sanctuary will not impose restrictions on the continued availability of the open water placement site currently used by the Corps for placement of clean dredged materials resulting from periodic maintenance dredging of navigation channels and harbors located on Lake Huron.

45. Comment: Safety of Sanctuary users should be considered in light of commercial shipping traffic in Thunder Bay. Mooring buoys should be kept out of commercial course lines.

Response: After Sanctuary designation, NOAA and the State will work with the U.S. Coast Guard and the Lake Carriers' Association to develop a safe and effective mooring buoy system, as well as to ensure that mooring buoys are not placed in major shipping channels.

46. Comment: In the event of an oil spill, NOAA should comply with U.S. Coast Guard Area Contingency Plan.

Response: After designation, NOAA will work closely with the U.S. Coast Guard to ensure that NOAA is aware of, and part of, the Area Contingency Plan. NOAA added information in Section 4 of the FEIS/MP on the Area Contingency Plan.

47. Comment: Why isn't the *Fame* included in the list of shipwrecks?

Response: It is NOAA's understanding that the sailing vessel *Fame* was stranded in the Thunder Bay region but later recovered (i.e. probably re-floated).

Matrix of Public Comment Letters

	State Sovereignty	Regulations	Extent of Underwater Cultural Resources in Sanctuary Boundary	Management of Shipwrecks	Development of Educational Programs	User Fees	Conflict Resolution	Economic Impact Assessment	Other	Support for Sanctuary Designation	Opposition to Sanctuary Designation	Specific Recommendations/Changes for FEIS/MP
1 Chippewa-Ottawa Treaty Fishery Management Authority		X					X		X		X	X
2 Dept. of the Army, Corps of Engineers									X			X
3 Dept. of the Navy, Navy Historical Center									X			
4 Michigan Dept. of Environmental Quality	X	X					X	X	X	X	X	X
5 Michigan Dept. of Natural Resources									X			
6 Michigan Dept. of State, State Archaeologist									X			
7 Parks Canada, Federal Archaeology Office									X			
8 Pennsylvania Historical and Museum Commission									X			
9 U.S. Department of Interior, Great Lakes Science Center									X			
10 U.S. Dept. of Interior, Office of Environmental Policy and Compliance				X					X			X
11 U.S. Department of Transportation, U.S. Coast Guard									X			X
1 Alpena Area Convention and Visitors Bureau			X									
2 Center for Marine Conservation												
4 Ford Sea Lancers, Inc. Scuba Diving Club	X	X				X		X			X	X
5 Ford Seahorses SCUBA Diving Club	X										X	
6 Hammond Bay Area Anglers Association	X										X	
7 Lake Carriers Association									X			
8 Saginaw Underwater Explorers												
10 Target Alpena 2000										X		
1 Anonymous	X										X	
2 Anonymous											X	
3 Appleby, Maxine	X										X	
4 Bodem, Rep. Beverly	X	X							X	X	X	
5 Bolzman, Michael	X										X	
6 Bonello, Kariame	X										X	
7 Borland, Louise	X										X	
8 Both, Mel	X										X	
9 Broad, Jerry											X	
10 Burke, Harriet											X	
11 Burnham, Nancy											X	
12 Carr, Dale	X										X	
13 Clark, Patricia											X	
14 Code, Patrick											X	
15 Ellison, Ed	X	X									X	
16 Esper, David	X	X									X	
17 Firestone, Kathleen											X	
18 Gansin, Gary	X										X	

Matrix of Public Comment Letters

	Management	Other	Support for	Opposition to	Specific Recommendations/
19 Gumbrecht, Greg					
20 Haltiner, Robert			X		X
Jackson, (Unknown)					
22 Lehman, David	X				X
23 Leow, Carl		X			X
24 Lewis, William					X
25 Longman, R. Bruce		X			X
27 McCormick, Michael	X				X
28 Mercier, Thomas		X			
29 Merckel, Kenneth				X	X
30 Myers, Jeff	X	X			X
31 Nethercut, Vernie					X
34 Raymond, Shawn				X	X
35 Roth, Christian		X			X
36 Scott, Ronald				X	X
37 Sloan, Robert/Nancy			X		
39 Szymanski, Michael	X				X
40 Thomas, Dan	X				X
41 Twardzik, Lotis			X		X

Matrix of Public Hearing Comments

	State Sovereignty	Regulations	Extent of Underwater Cultural Resources in Sanctuary Boundary	Management of Shipwrecks	Development of Educational Programs	User Fees	Conflict Resolution	Economic Impact Assessment	Other	Support for Sanctuary Designation	Opposition to Sanctuary Designation	Specific Recommendations/Changes for FEIS/MP
1 Michigan State University, Alpena County Extension												
2 Presque Isle County Tourism Council	X	X					X			X		
3 Target Alpena 2000												
4 Thunder Bay Steelheaders	X									X		
2 Bodem, Beverly		X							X			
3 Bowen, Denny	X	X								X		
4 Bruining, Art		X										
5 Code, Patrick						X				X		
6 Cuddie, Alfred			X									
8 Fortier, Rich	X	X								X		
9 Kanyasiak, Jeremy												X
10 Keerl, Fred	X	X	X							X		
11 Kidd, John												
12 Klamm, Michael												X
14 Lewandowski, Irwin												
15 Malcomson, Elmer	X									X		
16 Massey, Robert	X									X		
17 McConnell, John												
18 Melton, Merl										X		
19 Metzger, Mike		X	X					X		X		
20 Nedeau, Al	X	X								X		
21 Nethercut, Vernie	X	X								X		
22 Polaski, James	X	X	X			X						
23 Storms, David												
24 Szymanski, Michael	X	X										
25 Thompson, Jack	X											X
26 Twite, Marie												
28 Vogelheim, Karl		X	X								X	

APPENDIX B

The National Marine Sanctuaries Act

THE NATIONAL MARINE SANCTUARIES ACT

16 U.S.C. 1431 ET SEQ.

As amended by Pub. L. 104-283

[NOTE : The Oceans Act of 1992, Pub. L. 102-587, and the National Marine Sanctuaries Preservation Act of 1996, Pub. L. 104-283, contain provisions pertaining to national marine sanctuaries.]

Sec. 301. FINDINGS, PURPOSES, AND POLICIES

(a) FINDINGS.—The Congress finds that—

- (1) this Nation historically has recognized the importance of protecting special areas of its public domain, but these efforts have been directed almost exclusively to land areas above the high-water mark;
- (2) certain areas of the marine environment possess conservation, recreational, ecological, historical, research, educational, or esthetic qualities which give them special national, and in some instances, international, significance;
- (3) while the need to control the effects of particular activities has led to enactment of resource-specific legislation, these laws cannot in all cases provide a coordinated and comprehensive approach to the conservation and management of special areas of the marine environment;
- (4) a Federal program which identifies special areas of the marine environment will contribute positively to marine resources conservation, research, and management;
- (5) such a Federal program will also serve to enhance public awareness, understanding, appreciation, and wise use of the marine environment; and
- (6) protection of these special areas can contribute to maintaining a natural assemblage of living resources for future generations.

(b) PURPOSES AND POLICIES.—The purposes and policies of this title are—

- (1) to identify and designate as national marine sanctuaries areas of the marine environment which are of special national significance;
- (2) to provide authority for comprehensive and coordinated conservation and management of these marine areas, and activities affecting them, in a manner which complements existing regulatory authorities;
- (3) to support, promote, and coordinate scientific research on, and monitoring of, the resources of these marine areas, especially long-term monitoring and research of these areas;
- (4) to enhance public awareness, understanding, appreciation, and wise use of the marine environment;
- (5) to facilitate to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities;
- (6) to develop and implement coordinated plans for the protection and management of these areas with appropriate Federal agencies, State and local governments, Native American tribes and organizations, international organizations, and other public and private interests concerned with the continuing health and resilience of these marine areas;
- (7) to create models of, and incentives for, ways to conserve and manage these areas;
- (8) to cooperate with global programs encouraging conservation of marine resources; and
- (9) to maintain, restore, and enhance living resources by providing places for species that depend upon these marine areas to survive and propagate.

Sec. 302. DEFINITIONS

As used in this title, the term—

- (1) “Draft management plan” means the plan described in section 304(a)(1)(C)(v);
- (2) “Magnuson Act” means the Magnuson Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.);
- (3) “marine environment” means those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands over which the United States exercises jurisdiction, including the exclusive economic zone, consistent with international law;
- (4) “Secretary” means the Secretary of Commerce;
- (5) “State” means each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, the Virgin Islands, Guam, and any other commonwealth, territory, or possession of the United States;
- (6) “damages” includes—
 - (A) compensation for—
 - (i)(I) the cost of replacing, restoring, or acquiring the equivalent of a sanctuary resource; and (II) the value of the lost use of a sanctuary resource pending its restoration or replacement or the acquisition of an equivalent sanctuary resource; or
 - (ii) the value of a sanctuary resource if the sanctuary resource cannot be restored or replaced or if the equivalent of such resource cannot be acquired;
 - (B) the cost of damage assessments under section 312(b)(2); and
 - (C) the reasonable cost of monitoring appropriate to the injured, restored, or replaced resources;
- (7) “response costs” means the costs of actions taken or authorized by the Secretary to minimize destruction or loss of, or injury to, sanctuary resources, or to minimize the imminent risks of such destruction, loss, or injury;
- (8) “sanctuary resource” means any living or nonliving resource of a national marine sanctuary that contributes to the conservation, recreational, ecological, historical, research, educational, or aesthetic value of the sanctuary; and
- (9) “exclusive economic zone” means the exclusive economic zone as defined in the Magnuson Fishery and Conservation Act.

Sec. 303. SANCTUARY DESIGNATION STANDARDS

(a) STANDARDS.—The Secretary may designate any discrete area of the marine environment as a national marine sanctuary and promulgate regulations implementing the designation if the Secretary—

- (1) determines that the designation will fulfill the purposes and policies of this title; and
- (2) finds that—
 - (A) the area is of special national significance due to its resource or human-use values;
 - (B) existing State and Federal authorities are inadequate or should be supplemented to ensure coordinated and comprehensive conservation and management of the area, including resource protection, scientific research, and public education;
 - (C) designation of the area as a national marine sanctuary will facilitate the objectives in subparagraph (B); and
 - (D) the area is of a size and nature that will permit comprehensive and coordinated conservation and management.

(b) FACTORS AND CONSULTATIONS REQUIRED IN MAKING DETERMINATIONS AND FINDINGS.—

(1) Factors.—For purposes of determining if an area of the marine environment meets the standards set forth in subsection (a), the Secretary shall consider—

- (A) the area's natural resource and ecological qualities, including its contribution to biological productivity, maintenance of ecosystem structure, maintenance of ecologically or commercially important or threatened species or species assemblages, maintenance of critical habitat of endangered species, and the biogeographic representation of the site;
- (B) the area's historical, cultural, archaeological, or paleontological significance;
- (C) the present and potential uses of the area that depend on maintenance of the area's resources, including commercial and recreational fishing, subsistence uses other commercial and recreational activities, and research and education;
- (D) the present and potential activities that may adversely affect the factors identified in subparagraphs (A), (B), (C);
- (E) the existing State and Federal regulatory and management authorities applicable to the area and the adequacy of those authorities to fulfill the purposes and policies of this title;
- (F) the manageability of the area, including such factors as its size, its ability to be identified as a discrete ecological unit with definable boundaries, its accessibility, and its suitability for monitoring and enforcement activities;
- (G) the public benefits to be derived from sanctuary status, with emphasis on the benefits of long-term protection of nationally significant resources, vital habitats, and resources which generate tourism;
- (H) the negative impacts produced by management restrictions on income-generating activities such as living and nonliving resources development; and
- (I) the socioeconomic effects of sanctuary designation.

(2) Consultation.—In making determinations and findings, the Secretary shall consult with—

- (A) the Committee on Merchant Marine and Fisheries of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate;
- (B) the Secretaries of State, Defense, Transportation, and the Interior, the Administrator, and the heads of other interested Federal agencies;
- (C) the responsible officials or relevant agency heads of the appropriate State and local government entities, including coastal zone management agencies, that will or are likely to be affected by the establishment of the area as a national marine sanctuary;
- (D) the appropriate officials of any Regional Fishery Management Council established by section 302 of the Magnuson Act (16 U.S.C. 1852) that may be affected by the proposed designation; and
- (E) other interested persons.

(3) Resource Assessment Report.—In making determinations and findings, the Secretary shall draft, as part of the environmental impact statement referred to in section 304(a)(2), a resource assessment report documenting present and potential uses of the area, including commercial and recreational fishing, research and education, minerals and energy development, subsistence uses, and other commercial governmental, or recreational uses. The Secretary, in consultation with the Secretary of the Interior, shall draft a resource assessment section for the report regarding any

commercial, governmental, or recreational resource uses in the area under consideration that are subject to the primary jurisdiction of the Department of the Interior. The Secretary, in consultation with the Secretary of Defense, the Secretary of Energy, and the Administrator, shall draft a resource assessment section for the report including information on any past, present or proposed future disposal or discharge of materials in the vicinity of the proposed sanctuary. Public disclosure by the Secretary of such information shall be consistent with national security regulations.

Sec. 304. PROCEDURES FOR DESIGNATION AND IMPLEMENTATION

(a) SANCTUARY PROPOSAL.—

- (1) Notice.—In proposing to designate a national marine sanctuary, the Secretary shall—
- (A) issue, in the Federal Register, a notice of the proposal, proposed regulations that may be necessary and reasonable to implement the proposal, and a summary of the draft management plan;
 - (B) provide notice of the proposal in newspapers of general circulation or electronic media in the communities that may be affected by the proposal; and
 - (C) on the same day the notice required by subparagraph (A) is issued, the Secretary shall submit to the Committee on Merchant Marine and Fisheries of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate documents, including an executive summary, consisting of—
 - (i) the terms of the proposed designation;
 - (ii) the basis of the findings made under section 303(a) with respect to the area;
 - (iii) an assessment of the considerations under section 303(b)(1);
 - (iv) proposed mechanisms to coordinate existing regulatory and management authorities within the area;
 - (v) the draft management plan detailing the proposed goals and objectives, management responsibilities, resource studies, interpretive and educational programs, and enforcement, including surveillance activities for the area;
 - (vi) an estimate of the annual cost of the proposed designation, including costs of personnel, equipment and facilities, enforcement, research, and public education;
 - (vii) the draft environmental impact statement;
 - (viii) an evaluation of the advantages of cooperative State and Federal management if all or part of a proposed marine sanctuary is within the territorial limits of any State or is superjacent to the subsoil and seabed within the seaward boundary of a State, as that boundary is established under the Submerged Lands Act (43 U.S.C. 1301 et seq.); and
 - (ix) the proposed regulations referred to in subparagraph (A).
- (2) Environmental Impact Statement.—The Secretary shall—
- (A) prepare a draft environmental impact statement, as provided by the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), on the proposal that includes the resource assessment report required under section 303(b)(3), maps depicting the boundaries of the proposed designated area, and the existing and potential uses and resources of the area; and
 - (B) make copies of the draft environmental impact statement available to the public.
- (3) Public Hearing.—No sooner than thirty days after issuing a notice under this subsection, the Secretary shall hold at least one public hearing in the coastal area or areas that will be most affected by the proposed designation of the area as a national marine sanctuary for the purpose of

receiving the views of interested parties.

(4) Terms of Designation.—The terms of designation of a sanctuary shall include the geographic area proposed to be included within the sanctuary, the characteristics of the area that give it conservation, recreational, ecological, historical, research, educational, or esthetic value, and the types of activities that will be subject to regulation by the Secretary to protect those characteristics. The terms of designation may be modified only by the same procedures by which the original designation is made.

(5) Fishing Regulations.—The Secretary shall provide the appropriate Regional Fishery Management Council with the opportunity to prepare draft regulations for fishing within the Exclusive Economic Zone as the Council may deem necessary to implement the proposed designation. Draft regulations prepared by the Council, or a Council determination that regulations are not necessary pursuant to this paragraph, shall be accepted and issued as proposed regulations by the Secretary unless the Secretary finds that the Council's action fails to fulfill the purposes and policies of this title and the goals and objectives of the proposed designation. In preparing the draft regulations, a Regional Fishery Management Council shall use as guidance the national standards of section 301(a) of the Magnuson Act (16 U.S.C. 1851) to the extent that the standards are consistent and compatible with the goals and objectives of the proposed designation. The Secretary shall prepare the fishing regulations, if the Council declines to make a determination with respect to the need for regulations, makes a determination which is rejected by the Secretary, or fails to prepare the draft regulations in a timely manner. Any amendments to the fishing regulations shall be drafted, approved, and issued in the same manner as the original regulations. The Secretary shall also cooperate with other appropriate fishery management authorities with rights or responsibilities within a proposed sanctuary at the earliest practicable stage in drafting any sanctuary fishing regulations.

(6) Committee Action.—After receiving the documents under subsection (a)(1)(C), the Committee on Merchant Marine and Fisheries of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate may each hold hearings on the proposed designation and on the matters set forth in the documents. If within the forty-five day period of continuous session of Congress beginning on the date of submission of the documents, either Committee issues a report concerning matters addressed in the documents, the Secretary shall consider this report before publishing a notice to designate the national marine sanctuary.

(b) TAKING EFFECT OF DESIGNATIONS.—

(1) Notice.—In designating a national marine sanctuary, the Secretary shall publish in the Federal Register notice of the designation together with final regulations to implement the designation and any other matters required by law, and submit such notice to the Congress. The Secretary shall advise the public of the availability of the final management plan and the final environmental impact statement with respect to such sanctuary. The Secretary shall issue a notice of designation with respect to a proposed national marine sanctuary site not later than 30 months after the date a notice declaring the site to be an active candidate for sanctuary designation is published in the Federal Register under regulations issued under this Act, or shall publish not later than such date in the Federal Register findings regarding why such notice has not been published. No notice of designation may occur until the expiration of the period for Committee action under subsection (a)(6). The designation (and any of its terms not disapproved under this subsection) and regulations shall take effect and become final after the close of a review period of forty-five days of continuous session of Congress beginning on the day on which such notice is published unless in

the case of a natural [sic] marine sanctuary that is located partially or entirely within the seaward boundary of any State, the Governor affected certifies to the Secretary that the designation or any of its terms is unacceptable, in which case the designation or the unacceptable term shall not take effect in the area of the sanctuary lying within the seaward boundary of the State.

(2) **Withdrawal of Designation.**— If the Secretary considers that actions taken under paragraph (1) will affect the designation of a national marine sanctuary in a manner that the goals and objectives of the sanctuary cannot be fulfilled, the Secretary may withdraw the entire designation. If the Secretary does not withdraw the designation, only those terms of the designation or not certified under paragraph (1) shall take effect.

(3) **Procedures.**— In computing the forty-five-day periods of continuous session of Congress pursuant to subsection (a)(6) and paragraph (1) of this subsection—

(A) continuity of session is broken only by an adjournment of Congress sine die; and

(B) the days on which either House of Congress is not in session because of an adjournment of more than three days to a day certain are excluded.

(c) **ACCESS AND VALID RIGHTS.**—

(1) Nothing in this title shall be construed as terminating or granting to the Secretary the right to terminate any valid lease, permit, license, or right of subsistence use or of access that is in existence on the date of designation of any national marine sanctuary.

(2) The exercise of a lease, permit, license, or right is subject to regulation by the Secretary consistent with the purposes for which the sanctuary is designated.

(d) **INTERAGENCY COOPERATION.**—

(1) **Review of Agency Actions.**—

(A) **In General.**—Federal agency actions internal or external to a national marine sanctuary, including private activities authorized by licenses, leases, or permits, that are likely to destroy, cause the loss of, or injure any sanctuary resource are subject to consultation with the Secretary.

(B) **Agency Statements Required.**— Subject to any regulations the Secretary may establish each Federal agency proposing an action described in subparagraph (A) shall provide the Secretary with a written statement describing the action and its potential effects on sanctuary resources at the earliest practicable time, but in no case later than 45 days before the final approval of the action unless such Federal agency and the Secretary agree to a different schedule.

(2) **Secretary's Recommended Alternatives.**—If the Secretary finds that a Federal agency action is likely to destroy, cause the loss of, or injure a sanctuary resource, the Secretary shall (within 45 days of receipt of complete information on the proposed agency action) recommend reasonable and prudent alternatives, which may include conduct of the action elsewhere, which can be taken by the Federal agency in implementing the agency action that will protect sanctuary resources.

(3) **Response to Recommendations.**—The agency head who receives the Secretary's recommended alternatives under paragraph (2) shall promptly consult with the Secretary on the alternatives. If the agency head decides not to follow the alternatives, the agency head shall provide the Secretary with a written statement explaining the reasons for that decision.

(e) **REVIEW OF MANAGEMENT PLANS.**—Not more than 5 years after the date of designation of any national marine sanctuary, and thereafter at intervals not exceeding 5 years, the Secretary shall evaluate

the substantive progress toward implementing the management plan and goals for the sanctuary, especially the effectiveness of site-specific management techniques, and shall revise the management plan and regulations as necessary to fulfill the purposes and policies of this title.

Sec. 305. APPLICATION OF REGULATIONS AND INTERNATIONAL NEGOTIATIONS

(a) REGULATIONS.—This title and the regulations issued under section 304 shall be applied in accordance with generally recognized principles of international law, and in accordance with the treaties, conventions, and other agreements to which the United States is a party. No regulation shall apply to or be enforced against a person who is not a citizen, national, or resident alien of the United States, unless in accordance with—

- (1) generally recognized principles of international law;
- (2) an agreement between the United States and the foreign state of which the person is a citizen; or
- (3) an agreement between the United States and the flag state of a foreign vessel, if the person is a crewmember of the vessel.

(b) NEGOTIATIONS.—The Secretary of State, in consultation with the Secretary, shall take appropriate action to enter into negotiations with other governments to make necessary arrangements for the protection of any national marine sanctuary and to promote the purposes for which the sanctuary is established.

(c) INTERNATIONAL COOPERATION.—The Secretary, in consultation with the Secretary of State and other appropriate Federal agencies, shall cooperate with other governments and international organizations in the furtherance of the purposes and policies of this title and consistent with applicable regional and multilateral arrangements for the protection and management of special marine areas.

Sec. 306. PROHIBITED ACTIVITIES

It is unlawful to—

- (1) destroy, cause the loss of, or injure any sanctuary resource managed under law or regulations for that sanctuary;
- (2) possess, sell, deliver, carry, transport, or ship by any means any sanctuary resource taken in violation of this section;
- (3) interfere with the enforcement of this title; or
- (4) violate any provision of this title or any regulation or permit issued pursuant to this title.

Sec. 307. ENFORCEMENT

(a) IN GENERAL.—The Secretary shall conduct such enforcement activities as are necessary and reasonable to carry out this title.

(b) POWERS OF AUTHORIZED OFFICERS.—Any person who is authorized to enforce this title may—

- (1) board, search, inspect, and seize any vessel suspected of being used to violate this title or any regulation or permit issued under this title and any equipment, stores, and cargo of such vessel;
- (2) seize wherever found any sanctuary resource taken or retained in violation of this title or any regulation or permit issued under this title;
- (3) seize any evidence of a violation of this title or of any regulation or permit issued under this title;
- (4) execute any warrant or other process issued by any court of competent jurisdiction; and

(5) exercise any other lawful authority.

(c) CIVIL PENALTIES.—

(1) Civil penalty.—Any person subject to the jurisdiction of the United States who violates this title or any regulation or permit issued under this title shall be liable to the United States for a civil penalty of not more than \$100,000 for each such violation, to be assessed by the Secretary. Each day of a continuing violation shall constitute a separate violation.

(2) Notice.—No penalty shall be assessed under this subsection until after the person charged has been given notice and an opportunity for a hearing.

(3) In Rem Jurisdiction.—A vessel used in violating this title or any regulation or permit issued under this title shall be liable in rem for any civil penalty assessed for such violation. Such penalty shall constitute a maritime lien on the vessel and may be recovered in an action in rem in the district court of the United States having jurisdiction over the vessel.

(4) Review of Civil Penalty.—Any person against whom a civil penalty is assessed under this subsection may obtain review in the United States district court for the appropriate district by filing a complaint in such court not later than 30 days after the date of such order.

(5) Collection of Penalties.—If any person fails to pay an assessment of a civil penalty under this section after it has become a final and unappealable order, or after the appropriate court has entered final judgment in favor of the Secretary, the Secretary shall refer the matter to the Attorney General, who shall recover the amount assessed in any appropriate district court of the United States. In such action, the validity and appropriateness of the final order imposing the civil penalty shall not be subject to review.

(6) Compromise or Other Action by Secretary.—The Secretary may compromise, modify, or remit, with or without conditions, any civil penalty which is or may be imposed under this section.

(d) FORFEITURE.—

(1) In General.—Any vessel (including the vessel's equipment, stores, and cargo) and other item used, and any sanctuary resource taken or retained, in any manner, in connection with or as a result of any violation of this title or of any regulation or permit issued under this title shall be subject to forfeiture to the United States pursuant to a civil proceeding under this subsection. The proceeds from forfeiture actions under this subsection shall constitute a separate recovery in addition to any amounts recovered as civil penalties under this section or as civil damages under section 312. None of those proceeds shall be subject to set-off.

(2) Application of the Customs Laws.—The Secretary may exercise the authority of any United States official granted by any relevant customs law relating to the seizure, forfeiture, condemnation, disposition, remission, and mitigation of property in enforcing this title.

(3) Disposal of Sanctuary Resources.—Any sanctuary resource seized pursuant to this title may be disposed of pursuant to an order of the appropriate court or, if perishable, in a manner prescribed by regulations promulgated by the Secretary. Any proceeds from the sale of such sanctuary resource shall for all purposes represent the sanctuary resource so disposed of in any subsequent legal proceedings.

(4) Presumption.—For the purposes of this section there is a rebuttable presumption that all sanctuary resources found on board a vessel that is used or seized in connection with a violation of this title or of any regulation or permit issued under this title were taken or retained in violation of this title or of a regulation or permit issued under this title.

(e) PAYMENT OF STORAGE, CARE, AND OTHER COSTS.—

(1) Expenditures.—

(A) Notwithstanding any other law, amounts received by the United States as civil penalties, forfeitures of property, and costs imposed under paragraph (2) shall be retained by the Secretary in the manner provided for in section 107(f)(1) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980.

(B) Amounts received under this section for forfeitures and costs imposed under paragraph (2) shall be used to pay the reasonable and necessary costs incurred by the Secretary to provide temporary storage, care, maintenance, and disposal of any sanctuary resource or other property seized in connection with a violation of this title or any regulation or permit issued under this title.

(C) Amounts received under this section as civil penalties and any amounts remaining after the operation of subparagraph (B) shall be used, in order of priority, to—

(i) manage and improve the national marine sanctuary with respect to which the violation occurred that resulted in the penalty or forfeiture;

(ii) pay a reward to any person who furnishes information leading to an assessment of a civil penalty, or to a forfeiture of property, for a violation of this title or any regulation or permit issued under this title; and

(iii) manage and improve any other national marine sanctuary.

(2) Liability for Costs.—Any person assessed a civil penalty for a violation of this title or of any regulation or permit issued under this title, and any claimant in a forfeiture action brought for such a violation, shall be liable for the reasonable costs incurred by the Secretary in storage, care, and maintenance of any sanctuary resource or other property seized in connection with the violation.

(f) SUBPOENAS.—In the case of any hearing under this section which is determined on the record in accordance with the procedures provided for under section 554 of title 5, United States Code, the Secretary may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and may administer oaths.

(g) USE OF RESOURCES OF STATE AND OTHER FEDERAL AGENCIES.—The Secretary shall, whenever appropriate, use by agreement the personnel, services, and facilities of State and other Federal departments, agencies, and instrumentalities, on a reimbursable or nonreimbursable basis, to carry out the Secretary's responsibilities under this section.

(h) COAST GUARD AUTHORITY NOT LIMITED.—Nothing in this section shall be considered to limit the authority of the Coast Guard to enforce this or any other Federal law under section 89 of title 14, United States Code.

(i) INJUNCTIVE RELIEF.—If the Secretary determines that there is an imminent risk of destruction or loss of or injury to a sanctuary resource, or that there has been actual destruction or loss of, or injury to, a sanctuary resource which may give rise to liability under section 312, the Attorney General, upon request of the Secretary, shall seek to obtain such relief as may be necessary to abate such risk or actual destruction, loss, or injury, or to restore or replace the sanctuary resource, or both. The district courts of the United States shall have jurisdiction in such a case to order such relief as the public interest and the equities of the case may require.

(j) AREA OF APPLICATION AND ENFORCEABILITY.—The area of application and enforceability of this title includes the territorial sea of the United States, as described in Presidential Proclamation 5928 of December 27, 1988, which is subject to the sovereignty of the United States, and the United States exclusive economic zone, consistent with international law.

Sec. 308. SEVERABILITY

If any provision of this Act or the application thereof to any person or circumstances is held invalid, the validity of the remainder of this Act and of the application of such provision to other persons and circumstances shall not be affected thereby.

Sec. 309. RESEARCH, MONITORING, AND EDUCATION

(a) IN GENERAL.—The Secretary shall conduct research, monitoring, evaluation, and education programs as are necessary and reasonable to carry out the purposes and policies of this title.

(b) PROMOTION AND COORDINATION OF SANCTUARY USE.—The Secretary shall take such action as is necessary and reasonable to promote and coordinate the use of national marine sanctuaries for research, monitoring, and education purposes. Such action may include consulting with Federal agencies, States, local governments, regional agencies, interstate agencies, or other persons to promote use of one or more sanctuaries for research, monitoring, and education, including coordination with the National Estuarine Research Reserve System.

Sec. 310. SPECIAL USE PERMITS

(a) ISSUANCE OF PERMITS.—The Secretary may issue special use permits which authorize the conduct of specific activities in a national marine sanctuary if the Secretary determines such authorization is necessary—

- (1) to establish conditions of access to and use of any sanctuary resource; or
- (2) to promote public use and understanding of a sanctuary resource.

(b) PERMIT TERMS.—A permit issued under this section—

- (1) shall authorize the conduct of an activity only if that activity is compatible with the purposes for which the sanctuary is designated and with protection of sanctuary resources;
- (2) shall not authorize the conduct of any activity for a period of more than 5 years unless renewed by the Secretary;
- (3) shall require that activities carried out under the permit be conducted in a manner that does not destroy, cause the loss of, or injure sanctuary resources; and
- (4) shall require the permittee to purchase and maintain comprehensive general liability insurance against claims arising out of activities conducted under the permit and to agree to hold the United States harmless against such claims.

(c) FEES.—

- (1) Assessment and Collection.—The Secretary may assess and collect fees for the conduct of any activity under a permit issued under this section.
- (2) Amount.—The amount of a fee under this subsection shall be equal to the sum of—
 - (A) costs incurred, or expected to be incurred, by the Secretary in issuing the permit;
 - (B) costs incurred, or expected to be incurred, by the Secretary as a direct result of the conduct of the activity for which the permit is issued, including costs of monitoring the

conduct of the activity; and

(C) an amount which represents the fair market value of the use of the sanctuary resource and a reasonable, return to the United States Government.

(3) Use of Fees.—Amounts collected by the Secretary in the form of fees under this section may be used by the Secretary—

(A) for issuing and administering permits under this section; and

(B) for expenses of designating and managing national marine sanctuaries.

(d) VIOLATIONS.—Upon violation of a term or condition of a permit issued under this section, the Secretary may—

(1) suspend or revoke the permit without compensation to the permittee and without liability to the United States;

(2) assess a civil penalty in accordance with section 307; or

(3) both.

(e) REPORTS.—Each person issued a permit under this section shall submit an annual report to the Secretary not later than December 31 of each year which describes activities conducted under that permit and revenues derived from such activities during the year.

(f) FISHING.—Nothing in this section shall be considered to require a person to obtain a permit under this section for the conduct of any fishing activities in a national marine sanctuary.

Sec. 311. COOPERATIVE AGREEMENTS, DONATIONS, AND ACQUISITIONS

(a) COOPERATIVE AGREEMENTS, GRANTS AND OTHER AGREEMENTS.—The Secretary may enter into cooperative agreements, financial agreements, grants, contracts, or other agreements with States, local governments, regional agencies, interstate agencies, or other persons to carry out the purposes and policies of this title.

(b) AUTHORIZATION TO SOLICIT DONATIONS.—The Secretary may enter into such agreements with any nonprofit organization authorizing the organization to solicit private donations to carry out the purposes and policies of this title.

(c) DONATIONS.—The Secretary may accept donations of funds, property, and services for use in designating and administering national marine sanctuaries under this title. Donations accepted under this section shall be considered as a gift or bequest to or for the use of the United States.

(d) ACQUISITIONS.—The Secretary may acquire by purchase, lease, or exchange, any land, facilities, or other property necessary and appropriate to carry out the purposes and policies of this title

Sec. 312. DESTRUCTION OR LOSS OF, OR INJURY TO, SANCTUARY RESOURCES

(a) LIABILITY FOR INTEREST.—

(1) Liability to United States.—Any person who destroys, causes the loss of, or injures any sanctuary resource is liable to the United States for an amount equal to the sum of—

(A) the amount of response costs and damages resulting from the destruction, loss, or injury; and

(B) interests on that amount calculated in the manner described under section 1005 of the

Oil Pollution Act of 1990.

(2) Liability In Rem.—Any vessel used to destroy, cause the loss of, or injure any sanctuary resource shall be liable in rem to the United States for response costs and damages resulting from such destruction, loss, or injury. The amount of that liability shall constitute a maritime lien on the vessel and may be recovered in an action in rem in the district court of the United States having jurisdiction over the vessel.

(3) Defenses.—A person is not liable under this subsection if that person establishes that—

(A) the destruction or loss of, or injury to, the sanctuary resource was caused solely by an act of God, an act of war, or an act or omission of a third party, and the person acted with due care;

(B) the destruction, loss, or injury was caused by an activity authorized by Federal or State law; or

(C) the destruction, loss, or injury was negligible.

(4) Limits to Liability.— Nothing in sections 4281–4289 of the Revised Statutes of the United States or section 3 of the Act of February 13, 1893, shall limit the liability of any person under this title.

(b) RESPONSE ACTIONS AND DAMAGE ASSESSMENT.—

(1) Response Actions.—The Secretary may undertake or authorize all necessary actions to prevent or minimize the destruction or loss of, or injury to, sanctuary resources, or to minimize the imminent risk of such destruction, loss, or injury.

(2) Damage Assessment.—The Secretary shall assess damages to sanctuary resources in accordance with section 302(6).

(c) CIVIL ACTIONS FOR RESPONSE COSTS AND DAMAGES.—The Attorney General, upon request of the Secretary, may commence a civil action in the United States district court for the appropriate district against any person or vessel who may be liable under subsection (a) for response costs and damages. The Secretary, acting as trustee for sanctuary resources for the United States, shall submit a request for such an action to the Attorney General whenever a person may be liable for such costs or damages.

(d) USE OF RECOVERED AMOUNTS.—Response costs and damages recovered by the Secretary under this section shall be retained by the Secretary in the manner provided for in section 107(f)(1) of the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9607(f)(1)), and used as follows:

(1) Response Costs And Damage Assessments.— Twenty percent of amounts recovered under this section, up to a maximum balance of \$750,000, shall be used to finance response actions and damage assessments by the Secretary.

(2) Restoration, Replacement, Management, And Improvement.—Amounts remaining after the operation of paragraph (1) shall be used, in order of priority—

(A) to restore, replace, or acquire the equivalent of the sanctuary resources which were the subject of the action;

(B) to manage and improve the national marine sanctuary within which are located the sanctuary resources which were the subject of the action; and

(C) to manage and improve any other national marine sanctuary.

(3) Federal-State Coordination.—Amounts recovered under this section with respect to sanctuary resources lying within the jurisdiction of a State shall be used under paragraphs (2)(A) and (B) in

accordance with the court decree or settlement agreement and an agreement entered into by the Secretary and the Governor of that State.

Sec. 313. AUTHORIZATION OF APPROPRIATIONS

There are authorized to be appropriated to the Secretary to carry out this title the following: (1) \$12,000,000 for fiscal year 1997; (2) \$15,000,000 for fiscal year 1998; and (3) \$18,000,000 for fiscal year 1999.

Sec. 314. U.S.S. MONITOR ARTIFACTS AND MATERIALS

(a) CONGRESSIONAL POLICY. — In recognition of the historical significance of the wreck of the United States ship Monitor to coastal North Carolina and to the area off the coast of North Carolina known as the Graveyard of the Atlantic, the Congress directs that a suitable display of artifacts and materials from the United States ship Monitor be maintained permanently at an appropriate site in coastal North Carolina. [P.L. 102–587 authorized a grant for the acquisition of space in Hatteras Village, NC, for display of artifacts and administration and operations of the Monitor National Marine Sanctuary.]

(b) INTERPRETATION AND DISPLAY OF ARTIFACTS.—

(1) Submission Of Plan. — The Secretary shall, within six months after the date of the enactment of this section, submit to the Committee on Merchant Marine and Fisheries of the House of Representatives a plan for a suitable display in coastal North Carolina of artifacts and materials of the United States ship Monitor.

(2) Contents Of Plan.—The plan submitted under subsection (a) shall, at a minimum, contain—

(A) an identification of appropriate sites in coastal North Carolina, either existing or proposed, for display of artifacts and materials of the United States ship Monitor;

(B) an identification of suitable artifacts and materials, including artifacts recovered or proposed for recovery, for display in coastal North Carolina;

(C) an interpretive plan for the artifacts and materials which focuses on the sinking, discovery, and subsequent management of the wreck of the United States ship Monitor; and

(D) a draft cooperative agreement with the State of North Carolina to implement the plan.

(c) DISCLAIMER. —This section shall not affect the following:

(1) Responsibilities Of Secretary.—The responsibilities of the Secretary to provide for the protection, conservation, and display of artifacts and materials from the United States ship Monitor.

(2) Authority Of Secretary.—The authority of the Secretary to designate the Mariner’s Museum, located at Newport News, Virginia, as the principal museum for coordination of activities referred to in paragraph (1).

[NOTE: Section 4 of the National Marine Sanctuaries Preservation Act, Pub. L. 104-283, requires the Secretary to prepare a plan for the management, stabilization, preservation, and recovery of artifacts and materials of the U.S.S. Monitor.]

Sec. 315. ADVISORY COUNCILS

(a) ESTABLISHMENT.—The Secretary may establish one or more advisory councils (in this section referred to as an ‘Advisory Council’) to provide assistance to the Secretary regarding the designation and

management of national marine sanctuaries. The Advisory Councils shall be exempt from the Federal Advisory Committee Act.

- (b) MEMBERSHIP.—Members of the Advisory Councils may be appointed from among—
- (1) persons employed by Federal or State agencies with expertise in management of natural resources;
 - (2) members of relevant Regional Fishery Management Councils established under section 302 of the Magnuson Fishery Conservation and Management Act; and
 - (3) representatives of local user groups, conservation and other public interest organizations, scientific organizations, educational organizations, or others interested in the protection and multiple use management of sanctuary resources.
- (c) LIMITS OF MEMBERSHIP.—For sanctuaries designated after the date of enactment of the National Marine Sanctuaries Program Amendments Act of 1992, the membership of Advisory Councils shall be limited to no more than 15 members.
- (d) STAFFING AND ASSISTANCE.—The Secretary may make available to an Advisory Council any staff, information, administrative services, or assistance the Secretary determines are reasonably required to enable the Advisory Council to carry out its functions.
- (e) PUBLIC PARTICIPATION AND PROCEDURAL MATTERS.—The following guidelines apply with respect to the conduct of business meetings of an Advisory Council:
- (1) Each meeting shall be open to the public, and interested persons shall be permitted to present oral or written statements on items on the agenda.
 - (2) Emergency meetings may be held at the call of the chairman or presiding officer.
 - (3) Timely notice of each meeting, including the time, place, and agenda of the meeting, shall be published locally and in the Federal Register, except that in the case of a meeting of an Advisory Council established to provide assistance regarding any individual national marine sanctuary the notice is not required to be published in the Federal Register.
 - (4) Minutes of each meeting shall be kept and contain a summary of the attendees and matters discussed.

Oceans Act of 1992

Sections 2202 - 2307 of the Oceans Act of 1992, as amended by Pub. L. 104-283, contain provisions pertaining to National Marine Sanctuaries.

Sec. 2202. STELLWAGEN BANK NATIONAL MARINE SANCTUARY

(a) DESIGNATION.—The area described in subsection (b) is designated as the Stellwagen Bank National Marine Sanctuary (hereafter in this section referred to as the “Sanctuary”).

(b) AREA.—The Sanctuary shall consist of all submerged lands and waters, including living and nonliving marine resources within those waters, bounded by the area described as Boundary Alternative 3 in the Draft Environmental Impact Statement and Management Plan for the Proposed Stellwagen Bank National Marine Sanctuary, published by the Department of Commerce in January 1991, except that the western

boundary shall be modified as follows:

(1) The southwestern corner of the Sanctuary shall be located at a point off Provincetown, Massachusetts, at the following coordinates: 42 degrees, 7 minutes, 44.89 seconds (latitude), 70 degrees, 28 minutes, 15.44 seconds (longitude).

(2) The northwestern corner of the Sanctuary shall be located at a point off Cape Ann, Massachusetts, at the following coordinates: 42 degrees, 37 minutes, 53.52 seconds (latitude), 70 degrees, 35 minutes, 52.38 seconds (longitude).

(c) MANAGEMENT.—The Secretary of Commerce shall issue a management plan for the Sanctuary in accordance with section 304 of the Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 1434), as amended by this title.

(d) SAND AND GRAVEL MINING ACTIVITIES PROHIBITED.—Notwithstanding any other provision of law, exploration for, and mining of, sand and gravel and other minerals in the Sanctuary is prohibited.

(e) CONSULTATION.—In accordance with the procedures established in section 304(d) of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended by this title, the appropriate Federal agencies shall consult with the Secretary on proposed agency actions in the vicinity of the Sanctuary that may affect sanctuary resources.

(f) AUTHORIZATION.—There are authorized to be appropriated to the Secretary of Commerce for carrying out the purposes of this section \$570,000 for fiscal year 1993 and \$250,000 for fiscal year 1994.

(g) OFFICE.—The Secretary of Commerce shall consider establishing a satellite office for the Stellwagen Bank National Marine Sanctuary in Provincetown, Gloucester, or Hull, Massachusetts.

[NOTE: Section 11 of the National Marine Sanctuaries Preservation Act, Pub. L. 104-283, changed the name of this sanctuary to the Gerry E. Studds Stellwagen Bank National Marine Sanctuary.]

Sec. 2203. MONTEREY BAY NATIONAL MARINE SANCTUARY

(a) ISSUANCE OF DESIGNATION NOTICE.—Notwithstanding section 304(b) of the Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 1434(b)), the designation of the Monterey Bay National Marine 20 Sanctuary (hereafter in this section the “Sanctuary”), as described in the notice of designation submitted to the Congress on September 15, 1992, shall take effect on September 18, 1992.

(b) OIL AND GAS ACTIVITIES PROHIBITED.—Notwithstanding any other provision of law, no leasing, exploration, development, or production of oil or gas shall be permitted within the Sanctuary as provided by section 944.5 of the National Environmental Impact Statement and Management Plan for the Monterey Bay National Marine Sanctuary, published by the Department of Commerce in June 1992.

(c) CONSULTATION.—Section 304(e) of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended by this title, shall apply to the Sanctuary as designated by the Secretary of Commerce.

(d) VESSEL TRAFFIC.—Within 18 months after the date of enactment of this title, the Secretary of Commerce and the Secretary of Transportation, in consultation with the State of California and with adequate

opportunity for public comment, shall report to Congress on measures for regulating vessel traffic in the Sanctuary if it is determined that such measures are necessary to protect sanctuary resources.

Sec. 2204. ENHANCING SUPPORT FOR NATIONAL MARINE SANCTUARIES

(a) **AUTHORITY.**— The Secretary may establish a program consisting of—

- (1) the creation, adoption, and publication in the Federal Register by the Secretary of a symbol for the national marine sanctuary program, or for individual national marine sanctuaries;
- (2) the solicitation of persons to be designated as official sponsors of the national marine sanctuary program or of individual national marine sanctuaries;
- (3) the designation of persons by the Secretary as official sponsors of the national marine sanctuary program or of individual sanctuaries;
- (4) the authorization by the Secretary of the use of any symbol published under paragraph (1) by official sponsors of the national marine sanctuary program or of individual national marine sanctuaries;
- (5) the creation, marketing, and selling of products to promote the national marine sanctuary program, and entering into exclusive or nonexclusive agreements authorizing entities to create, market or sell on the Secretary's behalf;
- (6) the solicitation and collection by the Secretary of monetary or in-kind contributions from official sponsors for the manufacture, reproduction or use of the symbols published under paragraph (1);
- (7) the retention of any monetary or in-kind contributions collected under paragraphs (5) and (6) by the Secretary; and
- (8) the expenditure and use of any monetary and in-kind contributions, without appropriation, by the Secretary to designate and manage national marine sanctuaries.

Monetary and in-kind contributions raised through the sale, marketing, or use of symbols and products related to an individual national marine sanctuary shall be used to support that sanctuary.

(b) **CONTRACT AUTHORITY.**— The Secretary may contract with any person for the creation of symbols or the solicitation of official sponsors under subsection (a).

(c) **RESTRICTIONS.**— The Secretary may restrict the use of the symbols published under subsection (a), and the designation of official sponsors of the national marine sanctuary program or of individual national marine sanctuaries to ensure compatibility with the goals of the national marine sanctuary program.

(d) **PROPERTY OF UNITED STATES.**— Any symbol which is adopted by the Secretary and published in the Federal Register under subsection (a) is deemed to be the property of the United States.

(e) **PROHIBITED ACTIVITIES.**— It is unlawful for any person—

- (1) designated as an official sponsor to influence or seek to influence any decision by the Secretary or any other Federal official related to the designation or management of a national marine sanctuary, except to the extent that a person who is not so designated may do so;
- (2) to represent himself or herself to be an official sponsor absent a designation by the Secretary;
- (3) to manufacture, reproduce, or use any symbol adopted by the Secretary absent designation as an official sponsor and without payment of a monetary or in-kind contribution to the Secretary;

and

(4) to violate any regulation promulgated by the Secretary under this section.

Sec. 2209. FLORIDA KEYS NATIONAL MARINE SANCTUARY

(a) IMPLEMENTATION.—Section 8 of the Florida Keys National Marine Sanctuary and Protection Act (16 U.S.C. 1433 note) is amended by adding at the end the following new subsection:

(d) IMPLEMENTATION.—

(1) The Administrator of the Environmental Protection Agency and the Governor of the State of Florida shall implement the program required by this section, in cooperation with the Secretary of Commerce.

(2)(A) The Regional Administrator of the Environmental Protection Agency shall with the Governor of the State of Florida establish a Steering Committee to set guidance and policy for the development and implementation of such program. Membership shall include representatives of the Environmental Protection Agency, the National Park Service, the United States Fish and Wildlife Service, the Army Corps of Engineers, the National Oceanic and Atmospheric Administration, the Florida Department of Community Affairs, the Florida Department of Environmental Regulation, the South Florida Water Management District, and the Florida Keys Aqueduct Authority; three individuals in local government in the Florida Keys; and three citizens knowledgeable about such program.

(B) The Steering Committee shall, on a biennial basis, issue a report to Congress that—

(i) summarizes the progress of the program;

(ii) summarizes any modifications to the program and its recommended actions and plans; and

(iii) incorporates specific recommendations concerning the implementation of the program.

(C) The Administrator of the Environmental Protection Agency and the Administrator of the National Oceanic and Atmospheric Administration shall cooperate with the Florida Department of Environmental Regulation to establish a Technical Advisory Committee to advise the Steering Committee and to assist in the design and prioritization of programs for scientific research and monitoring. The Technical Advisory Committee shall be composed of scientists from Federal agencies, State agencies, academic institutions, private non-profit organizations, and knowledgeable citizens.

(3)(A) The Regional Administrator of the Environmental Protection Agency shall appoint a Florida Keys Liaison Officer. The Liaison Officer, who shall be located within the State of Florida, shall have the authority and staff to—

(i) assist and support the implementation of the program required by this section, including administrative and technical support for the Steering Committee and Technical Advisory Committee;

(ii) assist and support local, State, and Federal agencies in developing and implementing specific action plans designed to carry out such program;

(iii) coordinate the actions of the Environmental Protection Agency with other Federal agencies, including the National Oceanic and Atmospheric Administration and the National Park Service, and State and local authorities, in developing strategies to maintain, protect, and improve water quality in the Florida Keys;

(iv) collect and make available to the public publications, and other forms of information that the Steering Committee determines to be appropriate, related to the water quality in the vicinity of the Florida Keys; and

(v) provide for public review and comment on the program and implementing actions.

(4)(A) There are authorized to be appropriated to the Administrator of the Environmental Protection Agency \$2,000,000 for fiscal year 1993, \$3,000,000 for fiscal year 1994, and \$4,000,000 for fiscal year 1995, for the purpose of carrying out this section.

(B) There are authorized to be appropriated to the Secretary of Commerce \$300,000 for fiscal year 1993, \$400,000 for fiscal year 1994, and \$500,000 for fiscal year 1995, for the purpose of enabling the National Oceanic and Atmospheric Administration to carry out this section.

(C) Amounts appropriated under this paragraph shall remain available until expended.

(D) No more than 15 percent of the amount authorized to be appropriated under subparagraph (A) for any fiscal year may be expended in that fiscal year on administrative expenses.

(b) TECHNICAL AMENDMENT.— Section 8(c) of the Florida Keys National Marine Sanctuary and Protection Act (16 U.S.C. 1433 note) is amended by striking “paragraph (10” and inserting in lieu thereof “subsection(a).”

Subtitle C Hawaiian Islands Humpback Whale Sanctuary

Sec. 2301. Short Title.

This subtitle may be cited as the “Hawaiian Islands National Marine Sanctuary Act”.

Sec. 2302. Findings.

The Congress finds the following:

(1) Many of the diverse marine resources and ecosystems within the Western Pacific region are of national significance and importance.

(2) There are at present no ocean areas in the Hawaiian Islands designated as national marine sanctuaries or identified on the Department of Commerce’s Site Evaluation List of sites to be investigated as potential candidates for designation as a national marine sanctuary under title III of the Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 1431 et seq.).

(3) The Hawaiian Islands consist of 8 major islands and 124 minor islands, with a total land area of 6,423 square miles and a general coastline of 750 miles.

(4) The marine environment adjacent to and between the Hawaiian Islands is a diverse and unique subtropical marine ecosystem.

(5) The Department of Commerce recently concluded in its Kahoolawe Island National Marine Sanctuary Feasibility Study that there is preliminary evidence of biological, cultural, and historical resources adjacent to Kahoolawe Island to merit further investigation for national marine sanctuary status.

(6) The Department of Commerce also concluded in its Kahoolawe Island National Marine Sanctuary Feasibility Study that there are additional marine areas within the Hawaiian archipelago which merit further consideration for national marine sanctuary status and that the national marine sanctuary program could enhance marine resource protection in Hawaii.

(7) The Hawaiian stock of the endangered humpback whale, the largest of the three North Pacific

stocks, breed and calve within the waters of the main Hawaiian Islands.

(8) The marine areas surrounding the main Hawaiian Islands, which are essential breeding, calving, and nursing areas for the endangered humpback whale, are subject to damage and loss of their ecological integrity from a variety of disturbances.

(9) The Department of Commerce recently promulgated a humpback whale recovery plan which sets out a series of recommended goals and actions in order to increase the abundance of the endangered humpback whale.

(10) An announcement of certain Hawaiian waters frequented by humpback whales as an active candidate for marine sanctuary designation was published in the Federal Register on March 17, 1982 (47 FR 11544).

(11) The existing State and Federal regulatory and management programs applicable to the waters of the main Hawaiian Islands are inadequate to provide the kind of comprehensive and coordinated conservation and management of humpback whales and their habitat that is available under title III of the Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 1431 et seq.).

(12) Authority is needed for comprehensive and coordinated conservation and management of humpback whales and their habitat that will complement existing Federal and State regulatory authorities.

(13) There is a need to support, promote, and coordinate scientific research on, and monitoring of, that portion of the marine environment essential to the survival of the humpback whale.

(14) Public education, awareness, understanding, appreciation, and wise use of the marine environment are fundamental to the protection and conservation of the humpback whale.

(15) The designation, as a national marine sanctuary, of the areas of the marine environment adjacent to the main Hawaiian Islands which are essential to the continued recovery of the humpback whale is necessary for the preservation and protection of this important national marine resource.

(16) The marine sanctuary designated for the conservation and management of humpback whales could be expanded to include other marine resources of national significance which are determined to exist within the sanctuary.

Sec. 2303. Definitions.

In this subtitle, the following definitions apply:

(1) The term "adverse impact" means an impact that independently or cumulatively damages, diminishes, degrades, impairs, destroys, or otherwise harms.

(2) The term "Sanctuary" means the Hawaiian Islands Humpback Whale National Marine Sanctuary designated under section 2305.

(3) The term "Secretary" means the Secretary of Commerce.

Sec. 2304. Policy And Purposes.

(a) POLICY.—It is the policy of the United States to protect and preserve humpback whales and their habitat within the Hawaiian Islands marine environment.

(b) PURPOSES.—The purposes of this subtitle are

(1) to protect humpback whales and their habitat in the area described in section 2305(b);

(2) to educate and interpret for the public the relationship of humpback whales to the Hawaiian Islands marine environment;

(3) to manage such human uses of the Sanctuary consistent with this subtitle and title III of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended by this Act; and

(4) to provide for the identification of marine resources and ecosystems of national significance for possible inclusion in the sanctuary designated in section 2305(a).

Sec. 2305. Designation Of Sanctuary.

(a) DESIGNATION.—Subject to subsection (c), the area described in subsection (b)(1) and any area included under subsection (b)(2) are designated as the Hawaiian Islands Humpback Whale National Marine Sanctuary under title III of the Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 1451 et seq.), as amended by this title.

(b) AREA INCLUDED.—

(1) Subject to subsections (c) and (d), the area referred to in subsection (a) consists of the submerged lands and waters off the coast of the Hawaiian Islands seaward of the upper reaches of the wash of the waves on shore—

(A) to the 100-fathom (183-meter) isobath adjoining the islands of Lanai, Maui, and Molokai, including Penguin Bank but excluding the area within 3 nautical miles of the upper reaches of the waves on the shore of Kahoolawe Island;

(B) to the deep water area of Pailolo Channel from Cape Halawa, Molokai, to Nakalele Point, Maui, and southward; and

(C) to the 100-fathom (183-meter) isobath adjoining the Kilauea National Wildlife Refuge on the island of Kauai.

(2) (A) Within 6 months after the date of receipt of a request in writing from the Kahoolawe Island Reserve Commission for inclusion within the Sanctuary of the area of the marine environment within 3 nautical miles of the mean high tide line of Kahoolawe Island (in this section referred to as the ‘Kahoolawe Island waters’), the Secretary shall determine whether those waters may be suitable for inclusion in the Sanctuary.

(B) If the Secretary determines under subparagraph (A) that the Kahoolawe Island waters may be suitable for inclusion within the Sanctuary --

(i) the Secretary shall provide notice of that determination to the Governor of Hawaii; and

(ii) the Secretary shall prepare a supplemental environmental impact statement, management plan, and implementing regulations for that inclusion in accordance with this Act, the National Marine Sanctuaries Act, and the National Environmental Policy Act of 1969.

(3) The Secretary shall generally identify and depict the Sanctuary on National Oceanic and Atmospheric Administration charts. Those charts shall be maintained on file and kept available for public examination during regular business hours at the Office of Ocean and Coastal Resource Management of the National Oceanic and Atmospheric Administration. The Secretary shall update the charts to reflect any boundary modification under subsection (d), and any additional designation under paragraph (2) of this subsection.

(c) EFFECT OF OBJECTION BY GOVERNOR.—

(1)(A) If, within 45 days after the date of issuance of the comprehensive management plan and implementing regulations under section 2306, the Governor of Hawaii certifies to the Secretary that the management plan, the implementing regulations, or any term of the plan or regulations is unacceptable, the management plan, regulation, or term, respectively, shall not take effect in the

area of the Sanctuary lying within the seaward boundary of the State of Hawaii.

(B) If the Secretary considers that an action under subparagraph (A) will affect the Sanctuary in such a manner that the policy or purposes of this title cannot be fulfilled, the Secretary may terminate the designation under subsection (a). At least 30 days before that termination, the Secretary shall submit written notice of the termination to the Committee on Resources of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(2)(A) If, within 45 days after the Secretary issues the documents required under subsection (b)(2)(B)(ii), the Governor of Hawaii certifies to the Secretary that the inclusion of the Kahoolawe Island waters in the Sanctuary or any term of that inclusion is unacceptable--

(i) the inclusion or the term shall not take effect; and

(ii) subsection (b)(2) shall not apply during the 3-year period beginning on the date of that certification.

(B) If the Secretary considers that an action under subparagraph (A) regarding a term of the inclusion of the Kahoolawe Island waters will affect the inclusion or the administration of the Kahoolawe Island waters as part of the Sanctuary in such a manner that the policy or purposes of this title cannot be fulfilled, the Secretary may terminate that inclusion.

(d) BOUNDARY MODIFICATIONS.—No later than the date of issuance of the draft environmental impact statement for the Sanctuary under section 304(a)(1)(C)(vii) of the Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 1434(a)(1)(C)(vii)), the Secretary, in consultation with the Governor of Hawaii, if appropriate, may make modifications to the boundaries of the Sanctuary as necessary to fulfill the purposes of this subtitle. The Secretary shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Merchant Marine and Fisheries of the House of Representatives a written notification of such modifications.

Sec. 2306. Comprehensive Management Plan.

(a) PREPARATION OF PLAN.—The Secretary, in consultation with interested persons and appropriate federal, State, and local government authorities, shall develop and issue not later than 18 months after the date of enactment of this title a comprehensive management plan and implementing regulations to achieve the policy and purposes of this subtitle. In developing the plan and regulations, the Secretary shall follow the procedures specified in sections 303 and 304 of the Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 1433 and 1434), as amended by this title. Such comprehensive management plan shall—

(1) facilitate all public and private uses of the Sanctuary (including uses of Hawaiian natives customarily and traditionally exercised for subsistence, cultural, and religious purposes) consistent with the primary objective of the protection of humpback whales and their habitat;

(2) set forth the allocation of Federal and State enforcement responsibilities, as jointly agreed by the Secretary and the State of Hawaii;

(3) identify research needs and establish a long-term ecological monitoring program with respect to humpback whales and their habitat;

(4) identify alternative sources of funding needed to fully implement the plan's provisions and supplement appropriations under section 2307 of this subtitle and section 313 of the Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 1444);

(5) ensure coordination and cooperation between Sanctuary managers and other Federal, State, and local authorities with jurisdiction within or adjacent to the Sanctuary; and

(6) promote education among users of the Sanctuary and the general public about conservation of humpback whales, their habitat, and other marine resources.

(b) PUBLIC PARTICIPATION.—The Secretary shall provide for participation by the general public in development of the comprehensive management plan or any amendment thereto.

Sec. 2307. Limitation on User Fees.

(a) Limitation: The Secretary shall not institute any user fee under this Act or the National Marine Sanctuaries Act for any activity within the Hawaiian Islands National Marine Sanctuary or any use of the Sanctuary or its resources.

(b) User Fee Defined: In this section, the term ‘user fee’ does not include--

- (1) any fee authorized by section 310 of the National Marine Sanctuaries Act;
- (2) any gift or donation received under section 311 of that Act; and
- (3) any monetary or in-kind contributions under section 316 of that Act.

Sec. 2308. Authorization of Appropriations.

For carrying out this subtitle, there are authorized to be appropriated to the Secretary \$500,000 for fiscal year 1993 and \$300,000 for fiscal year 1994. Of the amounts appropriated under this section for fiscal year 1993—

- (1) not less than \$50,000 shall be used by the Western Pacific Regional Team to evaluate potential national marine sanctuary sites for inclusion on the Department of Commerce’s Site Evaluation List; and
- (2) not less than \$50,000 shall be used to continue the investigation of biological, cultural, and historical resources adjacent to Kahoolawe Island.

APPENDIX B – 1

Regulations

[Title 15, Volume 3, Parts 800 to end]
 [Revised as of January 1, 1998]
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**TITLE 15—
 COMMERCE AND FOREIGN TRADE**

**CHAPTER IX—
 NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION,
 DEPARTMENT OF COMMERCE**

**PART 922—
 NATIONAL MARINE SANCTUARY
 PROGRAM REGULATIONS***

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Authority: 16 U.S.C. 1431 et seq.

Source: 60 FR 66877, Dec. 27, 1995, unless otherwise noted.

Editorial Note: Nomenclature changes to part 922 appear at 62 FR 3789, Jan. 27, 1997; 62 FR 67724, Dec. 30, 1997.

Sec. 922.1 Applicability of regulations.

Unless noted otherwise, the regulations in subparts A, D and E apply to all twelve National Marine Sanctuaries for which site-specific regulations appear in subparts F through Q, respectively. Subparts B and C apply to the site evaluation list and to the designation of future Sanctuaries.

Sec. 922.2 Mission, goals, and special policies.

(a) In accordance with the standards set forth in title III of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended, also known as the National Marine Sanctuaries Act (Act) the mission of the National Marine Sanctuary program (Program) is to identify, designate and manage areas of the marine environment of special national, and in some cases international, significance due to their conservation, recreational, ecological, historical, research, educational, or aesthetic qualities.

(b) The goals of the Program are to carry out the mission to:

(1) Identify and designate as National Marine Sanctuaries areas of the marine environment which are of special national significance;

(2) Provide authority for comprehensive and coordinated conservation and management of these marine areas, and activities affecting them, in a manner which complements existing regulatory authorities;

(3) Support, promote, and coordinate scientific research on, and monitoring of, the resources of these marine areas, especially long-term monitoring and research of these areas;

(4) Enhance public awareness, understanding, appreciation, and wise use of the marine environment;

(5) Facilitate to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities;

(6) Develop and implement coordinated plans for the protection and management of these areas with appropriate Federal agencies, State and local governments, Native American tribes and organizations, international organizations, and other public and private interests concerned with the continuing health and resilience of these marine areas;

(7) Create models of, and incentives for, ways to conserve and manage these areas;

(8) Cooperate with global programs encouraging conservation of marine resources; and

(9) Maintain, restore, and enhance living resources by providing places for species that depend upon these marine areas to survive and propagate.

(c) To the extent consistent with the policies set forth in the Act, in carrying out the Program's mission and goals:

(1) Particular attention will be given to the establishment and management of marine areas as National Marine Sanctuaries for the protection of the area's natural resource and ecosystem values; particularly for ecologically or economically important or threatened species or species assemblages, and for off-shore areas where there are no ex-

isting special area protection mechanisms;

(2) The size of a National Marine Sanctuary, while highly dependent on the nature of the site's resources, will be no larger than necessary to ensure effective management;

(d) Management efforts will be coordinated to the extent practicable with other countries managing marine protected areas;

(e) Program regulations, policies, standards, guidelines, and procedures under the Act concerning the identification, evaluation, registration, and treatment of historical resources shall be consistent, to the extent practicable, with the declared national policy for the protection and preservation of these resources as stated in the National Historic Preservation Act of 1966, 16 U.S.C. 470 et seq., the Archeological and Historical Preservation Act of 1974, 16 U.S.C. 469 et seq., and the Archeological Resources Protection Act of 1979 (ARPA), 16 U.S.C. 470aa et seq. The same degree of regulatory protection and preservation planning policy extended to historical resources on land shall be extended, to the extent practicable, to historical resources in the marine environment within the boundaries of designated National Marine Sanctuaries. The management of historical resources under the authority of the Act shall be consistent, to the extent practicable, with the Federal archeological program by consulting the Uniform Regulations, ARPA (43 CFR part 7) and other relevant Federal regulations. The Secretary of the Interior's Standards and Guidelines for Archeology may also be consulted for guidance. These guidelines are available from the Office of Ocean and Coastal Management at (301) 713-3125.

Sec. 922.3 Definitions.

Act means title III of the Marine Protection, Research, and Sanctuaries Act of 1972, as amended, 16 U.S.C. 1431 et seq., also known as the National Marine Sanctuaries Act.

Active Candidate means a site selected by the Secretary from the Site Evaluation List for further consideration for possible designation as a National Marine Sanctuary.

Assistant Administrator means the Assistant Administrator for Ocean Services and Coastal Zone Management, National Oceanic and Atmospheric Administration (NOAA), or designee.

Benthic community means the assemblage of organisms, substrate, and structural formations found at or near the bottom that is periodically or permanently covered by water.

Commercial fishing means any activity that results in the sale or trade for intended profit of fish, shellfish, algae, or corals.

Conventional hook and line gear means any fishing apparatus operated aboard a vessel and composed of a single line terminated by a combination of sinkers and hooks or lures and spooled upon a reel that may be hand- or electrically operated, hand-held or mounted. This term does not include bottom longlines.

Cultural resources means any historical or cultural feature, including archaeological sites, historic structures, shipwrecks, and artifacts.

Director means, except where otherwise specified, the Director of the Office of Ocean and Coastal Resource Management, NOAA, or designee.

Exclusive economic zone means the exclusive economic zone as defined in the Magnuson Fishery Conservation and Management Act, 16 U.S. 1801 et seq.

Fish wastes means waste materials resulting from commercial fish processing operations.

Historical resource means any resource possessing historical, cultural, archaeological or paleontological significance, including sites, contextual information, structures, districts, and objects significantly associated with or representative of earlier people, cultures, maritime heritage, and human activities and events. Historical resources include "submerged cultural resources", and also include "historical properties," as defined in the National Historic Preservation Act, as amended, and its implementing regulations, as amended.

Indian tribe means any American Indian tribe, band, group, or community recognized as such by the Secretary of the Interior.

Injure means to change adversely, either in the short or long term, a chemical, biological or physical attribute of, or the viability of. This includes, but is not limited to, to cause the loss of or destroy.

Lightring means at-sea transfer of petroleum-based products, materials, or other matter from vessel to vessel.

Marine means those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands over which the United States exercises jurisdiction, including the exclusive economic zone, consistent with international law.

Mineral means clay, stone, sand, gravel, metalliferous ore, non-metalliferous ore, or any other solid material or other matter of commercial value.

National historic landmark means a district, site, building, structure or object designated as such by the Secretary of the Interior under the National Historic Landmarks Program (36 CFR part 65).

National Marine Sanctuary means an area of the marine environment of special national significance due to its resource or human-use values, which is designated as such to ensure its conservation and management.

Person means any private individual, partnership, corporation or other entity; or any officer, employee, agent, department, agency or instrumentality of the Federal government, of any State or local unit of government, or of any foreign government.

Regional Fishery Management Council means any fishery council established under section 302 of the Magnuson Fishery Conservation and Management Act, 16 U.S.C. 1801 et seq.

Sanctuary quality means any of those ambient conditions, physical-chemical characteristics and natural processes, the maintenance of which is essential to the ecological health of the Sanctuary, including, but not limited to, water quality, sediment quality and air quality.

Sanctuary resource means any living or non-living resource of a National Marine Sanctuary that contributes to the conservation, recreational, ecological, historical, research, educational, or aesthetic value of the Sanctuary, including, but not limited to, the substratum of the area of the Sanctuary, other submerged features and the surrounding seabed, carbonate rock, corals and other bottom formations, coralline algae and other marine plants and algae, marine invertebrates, brine-seep biota, phytoplankton, zooplankton, fish, seabirds, sea turtles and other marine reptiles, marine mammals and historical resources.

Secretary means the Secretary of the United States Department of Commerce, or designee.

Shunt means to discharge ex-

pended drilling cuttings and fluids near the ocean seafloor.

Site Evaluation List (SEL) means a list of selected natural and historical resource sites selected by the Secretary as qualifying for further evaluation for possible designation as National Marine Sanctuaries.

State means each of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, the United States Virgin Islands, Guam, and any other commonwealth, territory, or possession of the United States.

Subsistence use means the customary and traditional use by rural residents of areas near or in the marine environment for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles; and for barter, if for food or non-edible items other than money, if the exchange is of a limited and non-commercial nature.

Take or taking means: (1) For any marine mammal, sea turtle, or seabird listed as either endangered or threatened pursuant to the Endangered Species Act, to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or injure, or to attempt to engage in any such conduct; (2) For any other marine mammal, sea turtle, or seabird, to harass, hunt, capture, kill, collect or injure, or to attempt to engage in any such conduct. For the purposes of both (1) and (2) of this definition, this includes, but is not limited to, to collect any dead or injured marine mammal, sea turtle or seabird, or any part thereof; to restrain or detain any marine mammal, sea turtle or seabird, or any part thereof, no matter how temporarily; to tag any sea turtle, marine mammal or seabird; to operate a vessel or aircraft

or to do any other act that results in the disturbance or molestation of any marine mammal, sea turtle or seabird.

Tropical fish means fish or minimal sport and food value, usually brightly colored, often used for aquaria purposes and which lives in a direct relationship with live bottom communities.

Vessel means a watercraft of any description capable of being used as a means of transportation in/on the waters of a Sanctuary. [60 FR 66877, Dec. 27, 1995, as amended at 62 FR 4607, Jan. 30, 1997]

Sec. 922.4 Effect of National Marine Sanctuary designation.

The designation of a National Marine Sanctuary, and the regulations implementing it, are binding on any person subject to the jurisdiction of the United States. Designation does not constitute any claim to territorial jurisdiction on the part of the United States for designated sites beyond the U.S. territorial sea, and the regulations implementing the designation shall be applied in accordance with generally recognized principles of international law, and in accordance with treaties, conventions, and other agreements to which the United States is a party. No regulation shall apply to a person who is not a citizen, national, or resident alien of the United States, unless in accordance with:

(a) Generally recognized principles of international law;

(b) An agreement between the United States and the foreign state of which the person is a citizen; or

(c) An agreement between the United States and the flag state of the foreign vessel, if the person is a crew member of the vessel.

Subpart B—Site Evaluation List (SEL)

Sec. 922.10 General.

(a) The Site Evaluation List (SEL) was established as a comprehensive list of marine sites with high natural resource values and with historical qualities of special national significance that are highly qualified for further evaluation for possible designation as National Marine Sanctuaries.

(b) The SEL is currently inactive. Criteria for inclusion of marine sites on a revised SEL will be issued, with public notice and opportunity to comment, when the Director determines that the SEL should be reactivated.

(c) Only sites on the SEL may be considered for subsequent review as active candidates for designation.

(d) Placement of a site on the SEL, or selection of a site from the SEL as an active candidate for designation as provided for in Sec. 922.21, by itself shall not subject the site to any regulatory control under the Act. Such controls may only be imposed after designation.

Subpart C—Designation of National Marine Sanctuaries

Sec. 922.20 Standards and procedures for designation.

In designating a National Marine Sanctuary, the Secretary shall apply the standards and procedures set forth in section 303 and section 304 of the Act.

Sec. 922.21 Selection of active candidates.

(a) The Secretary shall, from time to time, select a limited number of sites from the SEL for Active Candi-

date consideration based on a preliminary assessment of the designation standards set forth in section 303 of the Act.

(b) Selection of a site as an Active Candidate shall begin the formal Sanctuary designation-evaluation process. A notice of intent to prepare a draft environmental impact statement shall be published in the Federal Register and in newspapers in the area(s) of local concern. A brief written analysis describing the site shall be provided. The Secretary, at any time, may drop a site from consideration if the Secretary determines that the site does not meet the designation standards and criteria set forth in the Act.

Sec. 922.22 Development of designation materials.

(a) In designating a National Marine Sanctuary, the Secretary shall prepare the designation materials described in section 304 of the Act.

(b) If a proposed Sanctuary includes waters within the exclusive economic zone, the Secretary shall notify the appropriate Regional Fishery Management Council(s) which shall have one hundred and twenty (120) days from the date of such notification to make recommendations and, if appropriate, prepare draft fishery regulations and to submit them to the Secretary. In preparing its recommendations and draft regulations, the Council(s) shall use as guidance the national standards of section 301(a) of the Magnuson Act (16 U.S.C. 1851) to the extent that they are consistent and compatible with the goals and objectives of the proposed Sanctuary designation. Fishery activities not proposed for regulation under section 304(a)(5) of the Act may be listed in the draft Sanctuary designa-

tion document as potentially subject to regulation, without following the procedures specified in section 304(a)(5) of the Act. If the Secretary subsequently determines that regulation of any such fishery activity is necessary, then the procedures specified in section 304(a)(5) of the Act shall be followed.

Sec. 922.23 Coordination with States and other Federal agencies.

(a) The Secretary shall consult and cooperate with affected States throughout the National Marine Sanctuary designation process. In particular the Secretary shall:

(1) Consult with the relevant State officials prior to selecting any site on the SEL as an Active Candidate pursuant to Sec. 922.21, especially concerning the relationship of any site to State waters and the consistency of the proposed designation with a federally approved State coastal zone management program. For the purposes of a consistency review by States with federally approved coastal zone management programs, designation of a National Marine Sanctuary is deemed to be a Federal activity, which, if affecting the State's coastal zone, must be undertaken in a manner consistent to the maximum extent practicable with the approved State coastal zone program as provided by section 307(c)(1) of the Coastal Zone Management Act of 1972, as amended, and implementing regulations at 15 CFR part 930, subpart.

(2) Ensure that relevant State agencies are consulted prior to holding any public hearings pursuant to section 304(a)(3) of the Act.

(3) Provide the Governor(s) of any State(s) in which a proposed Sanctuary would be located an opportunity to certify the designation

or any of its terms as unacceptable as specified in section 304(b)(1) of the Act.

(b) The Secretary shall develop proposed regulations relating to activities under the jurisdiction of one or more other Federal agencies in consultation with those agencies.

Sec. 922.24 Congressional documents.

In designating a National Marine Sanctuary, the Secretary shall prepare and submit to Congress those documents described in section 304 of the Act.

Sec. 922.25 Designation determination and findings.

(a) In designating a National Marine Sanctuary, the Secretary shall prepare a written Designation Determination and Findings which shall include those findings and determinations described in section 303 of the Act.

(b) In addition to those factors set forth in section 303 of the Act, the Secretary, when making a designation determination, shall consider the Program's fiscal capability to manage the area as a National Marine Sanctuary.

Subpart D—Management Plan Development and Implementation

Sec. 922.30 General.

(a) The Secretary shall implement each management plan, and applicable regulations, including carrying out surveillance and enforcement activities and conducting such research, monitoring, evaluation, and education programs as are necessary and reasonable to carry out the purposes and policies of the Act.

(b) Consistent with Sanctuary management plans, the Secretary shall develop and implement site-specific contingency and emergency-response plans designed to protect Sanctuary resources. The plans shall contain alert procedures and actions to be taken in the event of an emergency such as a shipwreck or an oil spill.

Sec. 922.31 Promotion and coordination of Sanctuary use.

The Secretary shall take such action as is necessary and reasonable to promote and coordinate the use of National Marine Sanctuaries for research, monitoring, and education purposes. Such action may include consulting with Federal agencies, or other persons to promote use of one or more Sanctuaries for research, monitoring and education, including coordination with the National Estuarine Research Reserve System.

Sec. 922.40 Purpose.

The purpose of the regulations in this subpart and in subparts F through Q is to implement the designations of the 12 National Marine Sanctuaries for which site specific regulations appear in subparts F through Q, respectively, by regulating activities affecting them, consistent with their respective terms of designation in order to protect, preserve and manage and thereby ensure the health, integrity and continued availability of the conservation, ecological, recreational, research, educational, historical and aesthetic resources and qualities of these areas. Additional purposes of the regulations implementing the designation of the Florida Keys and Hawaiian Islands Humpback Whale

National Marine Sanctuaries are found at Secs. 922.160, and 922.180, respectively. [62 FR 14815, Mar. 28, 1997]

Sec. 922.41 Boundaries.

The boundary for each of the 12 National Marine Sanctuaries covered by this part is described in subparts F through Q, respectively.

Sec. 922.42 Allowed activities.

All activities (e.g., fishing, boating, diving, research, education) may be conducted unless prohibited or otherwise regulated in subparts F through Q, subject to any emergency regulations promulgated pursuant to Secs. 922.44, 922.111(c), 922.165, or 922.186, subject to all prohibitions, regulations, restrictions, and conditions validly imposed by any Federal, State, or local authority of competent jurisdiction, including Federal and State fishery management authorities, and subject to the provisions of section 312 of the Act. The Assistant Administrator may only directly regulate fishing activities pursuant to the procedure set forth in section 304(a)(5) of the NMSA. [62 FR 14815, Mar. 28, 1997]

Sec. 922.43 Prohibited or otherwise regulated activities.

Subparts F through Q set forth site-specific regulations applicable to the activities specified therein. [62 FR 14815, Mar. 28, 1997]

Sec. 922.44 Emergency Regulations.

Where necessary to prevent or minimize the destruction of, loss of, or injury to a Sanctuary resource or

quality, or minimize the imminent risk of such destruction, loss, or injury, any and all such activities are subject to immediate temporary regulation, including prohibition. The provisions of this section do not apply to the Cordell Bank, Florida Keys and Hawaiian Islands Humpback Whale National Marine Sanctuaries. See Secs. 922.111(c), 922.165, and 922.186, respectively, for the authority to issue emergency regulations with respect to those sanctuaries. [62 FR 14815, Mar. 28, 1997]

Sec. 922.45 Penalties.

(a) Each violation of the NMSA or FKNMSPA, any regulation in this part, or any permit issued pursuant thereto, is subject to a civil penalty of not more than \$ 100,000. Each day of a continuing violation constitutes a separate violation.

(b) Regulations setting forth the procedures governing administrative proceedings for assessment of civil penalties, permit sanctions, and denials for enforcement reasons, issuance and use of written warnings, and release or forfeiture of seized property appear at 15 CFR part 904.

[60 FR 66877, Dec. 27, 1995, as amended at 62 FR 4607, Jan. 30, 1997]

Sec. 922.46 Response costs and damages.

Under section 312 of the Act, any person who destroys, causes the loss of, or injures any Sanctuary resource is liable to the United States for response costs and damages resulting from such destruction, loss or injury, and any vessel used to destroy, cause the loss of, or injure any Sanctuary

resource is liable in rem to the United States for response costs and damages resulting from such destruction, loss or injury.

Sec. 922.47 Pre-existing authorizations or rights and certifications of pre-existing authorizations or rights.

(a) Leases, permits, licenses, or rights of subsistence use or access in existence on the date of designation of any National Marine Sanctuary shall not be terminated by the Director. The Director may, however, regulate the exercise of such leases, permits, licenses, or rights consistent with the purposes for which the Sanctuary was designated.

(b) The prohibitions listed in subparts F through P of this part do not apply to any activity authorized by a valid lease, permit, license, approval or other authorization in existence on the effective date of Sanctuary designation, or in the case of the Florida Keys National Marine Sanctuary the effective date of the regulations in this subpart P, and issued by any Federal, State or local authority of competent jurisdiction, or by any valid right of subsistence use or access in existence on the effective date of Sanctuary designation, or in the case of the Florida Keys National Marine Sanctuary the effective date of the regulations in subpart P, provided that the holder of such authorization or right complies with certification procedures and criteria promulgated at the time of Sanctuary designation, or in the case of the Florida Keys National Marine Sanctuary the effective date of the regulations in subpart P of this part, and with any terms and conditions on the exercise of such authorization or right imposed by the Director as a

condition of certification as the Director deems necessary to achieve the purposes for which the Sanctuary was designated. [60 FR 66877, Dec. 27, 1995, as amended at 62 FR 4607, Jan. 30, 1997]

Sec. 922.48 National Marine Sanctuary permits—application procedures and issuance criteria.

(a) A person may conduct an activity prohibited by subparts F through O of this part if conducted in accordance with the scope, purpose, terms and conditions of a permit issued under this section and subparts F through O of this part. For the Florida Keys National Marine Sanctuary, a person may conduct an activity prohibited by subpart P if conducted in accordance with the scope, purpose, terms and conditions of a permit issued under Sec. 922.166.

(b) Applications for permits to conduct activities otherwise prohibited by subparts F through O of this part should be addressed to the Director and sent to the address specified in subparts F through O of this part. An application must include:

- (1) A detailed description of the proposed activity including a timetable for completion;
- (2) The equipment, personnel and methodology to be employed;
- (3) The qualifications and experience of all personnel;
- (4) The potential effects of the activity, if any, on Sanctuary resources and qualities; and
- (5) Copies of all other required licenses, permits, approvals or other authorizations.

(c) Upon receipt of an application, the Director may request such additional information from the applicant as he or she deems

necessary to act on the application and may seek the views of any persons or entity, within or outside the Federal government, and may hold a public hearing, as deemed appropriate. the relevant subpart.

(d) The Director, at his or her discretion, may issue a permit subject to such terms and conditions as he or she deems appropriate, to conduct a prohibited activity, in accordance with the criteria found in subparts F through O. The Director shall further impose, at a minimum, the conditions set forth in the relevant subpart.

(e) A permit granted pursuant to this section is nontransferable.

(f) The Director may amend, suspend, or revoke a permit issued cause. The Director may deny a permit application pursuant to this section, in whole or in part, if it is determined that the permittee or applicant has acted in violation of the terms and conditions of a permit or of the regulations set forth in this section or subparts F through O or for other good cause. Any such action shall be communicated in writing to the permittee or applicant by certified mail and shall set forth the reason(s) for the action taken. Procedures governing permit sanctions and denials for enforcement reasons are set forth in subpart D of 15 CFR part 904.

[60 FR 66877, Dec. 27, 1995, as amended at 62 FR 4607, Jan. 30, 1997]

Sec. 922.49 Notification and review of applications for leases, licenses, permits, approvals, or other authorizations to conduct a prohibited activity.

(a) A person may conduct an activity prohibited by subparts L through P of this part if such activity

is specifically authorized by any valid Federal, State, or local lease, permit, license, approval, or other authorization issued after the effective date of Sanctuary designation, or in the case of the Florida Keys National Marine Sanctuary after the effective date of the regulations in subpart P of this part, provided that:

(1) The applicant notifies the Director, in writing, of the application for such authorization (and of any application for an amendment, renewal, or extension of such authorization) within fifteen (15) days of the date of filing of the application or the effective date of Sanctuary designation, or in the case of the Florida Keys National Marine Sanctuary the effective date of the regulations in subpart P of this part, whichever is later;

(2) The applicant complies with the other provisions of this Sec. 922.49;

(3) The Director notifies the applicant and authorizing agency that he or she does not object to issuance of the authorization (or amendment, renewal, or extension); and

(4) The applicant complies with any terms and conditions the Director deems reasonably necessary to protect Sanctuary resources and qualities.

(b) Any potential applicant for an authorization described in paragraph (a) of this section may request the Director to issue a finding as to whether the activity for which an application is intended to be made is prohibited by subparts L through P of this part.

(c) Notification of filings of applications should be sent to the Director, Office of Ocean and Coastal Resource Management at the address specified in subparts L through P of this part. A copy of the

application must accompany the notification.

(d) The Director may request additional information from the applicant as he or she deems reasonably necessary to determine whether to object to issuance of an authorization described in paragraph (a) of this section, or what terms and conditions are reasonably necessary to protect Sanctuary resources and qualities. The information requested must be received by the Director within 45 days of the postmark date of the request. The Director may seek the views of any persons on the application.

(e) The Director shall notify, in writing, the agency to which application has been made of his or her pending review of the application and possible objection to issuance. Upon completion of review of the application and information received with respect thereto, the Director shall notify both the agency and applicant, in writing, whether he or she has an objection to issuance and what terms and conditions he or she deems reasonably necessary to protect Sanctuary resources and qualities, and reasons therefor. The Director shall state the reason(s) for any objection or the reason(s) that any terms and conditions are deemed necessary to protect Sanctuary resources and qualities.

(f) The Director may amend the terms and conditions deemed reasonably necessary to protect Sanctuary resources and qualities whenever additional information becomes available justifying such an amendment.

(g) Any time limit prescribed in or established under this Sec. 922.49 may be extended by the Director for good cause.

(h) The applicant may appeal any

objection by, or terms or conditions imposed by, the Director to the Assistant Administrator or designee in accordance with the provisions of Sec. 922.50.

[62 FR 4608, Jan. 30, 1997]

Sec. 922.50 Appeals of administrative action.

(a)(1) Except for permit actions taken for enforcement reasons (see subpart D of 15 CFR part 904 for applicable procedures), an applicant for, or a holder of, a National Marine Sanctuary permit; an applicant for, or a holder of, a Special Use permit pursuant to section 310 of the Act; a person requesting certification of an existing lease, permit, license or right of subsistence use or access under Sec. 922.47; or, for those Sanctuaries described in subparts L through P, an applicant for a lease, permit, license or other authorization issued by any Federal, State, or local authority of competent jurisdiction (hereinafter appellant) may appeal to the Assistant Administrator:

(i) The granting, denial, conditioning, amendment, suspension or revocation by the Director of a National Marine Sanctuary or Special Use permit;

(ii) The conditioning, amendment, suspension or revocation of a certification under Sec. 922.47; or

(iii) For those Sanctuaries described in subparts L through P, the objection to issuance of or the imposition of terms and conditions on a lease, permit, license or other authorization issued by any Federal, State, or local authority of competent jurisdiction.

(2) For those National Marine Sanctuaries described in subparts F through K, any interested person may also appeal the same actions

described in paragraphs (a)(1) (i) and (ii) of this section. For appeals arising from actions taken with respect to these National Marine Sanctuaries, the term “appellant” includes any such interested persons.

(b) An appeal under paragraph (a) of this section must be in writing, state the action(s) by the Director appealed and the reason(s) for the appeal, and be received within 30 days of receipt of notice of the action by the Director. Appeals should be addressed to the Assistant Administrator for Ocean Services and Coastal Zone Management, NOAA 1305 East-West Highway, 13th Floor, Silver Spring, MD 20910.

(c)(1) The Assistant Administrator may request the appellant to submit such information as the Assistant Administrator deems necessary in order for him or her to decide the appeal. The information requested must be received by the Assistant Administrator within 45 days of the postmark date of the request. The Assistant Administrator may seek the views of any other persons. For the Monitor National Marine Sanctuary, if the appellant has requested a hearing, the Assistant Administrator shall grant an informal hearing. For all other National Marine Sanctuaries, the Assistant Administrator may determine whether to hold an informal hearing on the appeal. If the Assistant Administrator determines that an informal hearing should be held, the Assistant Administrator may designate an officer before whom the hearing shall be held.

(2) The hearing officer shall give notice in the Federal Register of the time, place and subject matter of the hearing. The appellant and the Director may appear personally or by

counsel at the hearing and submit such material and present such arguments as deemed appropriate by the hearing officer. Within 60 days after the record for the hearing closes, the hearing officer shall recommend a decision in writing to the Assistant Administrator.

(d) The Assistant Administrator shall decide the appeal using the same regulatory criteria as for the initial decision and shall base the appeal decision on the record before the Director and any information submitted regarding the appeal, and, if a hearing has been held, on the record before the hearing officer and the hearing officer’s recommended decision. The Assistant Administrator shall notify the appellant of the final decision and the reason(s) therefore in writing. The Assistant Administrator’s decision shall constitute final agency action for the purpose of the Administrative Procedure Act.

(e) Any time limit prescribed in or established under this section other than the 30-day limit for filing an appeal may be extended by the Assistant Administrator or hearing office for good cause.

[60 FR 66877, Dec. 27, 1995, as amended at 62 FR 4608, Jan. 30, 1997]

Note: Subparts F – Q are not reprinted in this Appendix.

APPENDIX C

Abandoned Shipwreck Act

Abandoned Shipwreck Act of 1987

Public Law 100-298

An Act to establish the title of States in certain abandoned shipwrecks,
and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SEC. 1 SHORT TITLE.

This Act may be cited as the "Abandoned Shipwreck Act of 1987".

SEC. 2 FINDINGS.

The Congress finds that-

(a) States have the responsibility for management of a broad range of living and nonliving resources in State waters and submerged lands; and

(b) included in the range of resources are certain abandoned shipwrecks which have been deserted and to which the owner has relinquished ownership rights with no retention.

SEC. 3 DEFINITIONS.

For purposes of this Act-

(a) the term "embedded" means firmly affixed in the submerged lands or in coralline formations such that the use of tools of excavation is required in order to move the bottom sediments to gain access to the shipwreck, its cargo and any part thereof;

(b) the term "National Register" means the National Register of Historic Places maintained by the Secretary of the Interior under section 101 of the National Historic Preservation Act (16 U.S.C. 470a);

(c) the terms "public lands", "Indian lands", and "Indian tribe" have the same meaning given the terms in the Archaeological Resource Protection Act of 1979 (16 U.S.C. 470aa-470ll);

(d) the term "shipwreck" means a vessel or wreck, its cargo, and other contents;

(e) the term "State" means a State of the United States, the District of Columbia, Puerto Rico, Guam, the Virgin Islands, American Samoa, and the Northern Mariana Islands; and

(f) the term "submerged lands" means the lands-

(1) that are "lands beneath navigable waters," as defined in section 2 of the Submerged Lands Act (43 U.S.C. 1301);

(2) of Puerto Rico, as described in section 8 of the Act of March 2, 1917, as amended (48 U.S.C. 749);

(3) of Guam, the Virgin Islands and America Samoa, as described in section 1 of Public Law 93-435 (48 U.S.C. 1705); and

(4) of the Commonwealth of the Northern Mariana Islands, as described in section 801 of Public Law 94-241 (48 U.S.C. 1681).

SEC. 4 RIGHTS OF ACCESS.

(a) ACCESS RIGHTS. -In order to-

(1) clarify that State waters and shipwrecks offer recreational and educational opportunities to sport divers and other interested groups, as well as irreplaceable State resources for tourism, biological sanctuaries, and historical research; and

(2) provide that reasonable access by the public to such abandoned shipwrecks be permitted by the State holding title to such shipwrecks pursuant to section 6 of this Act, it is the declared policy of the Congress that States carry out their responsibilities under this Act to develop appropriate and consistent policies so as to-

(A) protect national resources and habitat areas;

(B) guarantee recreational exploration of shipwreck sites; and

(C) allow for appropriate public and private sector recovery of shipwrecks consistent with the protection of historical values and environmental integrity of the shipwrecks and the sites.

(b) PARKS AND PROTECTED AREAS. -In managing the resources subject to the provisions of this Act, States are encouraged to create underwater parks or areas to provide additional protection for such resources. Funds available to States from grants from the Historic Preservation fund shall be available, in accordance with the provisions of title I of the National Historic Preservation Act, for the study, interpretation, protection, and preservation of historic shipwrecks and properties.

SEC. 5 PREPARATION OF GUIDELINES.

(a) In order to encourage the development of underwater parks and the administrative cooperation necessary for the comprehensive management of underwater resources related to historic shipwrecks, the Secretary of the Interior, acting through the Director of the National Park Service, shall within nine months after the date of enactment of this Act prepare and publish guidelines in the Federal Register which shall seek to:

(1) maximize the enhancement of cultural resources;

(2) foster a partnership among sport divers, fishermen, archeologists, salvors, and other interests to manage shipwreck resources of the States and the United States;

(3) facilitate access and utilization by recreational interests;

(4) recognize the interests of individuals and groups engaged in shipwreck discovery and salvage.

(b) Such guidelines shall be developed after consultation with appropriate public and private sector interests (including the Secretary of Commerce, the Advisory Council on Historic Preservation, sport

divers, State Historic Preservation Officers, professional dive operators, salvors, archeologists, historic preservationists, and fishermen).

(c) Such guidelines shall be available to assist States and the appropriate federal agencies in developing legislation and regulations to carry out their responsibilities under this Act.

SEC. 6 RIGHTS OF OWNERSHIP.

(a) UNITED STATES TITLE. -The United States asserts title to any abandoned shipwreck that is-

(1) embedded in submerged lands of a State;

(2) embedded in coralline formations protected by a State on submerged lands or a State; or

(3) on submerged lands of a State and is included in or determined to be eligible for inclusion in the National Register.

(b) The public shall be given adequate notice of the location of any shipwreck to which title is asserted under this section. The Secretary of the Interior, after consultation with the appropriate State Historic Preservation Officer, shall make a written determination that an abandoned shipwreck meets the criteria for eligibility for inclusion in the National Register of Historic Places under clause (a)(3).

(c) TRANSFER OF TITLE TO STATES. -The title of the United States to any abandoned shipwreck asserted under subsection (a) of this section is transferred to the State in or on whose submerged lands the shipwreck is located.

(d) EXCEPTION. -Any abandoned shipwreck in or on public lands of the United States is the property of the United States Government. Any abandoned shipwreck in or on any Indian lands is the property of the Indian tribe owning such lands.

(e) RESERVATION OF RIGHTS. -This section does not affect any right reserved by the United States or by any State (including any right reserved with respect to Indian lands) under-

(1) section 3, 5, or 6 of the Submerged Lands Act (43 U.S.C. 1311, 1313, and 1314); or

(2) section 19 or 20 of the Act of March 3, 1899 (33 U.S.C. 414 and 415).

SEC. 7 RELATIONSHIP TO OTHER LAWS.

(a) LAW OF SALVAGE AND THE LAW OF FINDS. -The law of salvage and the law of finds shall not apply to abandoned shipwrecks to which section 6 of this Act applies.

(b) LAWS OF THE UNITED STATES. -This Act shall not change the laws of the United States relating to shipwrecks, other than those to which this Act applies.

(c) EFFECTIVE DATE. -This Act shall not affect any legal proceeding brought prior to the date of enactment of this Act. _____

APPENDIX D

National Historic Preservation Act of 1966

National Historic Preservation Act of 1966, as amended
Public Law 102–575
Sections 106 and 110 excerpted

An Act to Establish a Program for the Preservation of Additional Historic Properties throughout the Nation, and for Other Purposes.

Section 106 (16 U.S.C. 470f)

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking.

Section 110 (16 U.S.C. 470h–2)

(a)(1) The heads of all Federal agencies shall assume responsibility for the preservation of historic properties which are owned or controlled by such agency. Prior to acquiring, constructing, or leasing buildings for purposes of carrying out agency responsibilities, each Federal agency shall use, to the maximum extent feasible, historic properties available to the agency. Each agency shall undertake, consistent with the preservation of such properties and the mission of the agency and the professional standards established pursuant to section 101(g), any preservation, as may be necessary to carry out this section.

(2) Each Federal agency shall establish (unless exempted pursuant to section 214), in consultation with the Secretary, a preservation program for the identification, evaluation, and nomination to the National Register of Historic Places, and protection of historic properties. Such program shall ensure—

(A) that historic properties under the jurisdiction or control of the agency, are identified, evaluated, and nominated to the National Register;

(B) that such properties under the jurisdiction or control of the agency as are listed in or may be eligible for the National Register are managed and maintained in a way that considers the preservation of their historic, archaeological, architectural, and cultural values in compliance with section 106 and gives special consideration to the preservation of such values in the case of properties designated as having National significance;

(C) that the preservation of properties not under the jurisdiction or control of the agency, but subject to be potentially affected by agency actions are given full consideration in planning;

(D) that the agency's preservation-related activities are carried out in consultation with other Federal, State, and local agencies, Indian tribes, Native Hawaiian organizations carrying out historic preservation

planning activities, and with the private sector; and

(E) that the agency's procedures for compliance with section 106---

(i) are consistent with regulations issued by the Council pursuant to section 211;

(ii) provide a process for the identification and evaluation of historic properties for listing in the National Register and the development and implementation of agreements, in consultation with State Historic Preservation Officers, local governments, Indian tribes, Native Hawaiian organizations, and the interested public, as appropriate, regarding the means by which adverse effects on such properties will be considered; and

(iii) provide for the disposition of Native American cultural items from Federal or tribal land in a manner consistent with section 3(c) of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3002(c)).

(b) Each Federal agency shall initiate measures to assure that where, as a result of Federal action or assistance carried out by such agency, a historic property is to be substantially altered or demolished, timely steps are taken to make or have made appropriate records, and that such records then be deposited, in accordance with section 101(a), in the Library of Congress or with such other appropriate agency as may be designated by the Secretary, for future use and reference.

(c) The head of each Federal agency shall, unless exempted under section 214, designate a qualified official to be known as the agency's "preservation officer" who shall be responsible for coordinating that agency's activities under this Act. Each Preservation Officer may, in order to be considered qualified, satisfactorily complete an appropriate training program established by the Secretary under section 101(h).

(d) Consistent with the agency's mission and mandates, all Federal agencies shall carry out agency programs and projects (including those under which any Federal assistance is provided or any Federal license, permit, or other approval is required) in accordance with the purposes of this Act and, give consideration to programs and projects which will further the purposes of this Act.

(e) The Secretary shall review and approve the plans of transferees of surplus federally owned historic properties not later than ninety days after his receipt of such plans to ensure that the prehistorical, historical, architectural, or culturally significant values will be preserved or enhanced.

(f) Prior to the approval of any Federal undertaking which may directly and adversely affect any National Historic Landmark, the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking.

(g) Each Federal agency may include the costs of preservation activities of such agency under this Act as eligible project costs in all undertakings of such agency or assisted by such agency. The eligible project costs may also include amounts paid by a Federal agency to any State to be used in carrying out such preservation responsibilities of the Federal agency under this Act, and reasonable costs may be charged to

Federal licensees and permittees as a ANNO condition to the issuance of such license or permit.

(h) The Secretary shall establish an annual preservation awards program under which he may make monetary awards in amounts not to exceed \$1,000 and provide citations for special achievement to officers and employees of Federal, State, and certified local governments in recognition of their outstanding contributions to the preservation of historic resources. Such program may include the issuance of annual awards by the president of the United States to any citizen of the United States recommended for such award by the Secretary.

(i) Nothing in this Act shall be construed to require the preparation of an environmental impact statement where such a statement would not otherwise be required under the National Environmental Policy Act of 1969, and nothing in this Act shall be construed to provide any exemption from any requirement respecting the preparation of such a statement under such Act.

(j) The Secretary shall promulgate regulations under which the requirements of this section may be waived in whole or in part in the event of a major natural disaster or an imminent threat to the national security.

(k) Each Federal agency shall ensure that the agency will not grant a loan, loan guarantee, permit, license, or other assistance to an applicant who, with intent to avoid the requirements of section 106, has intentionally significantly adversely affected a historic property to which the grant would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the agency, after consultation with the Council, determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.

(l) With respect to any undertaking subject to section 106 which adversely affects any property included in or eligible for inclusion in the National Register, and for which a Federal agency has not entered into an agreement with the Council, the head of such agency shall document any decision made pursuant to section 106. The head of such agency may not delegate his or her responsibilities pursuant to such section. Where a section 106 memorandum of agreement has been executed with respect to an undertaking, such memorandum shall govern the undertaking and all of its parts.

APPENDIX E

**Part 761,
Aboriginal Records and Antiquities Public Act 451
(1994), as amended**

Part 761, Aboriginal Records and Antiquities Public Act 451 (1994), as amended

324.76101 Definitions.

Sec. 76101. As used in this part:

(a) "Abandoned property" means an aircraft; a watercraft, including a ship, boat, canoe, skiff, raft, or barge; the rigging, gear, fittings, trappings, and equipment of an aircraft or watercraft; the personal property of the officers, crew, and passengers of an aircraft or watercraft; and the cargo of an aircraft or watercraft, which have been deserted, relinquished, cast away, or left behind and for which attempts at reclamation have been abandoned by owners and insurers. Abandoned property also means materials resulting from activities of historic and prehistoric Native Americans.

(b) "Bottomlands" means the unpatented lake bottomlands of the Great Lakes.

(c) "Committee" means the underwater salvage and preserve committee created in section 76103.

(d) "Great Lakes" means lakes Erie, Huron, Michigan, St. Clair, and Superior.

(e) "Great Lakes bottomlands preserve" means an area located on the bottomlands of the Great Lakes and extending upward to and including the surface of the water, which is delineated and set aside by rule for special protection of abandoned property of historical value, or ecological, educational, geological, or scenic features or formations having recreational, educational, or scientific value. A preserve may encompass a single object, feature, or formation, or a collection of several objects, features, or formations.

(f) "Historical value" means value relating to, or illustrative of, Michigan history, including the statehood, territorial, colonial, and historic, and prehistoric native American periods.

(g) "Mechanical or other assistance" means all human made devices, including pry bars, wrenches and other hand or power tools, cutting torches, explosives, winches, flotation bags, lines to surface, extra divers buoyancy devices, and other buoyance devices, used to raise or remove artifacts.

(h) "Recreational value" means value relating to an activity that the public engages in, or may engage in, for recreation or sport including scuba diving and fishing.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76102 Aboriginal records and antiquities; right to explore, survey, excavate, and regulate reserved to state; possessory right or title to abandoned property.

Sec. 76102. (1) The state reserves to itself the exclusive right and privilege, except as provided in this part, of exploring, surveying, excavating, and regulating through its authorized officers, agents, and employees, all aboriginal records and other antiquities, including mounds, earthworms, forts, burial and village sites, mines or other relics, and abandoned property of historical or recreational value found upon or within any of the lands owned by or under the control of the state.

(2) The state reserves to itself a possessory right or title superior to that of a finder to abandoned property

of historical or recreational value found on the state owned bottomlands of the Great Lakes. This property shall belong to this state with administration and protection jointly vested in the department and the secretary of state,

History: Add. 1995, Act 58. Imd. Eff. May 24, 1995.

324.76103 Underwater salvage and preserve committee; creation; purpose; appointment, qualifications, and terms of members; vacancy; compensation; appointment, term, and duties of chairperson; committee as advisory body; functions of committee; limitation.

Sec. 76103. (1) The underwater salvage and preserve committee is created in the department of natural resources to provide technical and other advice to the department and the secretary of state with respect to their responsibilities under this part.

(2) The underwater salvage and preserve committee shall consist of 9 members appointed as follows:

(a) Two individuals appointed by the department who have primary responsibility in the department of natural resources for administering this part.

(b) Two individuals appointed by the secretary of state who have primary responsibility in the department of state for administering this part.

(c) One individual appointed by the director of commerce.

(d) Four individuals appointed by the governor with the advice and consent of the senate from the general public. Two of these individuals shall have experience in recreational scuba diving.

(3) An individual appointed to the committee shall serve for a term of 3 years. A vacancy on the committee shall be filled in the same manner as an original appointment and the term of a member appointed to fill a vacancy shall be for 3 years. Members of the committee shall serve without compensation, except for their regular state salary where applicable.

(4) The chairperson of the committee shall alternate between the representatives from the department and the department of state. The chairperson shall be designated by the department or the secretary of state, whichever is applicable from among his or her representatives on the committee. The chairperson's term shall run for 12 months, from October 1 through September 30. The department shall appoint the first chairperson of the committee for a term ending September 30, 1989. The chairperson shall call meetings as necessary but not less than 4 times per year, set the agenda for meetings, ensure that adequate minutes are taken, and file an annual report of committee proceedings with the head of the departments of state, natural resources, and commerce.

(5) The committee is an advisory body and may perform all of the following functions:

(a) Make recommendations with regard to the creation and boundaries of Great Lakes underwater preserves.

(b) Review applications for underwater salvage permits and make recommendations regarding issuance.

(c) Consider and make recommendations regarding the charging of permit fees and the appropriate use of revenue generated by those fees.

(d) Consider the need for and the content of rules intended to implement this part and make recommendations concerning the promulgation of rules.

(e) Consider and make recommendations concerning appropriate legislation.

(f) Consider and make recommendations concerning program operation.

(6) The committee shall not replace or supersede the responsibility or authority of the secretary of state or the department to carry out their responsibilities under this part.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76104 Deed; clause reserving to state property and exploration rights in aboriginal antiquities; exceptions; waiver.

Sec. 76104. A deed, as provided by this part, given by this state, except state tax deeds for the conveyance of any land owned by the state, shall contain a clause reserving to this state a property right in aboriginal antiquities including mounds, earthworms, forts, burial and village sites, mines, or other relics and also reserving the right to explore and excavate for the aboriginal antiquity by and through this state's authorized agent and employee. This section applies only to the sale of tax reverted land. The department, with the approval of the secretary of state, may waive this reservation when conveying platted property and when making conveyances under subpart 3 of part 21.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76105 Permit for exploration or excavation of aboriginal remain; exception.

Sec. 76105. A person, either personally or through an agent or employee, shall not explore or excavate an aboriginal remain covered by this part upon lands owned by the state, except under a permit issued by the department with written approval of the secretary of state. A permit shall be issued without charge. This section shall not apply to the Mackinac Island state park commission on lands owned or controlled by the Mackinac Island state park commission.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76106 Removal of relics or records of antiquity; consent of landowner required.

Sec. 76106. Without the consent of the land owner, a person shall not remove any relics or records of antiquity such as human or other bones; shells, stone, bone, or copper implements; pottery or shards of pottery, or similar artifacts and objects from the premises where they have been discovered.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76107 Permit to recover, alter, or destroy abandoned property; recovered property as property of secretary of state; prohibitions as to human body or remains; violation as felony; penalty.

Sec. 76107. (1) Except as provided in section 76108, a person shall not recover, alter, or destroy abandoned property which is in, on, under, or over the bottomlands of the Great Lakes, including those within a Great Lakes bottomlands preserve, unless the person has a permit issued jointly by the secretary of state and the department pursuant to section 76109.

(2) A person who recovers abandoned property without a permit when a permit is required by this part shall transmit the property to the secretary of state and the recovered property shall be the property of the secretary of state.

(3) A person shall not remove, convey, mutilate, or deface a human body or the remains of a human body located on the bottomlands of the Great Lakes.

(4) A person who violates subsection (1) by recovering or destroying abandoned property with a fair market value of \$100.00 or more is guilty of a felony, punishable by imprisonment for not more than 2 years, or by a fine of not more than \$5,000.00, or both.

History: Add 1995, Act 58, Imd. Eff. May 24, 1995.

324.76108 Recovery of abandoned property without permit; report; availability of recovered property for inspection; release of property.

Sec. 76108. (1) A person may recover abandoned property outside a Great Lakes bottomlands preserve without a permit if the abandoned property is not attached to, nor located on, in, or located in the immediate vicinity of and associated with a sunken aircraft or watercraft and if the abandoned property is recoverable by hand without mechanical or other assistance.

(2) A person who recovers abandoned property valued at more than \$10.00 without a permit pursuant to subsection (1) shall file a written report within 30 days after removal of the property with the department or the secretary of state if the property has been abandoned for more than 30 years. The written report shall list all recovered property that has been abandoned for more than 30 years and the location of the property at the time of recovery. For a period of 90 days after the report is filed, the person shall make the recovered property available to the department and the secretary of state for inspection at a location in this state. If the secretary of state determines that the recovered property does not have historical value, the secretary of state shall release the property to the person by means of a written instrument.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76109 Permit; scope; application; filing, form, and contents; additional information or documents; notice of deficient application; failure to respond; approval or disapproval of application; display of property; payment of salvage costs; recovery of cargo outside Great Lakes bottomlands preserves; administrative review; conduct of hearing; combined appeals; joint decision and order; duration of permit; issuance of new permit; transfer or assignment of permit.

Sec. 76109. (1) A permit issued under this section shall authorize a person to recover abandoned property located on, in, or located in the immediate vicinity of and associated with a sunken aircraft or watercraft.

(2) A person shall file an application for a permit with the department on a form prescribed by the department and approved by the secretary of state. The application shall contain all of the following information:

(a) The name and address of the applicant.

(b) The name, if known, of the watercraft or aircraft on or around which recovery operations are to occur and a current photograph or drawing of the watercraft or aircraft, if available.

- (c) The location of the abandoned property to be recovered and the depth of water in which it may be found.
 - (d) A description of each item to be recovered.
 - (e) The method to be used in recovery operations.
 - (f) The proposed disposition of the abandoned property recovered, including the location at which it will be available for inspection by the department and the secretary of state.
 - (g) Other information which the department or the secretary of state considers necessary in evaluating the request for a permit.
- (3) An application for a permit is not complete until all information requested on the application form and any other information requested by the department or the secretary of state has been received by the department. After receipt of an otherwise complete application, the department may request additional information or documents as are determined to be necessary to make a decision to grant or deny a permit. The department, or the secretary of state, shall notify the applicant in writing when the application is deficient.
- (4) An applicant notified that an application for a permit may be deficient and returned due to insufficient information under subsection (3) shall, within 20 days after the date the notice is mailed, provide the information. If the applicant fails to respond within the 20-day period the application shall be denied unless the applicant requests additional time and provides reasonable justification for an extension of time.
- (5) The department and the secretary of state shall, with the advice of the committee, approve or disapprove an application for a permit within 30 days after the date a complete application is filed with the department. The department and the secretary of state may approve an application conditionally or unconditionally. A condition to the approval of an application shall be in writing on the face of the permit. The department and the secretary of state may impose such conditions as are considered reasonable and necessary to protect the public trust and general interests, including conditions that accomplish 1 or more of the following:
- (a) Protect and preserve the abandoned property to be recovered, and the recreational value of the area in which recovery is being accomplished.
 - (b) Assure reasonable public access to the abandoned property after recovery.
 - (c) Are in conformity with rules applying to activities within a Great Lakes bottomlands preserve.
 - (d) Prohibit injury, harm, and damage to a bottomlands site or abandoned property not authorized for removal during and after salvage operations by the permit holder.
 - (e) Prohibit or limit the amount of discharge of possible pollutants, such as floating timbers, planking, and other debris, which may emanate from the shipwreck, plane wreck, or salvage equipment.

(f) Require the permit holder to submit a specific removal plan prior to commencing any salvaging activities. Among other matters considered appropriate by either the department or the secretary of state, or both, the removal plan may be required to ensure the safety of those removing or assisting in the removal of the abandoned property and to address how the permit holder proposes to prevent, minimize, or mitigate potential adverse effects upon the abandoned property to be removed, that portion of the abandoned property which is not to be removed, and the surrounding geographic features.

(6) The department shall approve an application for a permit unless the department determines that the abandoned property to be recovered has substantial recreational value in itself or in conjunction with other abandoned property in its vicinity underwater, or the recovery of abandoned property would not comply with rules applying to a Great Lakes bottomlands preserve.

(7) The secretary of state shall approve the application for a permit unless the secretary of state determines that the abandoned property to be recovered has substantial historical value in itself or in conjunction with other abandoned property in its vicinity. If the property has substantial historical value, the secretary of state, pursuant to subsection (5), may impose a condition to the approval of the application requiring the applicant to turn over recovered property to the secretary of state for the purpose of preserving the property or permitting public access to the property. The secretary of state may authorize the display of the property in a public or private museum or by a local unit of government. In addition to the conditions authorized by subsection (5), the secretary of state may provide for payment of salvage costs in connection with the recovery of the abandoned property.

(8) A person who discovers an abandoned watercraft that is located outside of a Great Lakes bottomlands preserve is entitled to recover cargo situated on, in, or associated with the watercraft, if the person applies for a permit pursuant to this section within 90 days after discovering the watercraft. If an application for a permit to recover cargo is not filed within 90 days after a watercraft discovery, subject to subsections (4) and (5) an exclusive cargo recovery permit shall be issued to the first person applying for such a permit. Only 1 permit to recover the same cargo shall be issued and operative at a time. When a watercraft containing cargo is simultaneously discovered by more than 1 person, a permit shall be approved with respect to the first person or persons jointly applying for a permit.

(9) A person aggrieved by a condition contained on a permit or by the denial of an application for a permit may request an administrative review of the condition or the denial by the commission or the secretary of state, whichever disapproves the application or imposes the condition. A person shall file the request for review with the commission or the secretary of state, whichever is applicable, within 90 days after the permit application is submitted to the department. An administrative hearing conducted pursuant to this subsection shall be conducted under the procedures set forth in chapter 4 of the administrative procedures act of 1969, Act No. 306 of the Public Acts of 1969, being sections 24.271 to 24.287 of the Michigan Compiled Laws. If neither the department or the secretary of state approves the application and an administrative review is requested from both the commission and the secretary of state, the appeals shall be combined upon request of the appellant or either the commission or the secretary of state and a single administrative hearing shall be conducted. The commission and the secretary of state shall issue jointly the final decision and order in the case.

(10) A permit issued under this section shall be valid until December 31 of the year in which the application for the permit was filed and is not renewable. If an item designated in a permit for recovery is not

recovered, a permit holder may, upon request following the expiration of the permit, be issued a new permit to remove the same abandoned property if the permit holder demonstrates that diligence in attempting recovery was exercised under the previously issued permit.

(11) A permit issued under this section shall not be transferred or assigned unless the assignment is approved in writing by both the department and the secretary of state.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76110 Recovered abandoned property; report; examination; removal from state; action for recovery; release of property.

Sec. 76110. (1) Within 10 days after recovery of abandoned property, a person with a permit issued pursuant to section 76109 shall report the recovery in writing to the department. The person recovering the abandoned property shall give authorized representatives of the department and the secretary of state an opportunity to examine the abandoned property for a period of 90 days after recovery. Recovered abandoned property shall not be removed from this state without written approval of the department and the secretary of state. If the recovered abandoned property is removed from the state without written approval, the attorney general, upon request from the department or the secretary of state, shall bring an action for the recovery of the property.

(2) If the secretary of state determines that the recovered abandoned property does not have historical value, the secretary of state shall release the property to the person holding the permit by means of a written instrument.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76111 Great Lakes bottomlands preserves; establishment; rules; determination; factors; granting permit to recover abandoned artifacts; limitation; intentional sinking of vessel; prohibited use of state money.

Sec. 76111. (1) The department shall establish Great Lakes bottomlands preserves by rule. A Great Lakes bottomlands preserve shall be established by emergency rule if it is determined by the department that this action is necessary to immediately protect an object or area of historical or recreational value.

(2) A Great Lakes bottomlands preserve may be established whenever a bottomlands area includes a single watercraft of significant historical value, includes 2 or more abandoned watercraft, or contains other features of archaeological, historical, recreational, geological, or environmental significance. Bottomlands areas containing few or no watercraft or other features directly related to the character of a preserve may be excluded from preserves.

(3) In establishing a Great Lakes bottomlands preserve, the department shall consider all of the following factors:

(a) Whether creating the preserve is necessary to protect either abandoned property possessing historical or recreational value, or significant underwater geological or environmental features.

(b) The extent of local public and private support for creation of the preserve.

(c) Whether a preserve development plan has been prepared by a state or local agency.

(d) The extent to which preserve support facilities such as roads, marinas, charter services, hotels, medical hyperbaric facilities, and rescue agencies have been developed in or are planned for the area.

(4) The department and the secretary of state shall not grant a permit to recover abandoned artifacts within a Great Lakes bottomlands preserve except for historical or scientific purposes or when the recovery will not adversely affect the historical, cultural, or recreational integrity of the preserve area as a whole.

(5) An individual Great Lakes bottomlands preserve shall not exceed 400 square miles in area. Great Lakes bottomlands preserves shall be limited in total area to not more than 10% of the Great Lakes bottomlands within this state.

(6) Upon the approval of the committee, not more than 1 vessel associated with Great Lakes maritime history may be sunk intentionally within a Great Lakes bottomlands preserve. However, state money shall not be expended to purchase, transport, or sink the vessel.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.76112 Rules generally.

Sec. 76112. (1) The department and the secretary of state, jointly or separately, may promulgate rules as are necessary to implement this part.

(2) Within each Great Lakes bottomlands preserve, the department and the secretary of state may jointly promulgate rules that govern access to and use of a Great Lakes bottomlands preserve. These rules may regulate or prohibit the alteration, destruction, or removal of abandoned property, features, or formations within a preserve.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76113 Limitations not imposed by §§324.76107 to 324.76110.

Sec. 76113. Sections 76107 to 76110 shall not be considered to impose the following limitations:

(a) A limitation on the right of a person to engage in diving for recreational purposes in and upon the Great Lakes or the bottomlands of the Great Lakes.

(b) A limitation on the right of the department or the secretary of state to recover, or to contract for the recovery of, abandoned property in and upon the bottomlands of the Great Lakes.

(c) A limitation on the right of a person to own either abandoned property recovered before July 2, 1980 or abandoned property released to a person after inspection.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76114 Suspension or revocation of permit; grounds; hearing; civil action.

Sec. 76114. (1) If the department or the secretary of state finds that the holder of a permit issued pursuant to section 76105 or 76109 is not in compliance with this part, a rule promulgated under this part, or a provision of or condition in the permit, or has damaged abandoned property or failed to use diligence in attempting to recover property for which a permit was issued, the department or the secretary of state, individually or jointly, may summarily suspend or revoke the permit. If the permit holder requests a hearing within 15 days following the effective date of the suspension or revocation, the commission or the

secretary of state shall conduct an administrative hearing pursuant to chapter 4 of the administrative procedures act of 1969, Act No. 306 of the Public Acts of 1969, being sections 24.271 to 24.287 of the Michigan Compiled Laws, to consider whether the permit should be reinstated.

(2) The attorney general, on behalf of the department or the secretary of state, individually or jointly, may commence a civil action in circuit court to enforce compliance with this part, to restrain a violation of this part or any action contrary to a decision denying a permit, to enjoin the further removal of artifacts, geological material, or abandoned property, or to order the restoration of an affected area to its prior condition.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76115 Dangers accepted by participants in sport of scuba diving.

Sec. 76115. Each person who participates in the sport of scuba diving on the Great Lakes bottomlands accepts the dangers that adhere in that sport insofar as the dangers are obvious and necessary. Those dangers include, but are not limited to, injuries which can result from entanglements in sunken watercraft or aircraft; the condition of sunken watercraft or aircraft; the location of sunken watercraft or aircraft; the failure of the state to fund staff or programs at bottomlands preserves; and the depth of the objects and bottomlands within preserves.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76116 Violation as misdemeanor; penalty.

Sec. 76116. (1) A person who violates section 76105 or 76106 is guilty of a misdemeanor, punishable by imprisonment for not more than 30 days, or a fine of not more than \$100.00, or both.

(2) A person who violates sections 76107 or 76111 or a rule promulgated under this part is guilty of a misdemeanor. Unless another penalty is provided in this part, a person convicted of a misdemeanor under this subsection is punishable by imprisonment for not more than 6 months, or a fine of not more than \$500.00, or both.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76117 Attaching, proceeding against, or confiscating equipment or apparatus; procedure; disposition of proceeds.

Sec. 76117. (1) If a person who violates this part or a rule promulgated under this part uses a watercraft, mechanical or other assistance, scuba gear, sonar equipment, a motor vehicle, or any other equipment or apparatus during the course of committing the violation, the items so used may be attached, proceeded against, and confiscated as prescribed in this part.

(2) To effect confiscation, the law enforcement or conservation officer seizing the property shall file a verified complaint in the circuit court for the county in which the seizure was made or in the circuit court for Ingham county. The complaint shall set forth the kind of property seized, the time and place of the seizure, the reasons for the seizure, and a demand for the property's condemnation and confiscation. Upon the filing of the complaint, an order shall be issued requiring the owner to show cause why the property should not be confiscated. The substance of the complaint shall be stated in the order. The order to show cause shall fix the time for service of the order and for the hearing on the proposed condemnation and confiscation.

(3) The order to show cause shall be served on the owner of the property as soon as possible, but not less than 7 days before the complaint is to be heard. The court, for cause shown, may hear the complaint on shorter notice. If the owner is not known or cannot be found, notice may be served in 1 or more of the following ways:

(a) By posting a copy of the order in 3 public places for 3 consecutive weeks in the county in which the seizure was made and by sending a copy of the order by certified mail to the last known business or residential address of the owner. If the last addresses of the owner are not known, mailing a copy of the order is not required.

(b) By publishing a copy of the order in a newspaper once each week for 3 consecutive weeks in the county where the seizure was made and by sending a copy of the order by registered mail to the last known residential address of the owner. If the last residential address of the owner is not known, mailing a copy of the order is not required.

(c) In such a manner as the court directs.

(4) Upon hearing of the complaint if the court determines that the property mentioned in the petition was possessed, shipped, or used contrary to law, either by the owner or by a person lawfully in possession of the property under an agreement with the owner, an order shall be made condemning and confiscating the property and directing its sale or other disposal by the department. If the owner signs a property release, a court proceeding is not necessary. At the hearing, if the court determines that the property was not possessed, shipped, or used contrary to law, the court shall order the department to immediately return the property to its owner.

(5) The department shall deposit the proceeds it receives under this section into the state treasury to the credit of the underwater preserve fund created in section 76118.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

324.76118 Underwater Preserve fund; creation; sources of revenue; purposes for which money appropriated.

Sec. 76118. (1) The underwater preserve fund is created as a separate fund in the state treasury, and it may receive revenue as provided in this part, or revenue from any other source.

(2) Money in the underwater preserve fund shall be appropriated for only the following purposes:

(a) To the secretary of state for the development of maritime archaeology in this state.

(b) To the department of commerce for the promotion of Great Lakes bottomlands preserves.

(c) To the department for the enforcement of this part.

History: Add. 1995, Act 58, Imd. Eff. May 24, 1995.

APPENDIX F

**Part 325,
Great Lakes Submerged Lands
Public Act 451 (1994)**

Part 325, Great Lakes Submerged Lands

Public Act 451 (1994), as amended

324.32501 “Marina purposes” defined.

Sec. 32501. As used in this part, “marina purposes” means an operation making use of submerged bottomlands or filled-in bottomlands of the Great Lakes for the purpose of service to boat owners or operators, which operation may restrict or prevent the free public use of the affected bottomlands or filled-in lands.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32502 Unpatented lake bottomlands and unpatented made lands in Great Lakes; construction of part.

Sec. 32502. The lands covered and affected by this part are all of the unpatented lake bottomlands and unpatented made lands in the Great Lakes, including the bays and harbors of the Great Lakes, belonging to the state or held in trust by it, including those lands that have been artificially filled in. The waters covered and affected by this part are all of the waters of the Great Lakes within the boundaries of the state. This part shall be construed so as to preserve and protect the interests of the general public in the lands and waters described in this section, to provide for the sale, lease, exchange, or other disposition of unpatented lands and the private or public use of waters over patented and unpatented lands, and to permit the filling in of patented submerged lands whenever it is determined by the department that the private or public use of those lands and waters will not substantially affect the public use of those lands and waters for hunting, fishing, swimming, pleasure boating, or navigation or that the public trust in the state will not be impaired by those agreements for use, sales, lease, or other disposition. The word “land” or “lands” as used in this part refers to the aforesaid described unpatented lake bottomlands and unpatented made lands and patented lands in the Great Lakes and the bays and harbors of the Great Lakes lying below and lakeward of the natural ordinary high-water mark, but this part does not affect property rights secured by virtue of a swamp land grant or rights acquired by accretions occurring through natural means or reliction. For purposes of this part, the ordinary high-water mark shall be at the following elevations above sea level, international Great Lakes datum of 1955: Lake Superior, 601.5 feet; Lakes Michigan and Huron, 579.8 feet; Lake St. Clair, 574.7 feet; and Lake Erie, 571.6 feet.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32503 Agreements pertaining to waters over and filling in of submerged patented lands; lease or deed of unpatented lands; terms, conditions, and requirements; reservation of mineral rights; exception; riparian owner dredging or placing materials on bottomland; permit; lease or deed permitting drilling operations for taking oil or gas or for exploration purposes; conditions; execution of agreement, lease, or deed with United States.

Sec. 32503. (1) Except as otherwise provided in this section, the department, after finding that the public trust in the waters will not be impaired or substantially affected, may enter into agreements pertaining to waters over and the filling in of submerged patented lands, or to lease or deed unpatented lands, after

approval of the state administrative board. Quitclaim deeds, leases, or agreements covering unpatented lands may be issued or entered into by the department with any person, and shall contain such terms, conditions, and requirements as the department determines to be just and equitable and in conformance with the public trust. The department shall reserve to the state all mineral rights, including, but not limited to, coal, oil, gas, sand, gravel, stone, and other materials or products located or found in those lands, except where lands are occupied or to be occupied for residential purposes at the time of conveyance.

(2) A riparian owner shall obtain a permit from the department before dredging or placing spoil or other materials on bottomland.

(3) The department shall not enter into a lease or deed of unpatented lands that permits drilling operations for the taking of oil or gas, unless all drilling operations originate from locations above and inland of the ordinary high-water mark. The department shall not enter into a lease or deed of unpatented lands that permits drilling for exploration purposes unless the drilling operations originate from locations above and inland of the ordinary high-water mark.

(4) An agreement, lease, or deed entered into under this part by the department with the United States shall be entered into and executed pursuant to the property rights acquisition act, Act No. 201 of the Public Acts of 1986, being section 3.251 to 3.262 of the Michigan Compiled Laws.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

Compiler's note: In subsection (4), the phrase "being section 3.251 to 3.262" evidently should read "being sections 3.251 to 3.262."

324.32504 Unpatented lake lands and unpatented made lands; application for conveyance; contents; qualifications of applicant; consent; approval; fee.

Sec. 32504. (1) Application for a deed or lease to unpatented lands or agreement for use of water areas over patented lands shall be on forms provided by the department. An application shall include a surveyed description of the lands or water area applied for, together with a surveyed description of the riparian or littoral property lying adjacent and contiguous to the lands or water area, certified to by a registered land surveyor. The description shall show the location of the water's edge at the time it was prepared and other information that is required by the department. The applicant shall be a riparian or littoral owner or owners of property touching or situated opposite the unpatented land or water area over patented lands applied for or an occupant of that land. The application shall include the names and mailing addresses of all persons in possession or occupancy or having an interest in the adjacent or contiguous riparian or littoral property or having riparian or littoral rights or interests in the lands or water areas applied for, and the application shall be accompanied by the written consent of all persons having an interest in the lands or water areas applied for in the application.

(2) Before an application is acted upon by the department, the applicant shall secure approval of or permission for his or her proposed use of such lands or water area from any federal agency as provided by law, the department with the advice of the Michigan waterways commission, and the legislative body of the local unit or units of government within which such land or water area is or will be included, or to which it is contiguous or adjacent. A deed, lease, or agreement shall not be issued or entered into by the department without such approvals or permission. The department may also require the applicant to furnish an abstract of title and ownership, and a 20-year tax history on the riparian or littoral property that is contiguous or adjacent to the lands or water area applied for, as well as on the lands applied for, if available.

(3) The department shall require the applicant to deposit a fee of not less than \$50.00 for each application filed. The fee shall be deposited with the state treasurer to the credit of the state's general fund. If a deed, lease, or other agreement is approved by the department, the applicant is entitled to credit for the fee against the consideration that is paid for the deed, lease, or other agreement.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32505 Unpatented lake bottomlands and unpatented made lands; consideration for conveyances or lease.

Sec. 32505. (1) If the department determines that it is in the public interest to grant an applicant a deed or lease to such lands or enter into an agreement to permit use and improvements in the waters or to enter into any other agreement in regard thereto, the department shall determine the amount of consideration to be paid to the state by the applicant for the conveyance or lease of unpatented lands.

(2) The department may permit, by lease or agreement, the filling in of patented and unpatented submerged lands and permit permanent improvements and structures after finding that the public trust will not be impaired or substantially injured.

(3) The department may issue deeds or may enter into leases if the unpatented lands applied for have been artificially filled in or are proposed to be changed from the condition that exists on October 14, 1955 by filling, sheet piling, shoring, or by any other means, and such lands are used or to be used or occupied in whole or in part for uses other than existing, lawful riparian or littoral purposes. The consideration to be paid to the state for the conveyance or lease of unpatented lands by the applicant shall be not less than the fair, cash market value of the lands determined as of the date of the filing of the application, minus any improvements placed on the lands, but the sale price shall not be less than 30% of the value of the land. In determining the fair, cash market value of the lands applied for, the department may give due consideration to the fact that the lands are connected with the riparian or littoral property belonging to the applicant, and to the uses, including residential and commercial, being made or which can be made of the lands.

(4) Agreements for the lands or water area described in section 32502 may be granted to or entered into with local units of government for public purposes and containing those terms and conditions that may be considered just and equitable in view of the public trust involved and may include the granting of permission to make such fills as may be necessary.

(5) If the unpatented lands applied for have not been filled in or in any way substantially changed from their natural character at the time the application is filed with the department, and the application is filed for the purpose of flood control, shore erosion control, drainage and sanitation control, or to straighten irregular shore lines, then the consideration to be paid to the state by the applicant shall be the fair, cash value of such land, giving due consideration to its being adjacent to and connected with the riparian or littoral property owned by the applicant.

(6) Leases or agreements covering unpatented lands may be granted or entered into with riparian or littoral proprietors for commercial marina purposes or for marinas operated by persons for consideration and containing terms and conditions that are considered by the department to be just and equitable. The leases may include either filled or unfilled lake bottomlands, or both. Rental shall commence as of the date of use of the unpatented lands for the marina operations. Dockage and other uses by marinas in waters over patented lands on October 14, 1955 shall be considered to be lawful riparian use.

(7) If the department after investigation determines that an applicant has willfully and knowingly filled in or in any way substantially changed the lands applied for with an intent to defraud, or if the applicant has acquired such lands with knowledge of such a fraudulent intent and is not an innocent purchaser, the sale price shall be the fair, cash market value of the land. An applicant may request a hearing of a determination made under this subsection. The department shall grant a hearing if requested.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32506 Unpatented lands and unpatented made lands; value determination by department; appraisal; decision of court.

Sec. 32506. The fair, cash market value of lands approved for sale under this part shall be determined by the department. Consideration paid to the state shall not be less than \$50.00. If the applicant is not satisfied with the value determined by the department, within 30 days after the receipt of the determination he or she may submit a petition in writing to the circuit court of the county in which the lands are located, and the court shall appoint an appraiser or appraisers as the court shall determine for an appraisal of the lands. The decision of the court is final.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32507 Receipts; disposition; accounting; employees.

Sec. 32507. (1) All money received by the department from the sale, lease, or other disposition of land and water areas under this part shall be forwarded to the state treasurer and be credited to the land and water management permit fee fund created in section 30113.

(2) The department shall comply with the accounting laws of this state and the requirements with respect to submission of budgets. The department may hire employees, assistants, and services that may be necessary within the appropriation made by the legislature and may delegate this authority as may be necessary to implement this part.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32508 Lands conveyed; taxation.

Sec. 32508. All lands conveyed or leased under this part are subject to taxation and the general property tax laws and other laws as other real estate used and taxed by the governmental unit or units within which the land is or may be included.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32509 Rules.

Sec. 32509. The department may promulgate rules, in accordance with the requirements of law, consistent with this part, that may be necessary to implement this part.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32510 Land filled, excavated, or modified without approval; misdemeanor; penalty; issuance or service of appearance ticket; "minor offense" defined.

Sec. 32510. (1) Except as provided in subsection (2), a person who excavates or fills or in any manner alters or modifies any of the land or waters subject to this part without the approval of the department is guilty of a misdemeanor, punishable by imprisonment for not more than 1 year or a fine of not more than \$1,000.00, or both. Land altered or modified in violation of this part shall not be sold to any person convicted under this section at less than fair, cash market value.

(2) A person who commits a minor offense is guilty of a misdemeanor, punishable by a fine of not more than \$500.00 for each violation. A law enforcement officer may issue and serve an appearance ticket upon a person for a minor offense pursuant to sections 9a to 9g of chapter IV of the code of criminal procedure, Act No. 175 of the Public Acts of 1927, being sections 764.9a to 764.9g of the Michigan Compiled Laws.

(3) As used in this section, "minor offense" means either of the following violations of this part if the department determines that restoration of the affected property is not required:

(a) The failure to obtain a permit under this part.

(b) A violation of a permit issued under this part.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32511 Certificate of location of lakeward boundary; application; riparian owner; fee.

Sec. 32511. A riparian owner may apply to the department for a certificate suitable for recording indicating the location of his or her lakeward boundary or indicating that the land involved has accreted to his or her property as a result of natural accretions or placement of a lawful, permanent structure. The application shall be accompanied by a fee of \$200.00 and proof of upland ownership.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32512 Acts prohibited; exceptions.

Sec. 32512. Unless a permit has been granted by the department or authorization has been granted by the legislature, or except as to boat wells and slips facilitating private, noncommercial, recreational boat use, not exceeding 50 feet in length where the spoil is not disposed of below the ordinary high-water mark of the body of water to which it is connected, a person shall not do any of the following:

(a) Construct, dredge, commence, or do any work with respect to an artificial canal, channel, ditch, lagoon, pond, lake, or similar waterway where the purpose is ultimate connection of the waterway with any of the Great Lakes, including Lake St. Clair.

(b) Connect any natural or artificially constructed waterway, canal, channel, ditch, lagoon, pond, lake, or similar waterway with any of the Great Lakes, including Lake St. Clair, for navigation or any other purpose.

(c) Dredge or place spoil or other material on bottomland.

(d) Construct a marina.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32513 Application for permit; contents; fees; disposition of fees.

Sec. 32513. (1) Before any work or connection specified in section 32512 is undertaken, a person shall file an application with the department setting forth the following:

- (a) The name and address of the applicant.
- (b) The legal description of the lands included in the project.
- (c) A summary statement of the purpose of the project.
- (d) A map or diagram showing the proposal on an adequate scale with contours and cross-section profiles of the waterway to be constructed.
- (e) Other information required by the department.

(2) Except as provided in subsections (3) and (4), an application for a permit under this section shall be accompanied by a fee according to the following schedule:

(a) Until October 1, 1999:

(i) For activities included in the minor project category as described in rules promulgated under this part, \$50.00.

(ii) For construction or expansion of a marina, a fee of:

(A) \$50.00 for an expansion of 1-10 slips to an existing permitted marina.

(B) \$100.00 for a new marina with 1-10 proposed marina slips.

(C) \$250.00 for an expansion of 11-50 slips to an existing permitted marina, plus \$10.00 for each slip over 50.

(D) \$500.00 for a new marina with 11-50 proposed marina slips, plus \$10.00 for each slip over 50.

(E) \$1,500.00 if an existing permitted marina proposes maintenance dredging of 10,000 cubic yards or more or the addition of seawalls, bulkheads, or revetments of 500 feet or more.

(iii) For major projects other than a project described in subparagraph (ii)(E), involving any of the following, a fee of \$2,000.00:

(A) Dredging of 10,000 cubic yards or more.

(B) Filling of 10,000 cubic yards or more.

(C) Seawalls, bulkheads, or revetment of 500 feet or more.

(D) Filling or draining of 1 acre or more of coastal wetland.

(E) New dredging or upland boat basin excavation in areas of suspected contamination.

(F) New breakwater or channel jetty.

(G) Shore protection, such as groins and underwater stabilizers, that extend 150 feet or more on Great Lakes bottomlands.

- (H) New commercial dock or wharf of 300 feet or more in length.
- (iv) For all other projects not listed in subparagraphs (i) through (iii), \$500.00.
- (b) Beginning October 1, 1999, a fee of \$50.00 for any project listed in subdivision (a).
- (3) A project that requires review and approval under this part and 1 or more of the following is subject to only the single highest permit fee required under this part or the following:
 - (a) Part 301.
 - (b) Part 303.
 - (c) Part 323.
 - (d) Section 3104.
 - (e) Section 117 of the subdivision control act of 1967, Act No. 288 of the Public Acts of 1967, being section 560.117 of the Michigan Compiled Laws.
- (4) If work has been done in violation of a permit requirement under this part and restoration is not ordered by the department, the department may accept an application for a permit if the application is accompanied by a fee equal to 2 times the permit fee required under this section.
- (5) The department shall forward all fees collected under this section to the state treasurer for deposit into the land and water management permit fee fund created in section 30113.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995;—Am. 1995, Act 170, Imd. Eff. Oct. 9, 1995.

324.32514 Application for permit; copies; local units; adjacent riparian owners; objections; hearing; time; notice.

Sec. 32514. Upon receipt of the application, the department shall mail copies to the department of public health, the clerks of the county, city, village, and township, and the drain commissioner of the county or, if none, the road commissioner of the county, in which the project or body of water affected is located, and to the adjacent riparian owners, accompanied by a statement that unless a written objection is filed with the department within 20 days after the mailing of the copies, the department may take action to grant the application. The department may set the application for public hearing. At least 10 days' notice of the hearing shall be given by publication in a newspaper circulated in the county and by mailing copies of the notice to the persons named in this section.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.

324.32515 Permit; issuance; conditions; waterways; maintenance.

Sec. 32515. If the department finds that the project will not injure the public trust or interest including fish and game habitat, that the project conforms to the requirements of law for sanitation, and that no material injury to the rights of any riparian owners on any body of water affected will result, the department shall issue a permit authorizing enlargement of the waterway affected. The permit shall provide that the artificial waterway shall be a public waterway, except intake or discharge canals or channels on property owned, controlled, and used by a public utility. The department may impose further conditions in the permit that it

finds reasonably necessary to protect the public health, safety, welfare, trust, and interest, and private rights and property. The existing and future owners of land fronting on the artificial waterway are liable for maintenance of the waterway in accordance with the conditions of the permit.

History: Add. 1995, Act 59, Imd. Eff. May 24, 1995.