

SOUTHERN LAKE HURON ASSESSMENT



Charting the Course for the Bluewater Coast

2010-2012

Natural Resource Protection and Access

Included in this presentation:

- Status and trends
- Priorities and challenges
- Options
- Tools and resources
- Local case studies
 - Park master planning
 - Blue Water Sportfishing Club
 - Bay Port Fish Company

For more information,
contact:

Lynn Vaccaro, coastal
research specialist

Jim Diana, professor of fish
ecology

Mary Bohling, extension
educator

Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

Priority Strategies

- **Conserve a network of shoreline, riparian and wetland areas for water quality, public access and recreation.** Purchase public land for recreation and protect natural resources from further development; expand green infrastructure.
- **Expand community involvement** in environmental issues – promote local field trips, onsite underwater and freighter cameras, service projects for schools, and volunteer restoration and monitoring programs.
- **Promote local fishing opportunities** through seminars about targeted fishing techniques, tournaments, festivals and informational materials.

Protection, Access, Participation



1) Fishing



2) Coastal Lands

Status and
Trends

Priorities
and Barriers

Options


Tools and
Resources




Current
Projects



Changes in Lake Huron

- Mussels
- Muck, phragmites
- Food web
- Charter fishing
- Sport fishing
- Commercial fishing

**MICHIGAN SEA GRANT**
UNIVERSITY OF MICHIGAN • MICHIGAN STATE UNIVERSITY
WWW.MISEAGRANT.UMICH.EDU



THE CHANGING FISHERY OF LAKE HURON

Past, present and future

The fishery of Lake Huron has undergone several transformations over the last 100 years. This summary explains some of the changes affecting the lake's food web and the fishing industry.

DAYS OF PLENTY: Early 1900s
Historically, Lake Huron has supported an important commercial fishery for both the U.S. and Canada. In the early 1900s, approximately 5 million pounds of ciscoes (chubs and lake herring), 1 million pounds of lake sturgeon, 6 million pounds of lake trout and 6 million pounds of lake whitefish were harvested annually from the lake. However, this level of fishing was not sustainable, and after many years of fishing pressure, harvests severely declined.

SEA LAMPREY AND ALEWIFE: 1940s
Lake Huron's fishery changed dramatically with the invasions of sea lamprey and alewife. Lake trout, whitefish and cisco populations in the Great Lakes plummeted as a result of lamprey-induced mortality, and alewife and rainbow smelt populations increased without predators and competition from similar fish. Unlike Lake Michigan where the fish community was dominated by alewives, smelt and alewives appeared to be equally abundant in Lake Huron.

THE GOLDEN YEARS OF SALMON: 1960s-1980s
The balance of predator and prey fish in Lake Huron began to improve in the 1960s. Chinook and coho salmon were introduced to prey upon the overly abundant alewife and smelt and to create a new sport fishery.

An increase in salmon and trout in Lake Huron resulted in two changes: declines in the alewife population; and increases in native species like slimy sculpin, burbot, troutperch, stickleback and spottail shiner. By the 1980s, a commercial fishery for chubs had recovered to about 1 million pounds per year, and lake whitefish to about 6 million pounds.

INVASIVE MUSSELS: 1980s
Throughout the mid- to late-1900s, other invasive species arrived in the Great Lakes. However, one of the more significant invasions began in the late 1980s. First Zebra and after quagga mussels, arrived in the Great Lakes as hitchhikers on ocean-going ships and began spreading throughout Lake Huron as well as the other Great Lakes and inland waters. The invasive mussels are filter feeders, consuming plankton and sediment from the water column and concentrating nutrients at the bottom of the lake. As a result, the water of Lake Huron has become clearer and some types of algae have flourished, including green algae that washes up on beaches and forms muck.

The invasive mussels consume plankton that support small fish – causing ripple effects up the entire food chain. They are at least partially responsible for the precipitous drop in forage fish, which began in 2003 and continue to impact salmon and other predator fish species.

Status and
Trends

Priorities
and Barriers

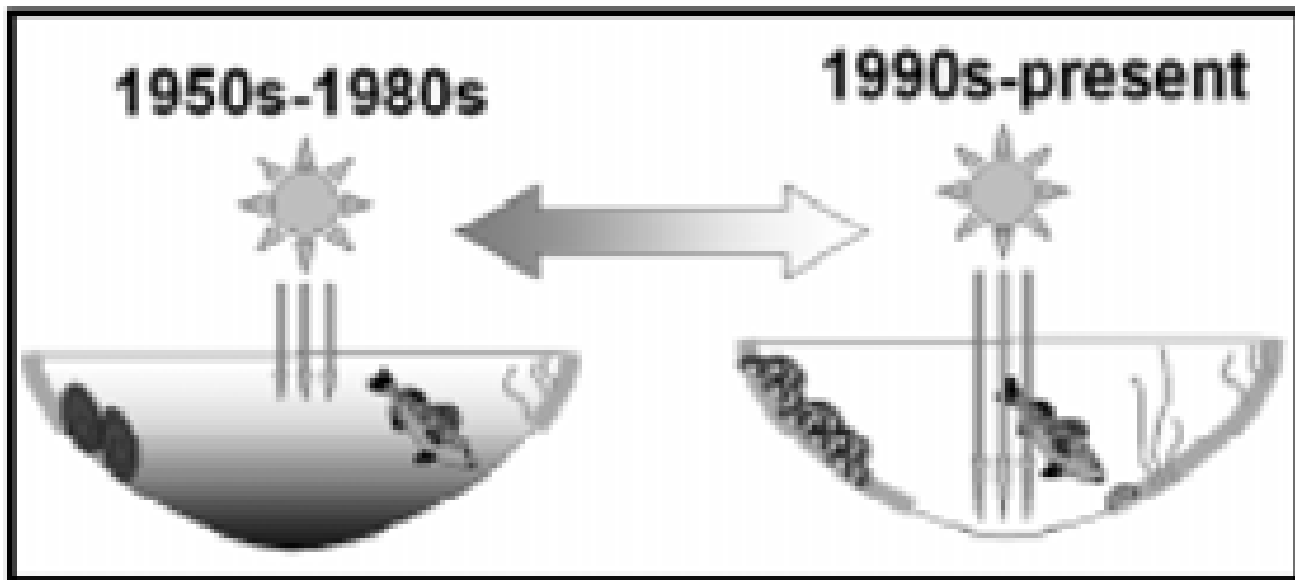
Options

Tools and
Resources

Current
Projects



Changes in Lake Huron



Status and
Trends

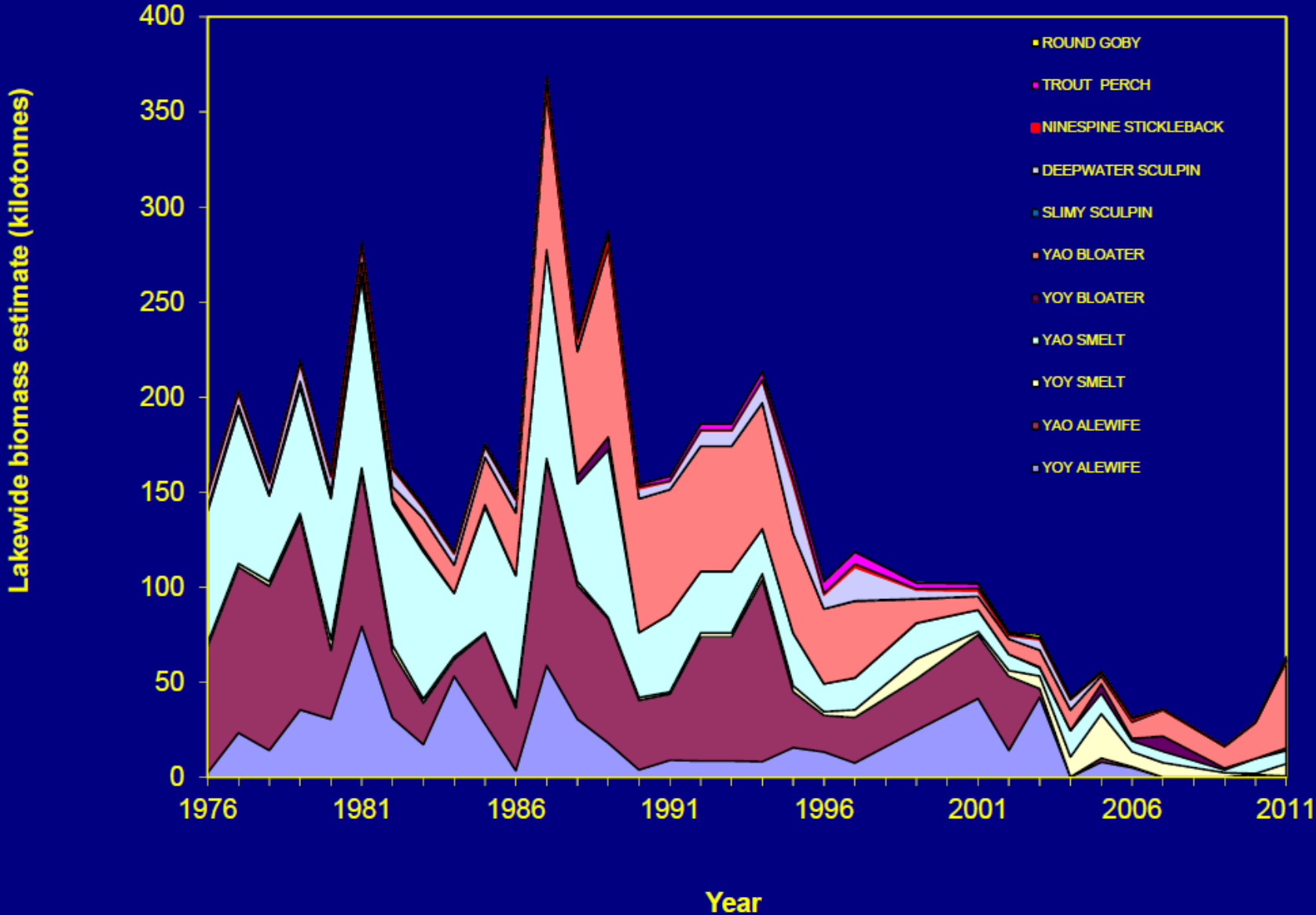
Priorities
and Barriers

Options

Tools and
Resources

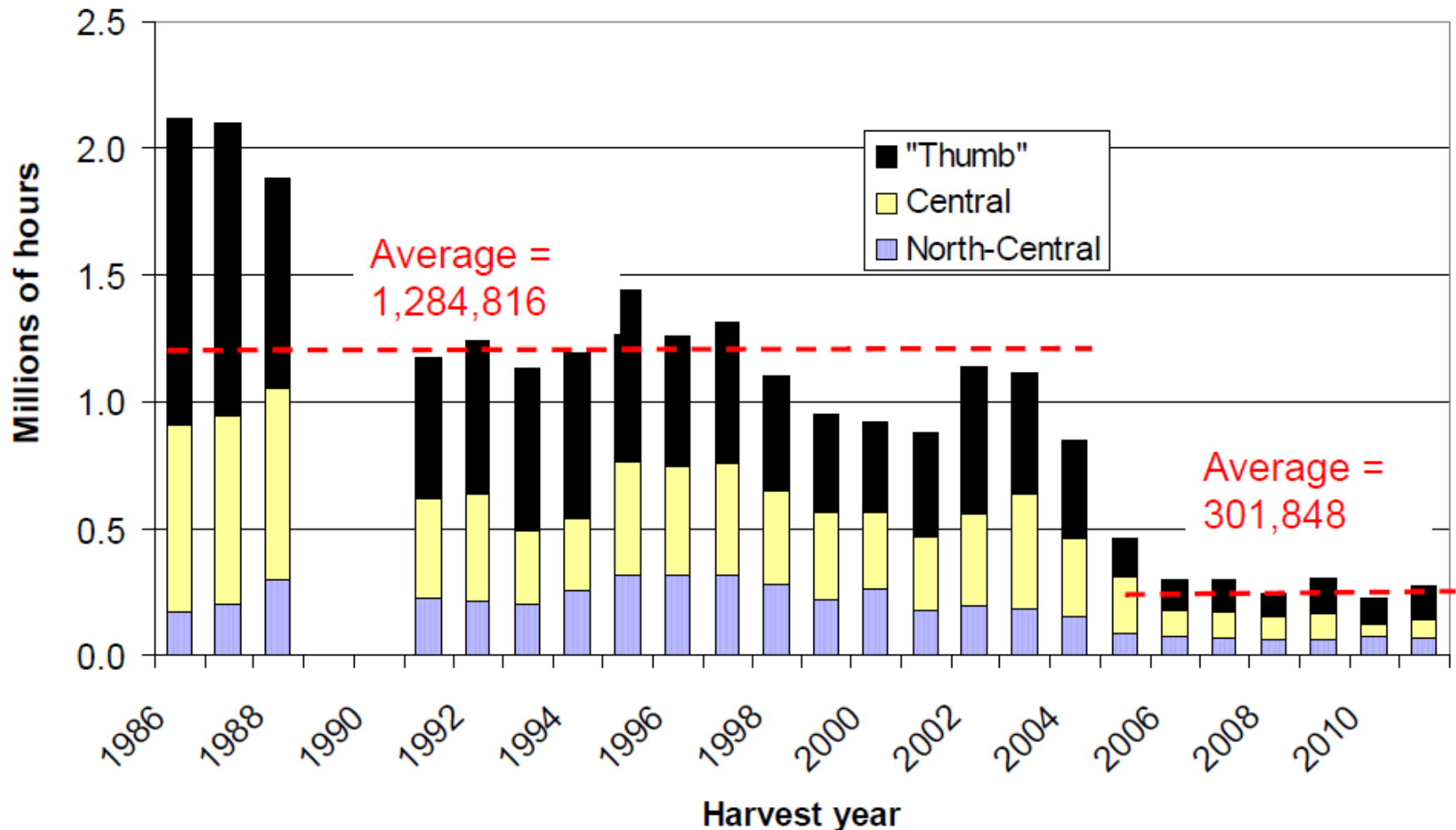
Current
Projects

Less Prey Fish in Lake Huron



Less Fishing Activity

Trends in fishing hours, 10 Main Basin Index Ports,
Lake Huron



Native Fish are Doing Well!



Fish of the new Lake Huron Ecosystem

Offshore	Nearshore	Pier, Shore, Creek
Walleye* ↑	Smallmouth bass ↑	Smallmouth bass (spring) ↑
Lake trout ↑	Northern pike*	Yellow perch
Lake whitefish	Freshwater drum*	Pumpkinseed & Bluegill ↑
Lake herring (Cisco)	Emerald shiner	Channel catfish
Burbot	Channel catfish*	Common carp* ▲
Atlantic salmon ↑ ▲	Yellow perch	White sucker (spring, creeks)
Steelhead ↑ ▲	Walleye* ↑	Lake whitefish (fall)
Chinook salmon ↓ ▲		Rainbow smelt (spring, creeks) ▲
Coho salmon ↓ ▲		Steelhead (fall, spring) ▲
Brown trout ↓ ▲		

▲ Non-native species, * Abundant in Saginaw Bay, ↑ Increasing in numbers, ↓ Small populations





Changes in Lake Huron

- Re-organized food web, in part due to mussels. Less salmon and perch, more walleye, lake trout and bass.
- Declines in charter fishing.
- Less shoreline fishing, more walleye fishing, especially in Saginaw Bay.

Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects



Challenges

- Preferred fish (salmon) have declined
- Poor public perception of fishery
- Changing youth culture, less interest in fishing and hunting
- Many fishing businesses, charters, have left or closed
- Limited expertise for targeting the new near shore fishery
- Fishing and tourism communities work separately.

Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects



Priority Strategies

- **Promote local fishing opportunities** through seminars about targeted fishing techniques, tournaments, festivals and informational materials.
- **Expand community involvement** in environmental issues.

Options:

- Charter fishing
- Sport Fishing
- Fishing tournaments
- Commercial fishing
- Community involvement

Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects



Charter Fishing

- Friendly marinas with fish cleaning stations
- Partnerships with restaurants – hook to cook
- Diversify charters
 - Sightseeing, diving
- Guided fishing
 - Kayak fishing
 - Wading for bass or carp



Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

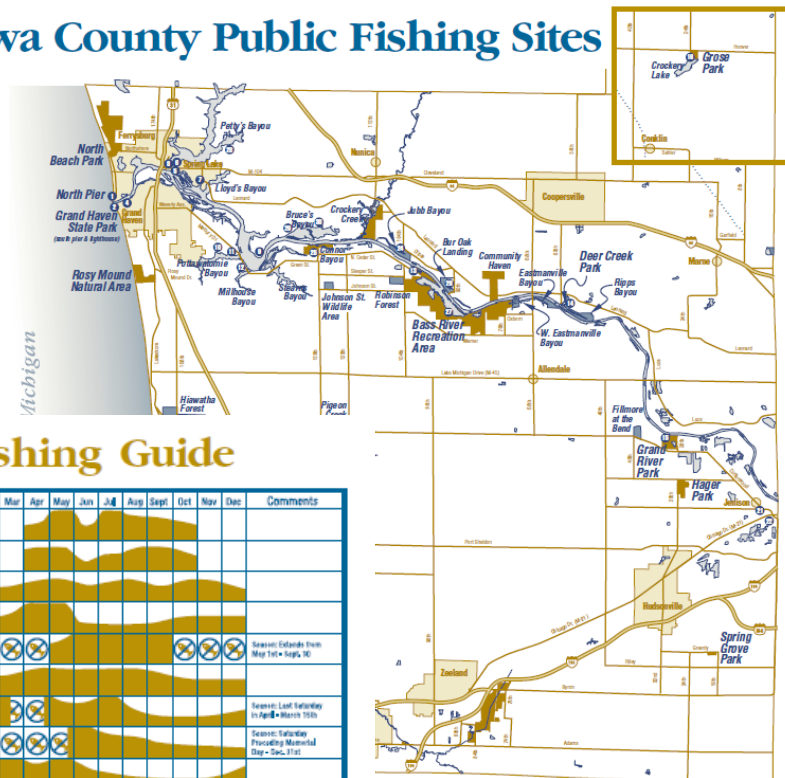
Current
Projects



Sport Fishing

- More information about fishing opportunities online, in visitor centers
- Youth events
- Workshops to build expertise
- Kayak fishing
- Bass fishing

Ottawa County Public Fishing Sites



Fishing Guide

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Comments
Chinook Salmon													
Coho Salmon													
Steelhead Trout													
Brown Trout													
Lake Trout	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	Season: February thru May 1st - Sept. 30
Yellow Perch													
Walleye													Season: Last Saturday in April - March 15th
Large-mouth Bass	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	Season: February - Preceding Memorial Day - Dec. 31st
Panfish													
Northern Pike													Season: Last Saturday in April - March 15th
Catfish													
Whitefish													
Smelt													

Excellent
 Very Good
 Good
 Fair
 Poor
 ⊗ Closed Season

• Always consult the Department of Natural Resources Fishing Guide for current regulations including seasons, size and creel limits. The guide is available free at stores selling fishing licenses. Check with bait shops for the most current fishing information.

access to Millhouse fish, bass and pike.
 Pier fishing on Lake Michigan for perch, steelhead and salmon. Approximately 1/3-mile walk to pier from parking area (Lakeshore Drive to Crosswell Street, west to Olive Shores, turn south and follow sign to pier access parking).
 One mile of Grand River shoreline at rustic site with fishing for all types of river species (Leonard Road to 104th Avenue south to access point on Oriole Drive).

Status and Trends

Priorities and Barriers

Options

Tools and Resources

Current Projects



Fishing Tournaments

- Connect tournaments and festivals
- Create a circuit of tournaments
- Support high school or college teams
- Diversify events
 - Youth categories
 - Biodiversity competition



Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects



Commercial Fishing

- Opportunity to expand commercial fishing to outer Thumb (Harbor Beach, Port Sanilac)
- Promote fishing: cultural heritage, tourist attraction and local food



Status and
Trends

Priorities
and Barriers

Options

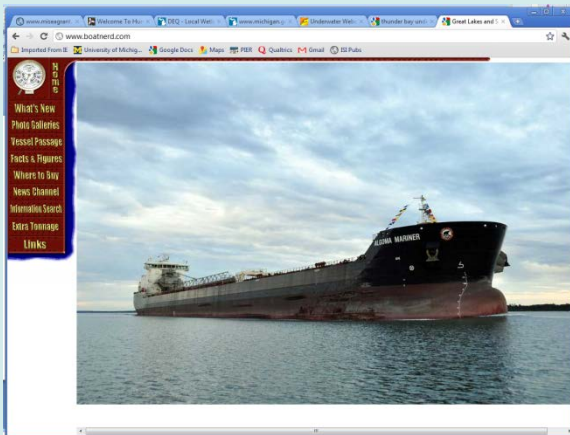
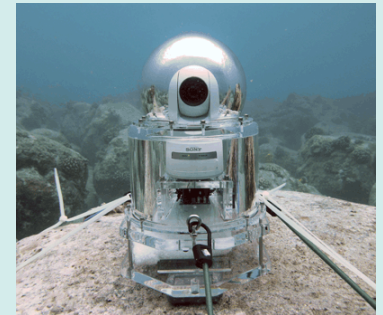
Tools and
Resources

Current
Projects



Community Involvement

- Youth stewardship projects (ask Sea Grant)
- Underwater cameras at marinas (ask Kathy)
- Barge tracking (ask Chester)



Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects



Discussion

- **Promote local fishing opportunities** through seminars about targeted fishing techniques, tournaments, festivals and informational materials.
- **Expand community involvement** in environmental issues.

Options:

- Charter fishing
- Sport fishing
- Fishing tournaments
- Commercial fishing
- Community involvement

Status and
Trends

Priorities
and Barriers

Options

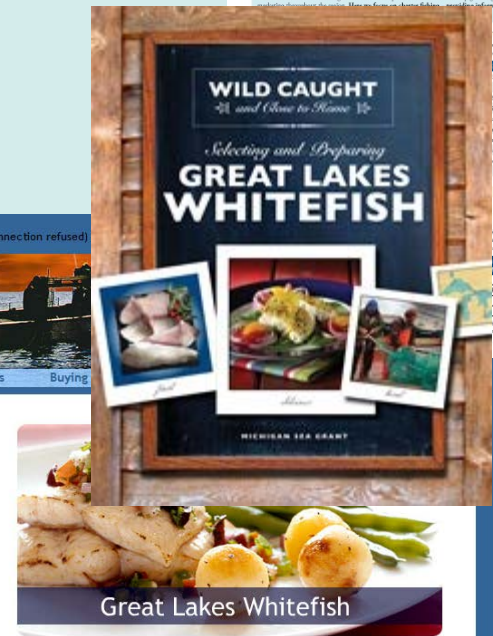
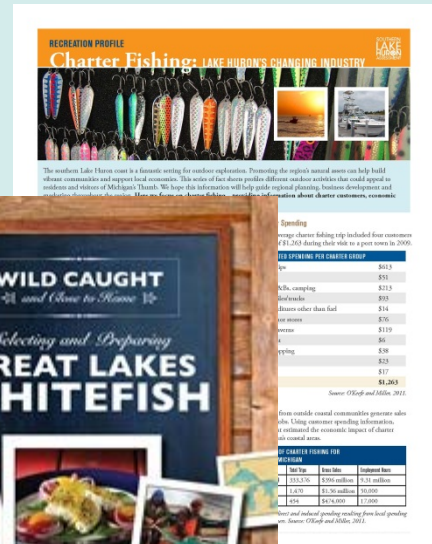
Tools and
Resources

Current
Projects



Tools and Resources

- Fact sheet – Changing Fishery of Lake Huron
- Recreation profiles:
 - Charter fishing
 - Tournament fishing
- Whitefish cookbook, websites
- Examples
 - Tournament Trail
 - Fish Point Lodge
 - Leland Fishtown



Spending
average charter fishing trip included four customers
\$13,563 during their stay in a year from 2000.

LOS LEIPATING FOR CHARTER FISHING	
trip	\$6123
fuel	\$95
lunch, camping	\$213
boat rental	\$10
license other than fuel	\$14
ice cream	\$76
snacks	\$119
beer	\$6
drinking	\$58
	\$23
	\$17
	\$2,263

Source: O'Keefe and Miller, 2003.

from outside coastal communities generate value. Using consumer spending information, a estimated the economic impact of charter fishing on coastal areas.

LOS LEIPATING FOR CHARTER FISHING		
Year	Area	Spending
2000	100 million	\$1.5 million
2001	100 million	\$1.5 million
2002	100 million	\$1.5 million
2003	100 million	\$1.5 million
2004	100 million	\$1.5 million
2005	100 million	\$1.5 million
2006	100 million	\$1.5 million
2007	100 million	\$1.5 million
2008	100 million	\$1.5 million
2009	100 million	\$1.5 million
2010	100 million	\$1.5 million
2011	100 million	\$1.5 million
2012	100 million	\$1.5 million
2013	100 million	\$1.5 million
2014	100 million	\$1.5 million
2015	100 million	\$1.5 million
2016	100 million	\$1.5 million
2017	100 million	\$1.5 million
2018	100 million	\$1.5 million
2019	100 million	\$1.5 million
2020	100 million	\$1.5 million
2021	100 million	\$1.5 million
2022	100 million	\$1.5 million
2023	100 million	\$1.5 million
2024	100 million	\$1.5 million
2025	100 million	\$1.5 million
2026	100 million	\$1.5 million
2027	100 million	\$1.5 million
2028	100 million	\$1.5 million
2029	100 million	\$1.5 million
2030	100 million	\$1.5 million

Source: O'Keefe and Miller, 2003.

Status and Trends

Priorities and Barriers

Options

Tools and Resources

Current Projects



Current Projects

- Bay Port Fish Company - Forrest Williams
- Blue Water Sportfishing Association - Judy Ogden



Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

Priority Strategies – Protection, Access, Participation



2) Coastal Lands

- **Conserve a network of shoreline, riparian and wetland areas for water quality, public access and recreation.** Purchase public land for recreation and protect natural resources from further development; expand green infrastructure.
- **Expand community involvement** in environmental issues – promote local field trips, onsite underwater and freighter cameras, service projects for schools, and volunteer restoration and monitoring programs.

Status and
Trends

Goals and
Barriers

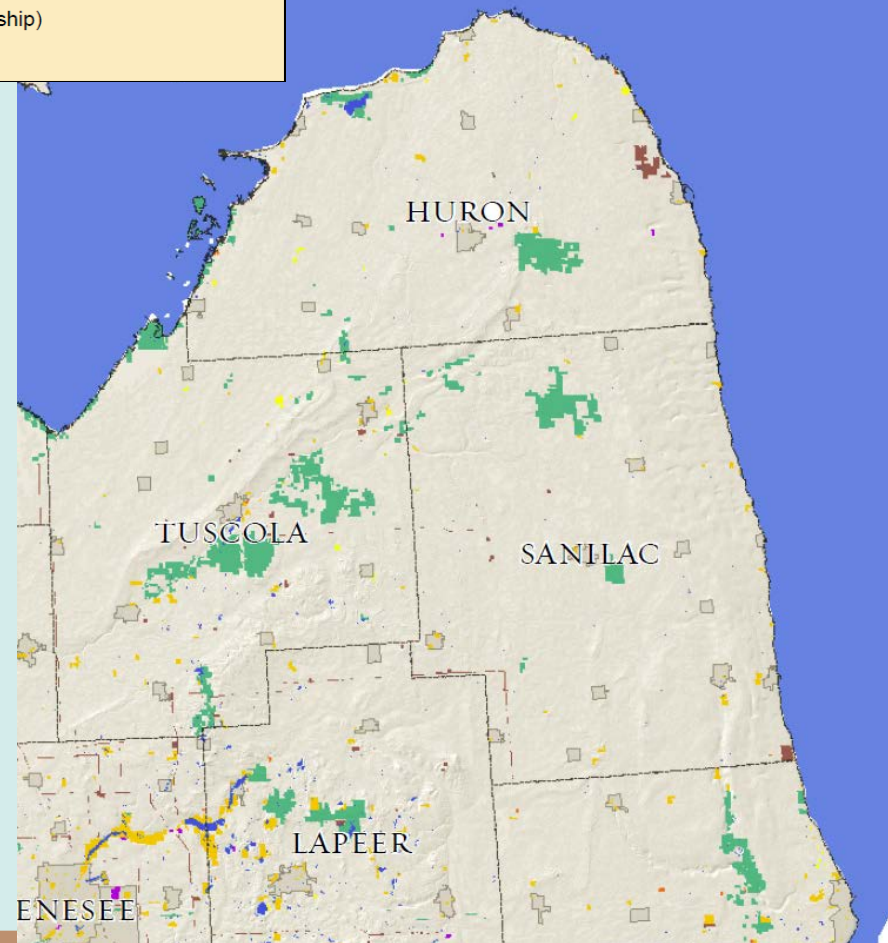
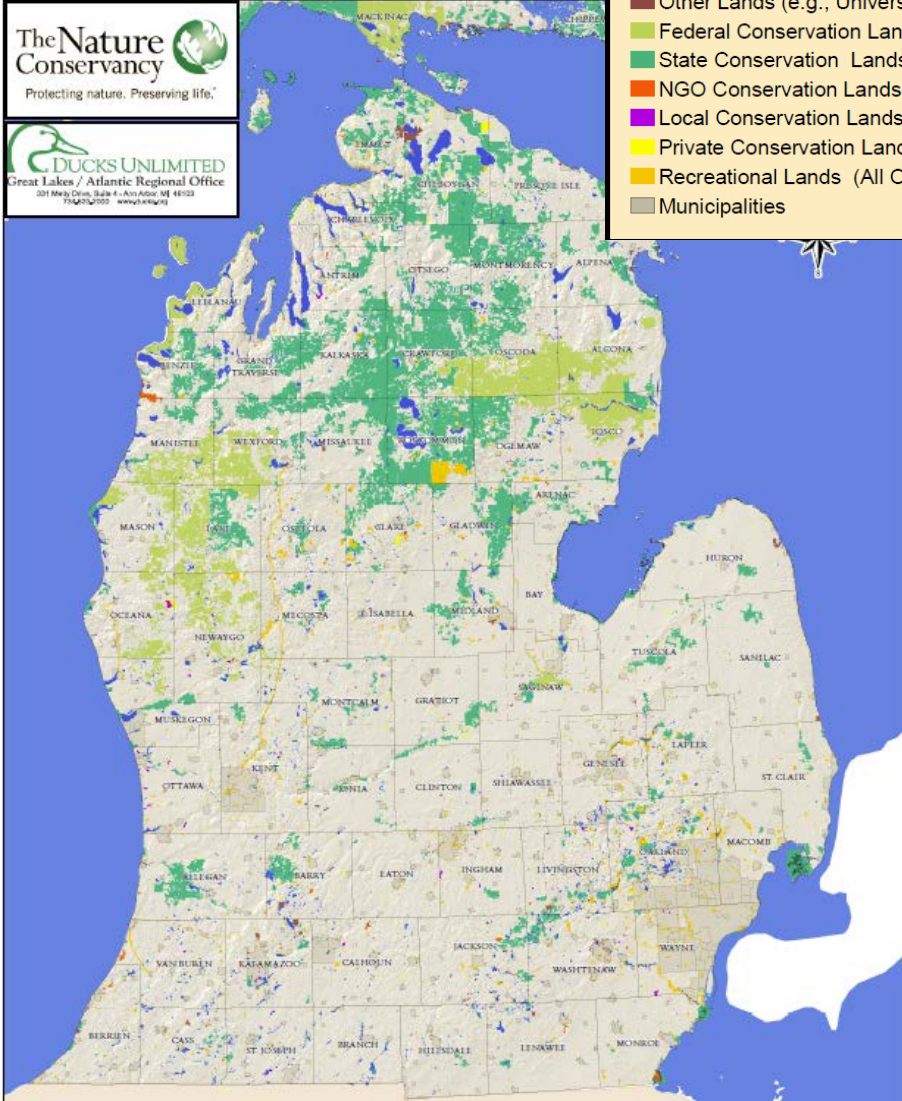
Options

Tools and
Resources

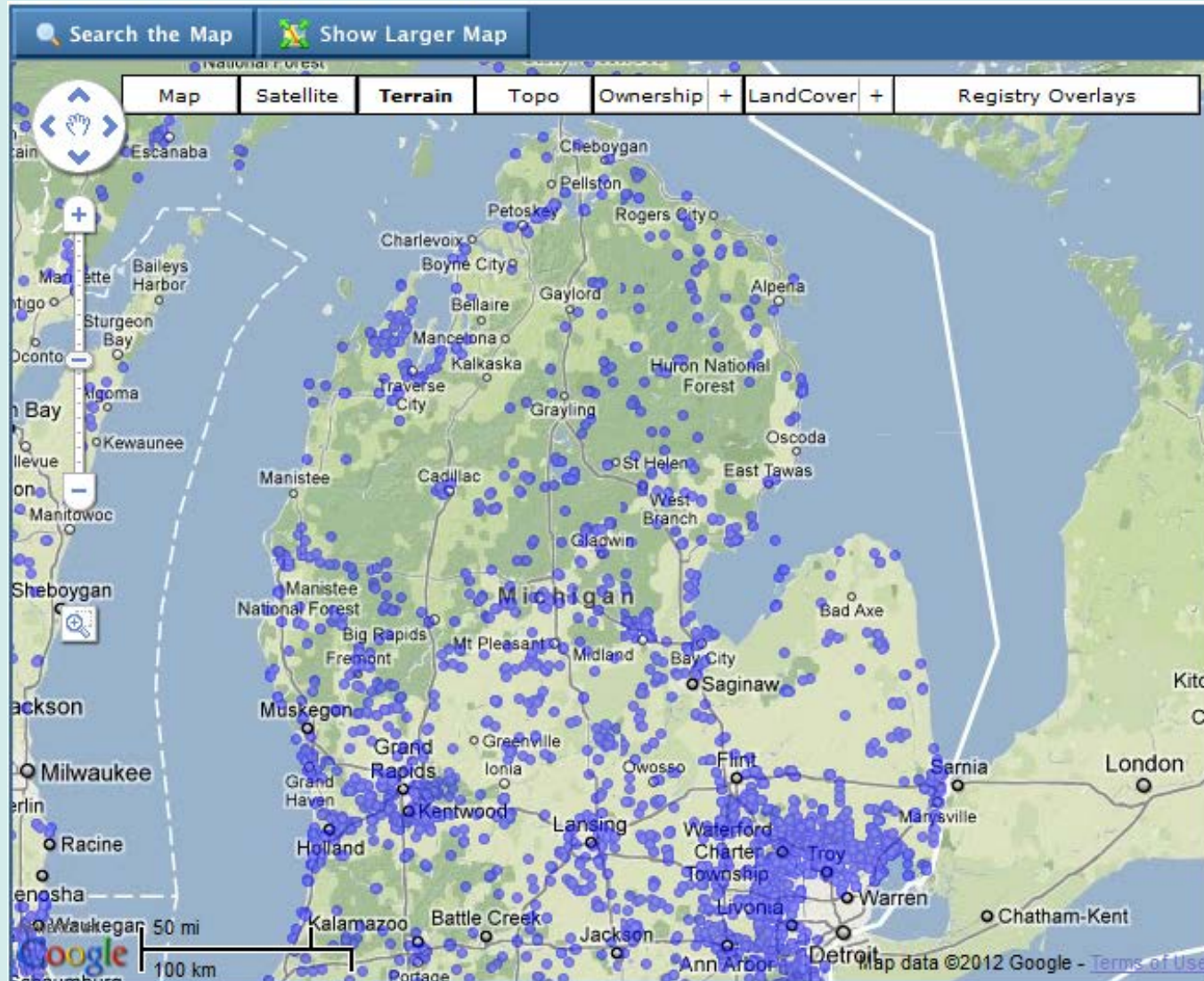
Current
Projects

A scenic view of a sandy beach with green dunes in the foreground and a blue lake in the background. The dunes are covered in tall grass and some small shrubs. The beach is a mix of sand and small rocks. The lake is a deep blue color, and the sky is a clear, light blue.

- Other Lands (e.g., University Holdings/Arboretums/Utilities)
- Federal Conservation Lands (USFS, USFW, NPS, NRCS)
- State Conservation Lands (MDNR, MDEQ, MDOT)
- NGO Conservation Lands
- Local Conservation Lands (County, Township, Municipal)
- Private Conservation Lands
- Recreational Lands (All Ownership)
- Municipalities



National Conservation Easement Database (NCED)





Observations

- Relatively little public land
- Relatively few development restrictions on private land (easements)
- Coastline includes 49 public beach access sites and 39 private beaches.
 - 57% of beaches are public in Thumb; 72% are public statewide

Status and
Trends

Goals and
Barriers

Options

Tools and
Resources

Current
Projects

Lots to Preserve and Promote



- Unique habitats
 - Beach ridge and swale habitat
 - Tallest dunes on Lake Huron
 - Ravines and stream mouths
 - Intact forest
 - Streams and drainage corridors
- Bird migration stop over points
 - Raptors, songbirds, waterfowl
- Extensive wetlands
- Green space and access for recreation
 - kayaking, birding trail, hiking, fishing, biking routes, beach access, heritage route



Status and
Trends

Goals and
Barriers

Options

Tools and
Resources

Current
Projects

Coastal Access



Coastal Access Points



- Park or harbor, at least every 7 miles.
Residential in between. How long to travel between access points?
 - Drive: 8-9 min (50 mph)
 - Bike: 28-42 min (10-15 mph)
 - Run: 50-70 min (6-8 mph)
 - Kayak: 105-210 min (2-4 mph)



Status and
Trends

Goals and
Barriers

Options

Tools and
Resources

Current
Projects

What is in between access points?



Points of Interest

- Roadside Park
- Michigan Historic Marker
- ◆ Youth Camp
- Local Recreation Area
- Populated Places
- ▲ Campground
- 🚤 Launch and Landing
- 🚻 Restroom
- ⚓ Harbor

Land Cover

- State Park or Game Area
- Local Park
- Private Open Space
- Forest Land
- Wind Farm
- Wetlands
- Ponds, Rivers and Lakes
- City or Village
- County Boundary



Wagner Park
▲ 🚤 🚻

Wooden Acres Camp

MDOT Roadside Park
 White Rock City
🚤 🚻

Forestville

Sanilac County Park
▲ 🚻

Challenges



- Small land conservancies, little information about protection options.
- Desire to limit foot or bike traffic near property.
- Farm land prices and productivity is up, eager to use all land right up to the edge of drains and creeks.
- Much of the coast is privately owned – small residential lots, homeowner associations.
- Relatively little online about recreation and nature in the Thumb.

Status and
Trends

Goals and
Barriers

Options

Tools and
Resources

Current
Projects

Options for Land Protection



- Conservation Easements
 - Maintain private ownership, restrict future development
 - Wide range of specifications possible
 - Tax incentives
 - Sell development rights to state
 - A good option for residential, farmland, municipal land, camps homeowner associations
- Land donations
- Land purchase
- Land banks
- Regulations for wetlands, drainage corridors, bottomlands
- Town or county ordinances

Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

Land Conservancies



- Legal advice for protection
- Hold or enforce easements
- Care for land as sanctuaries
- Education



michigan nature association
protecting michigan's natural heritage since 1952



Status and
Trends

Priorities
and Barriers

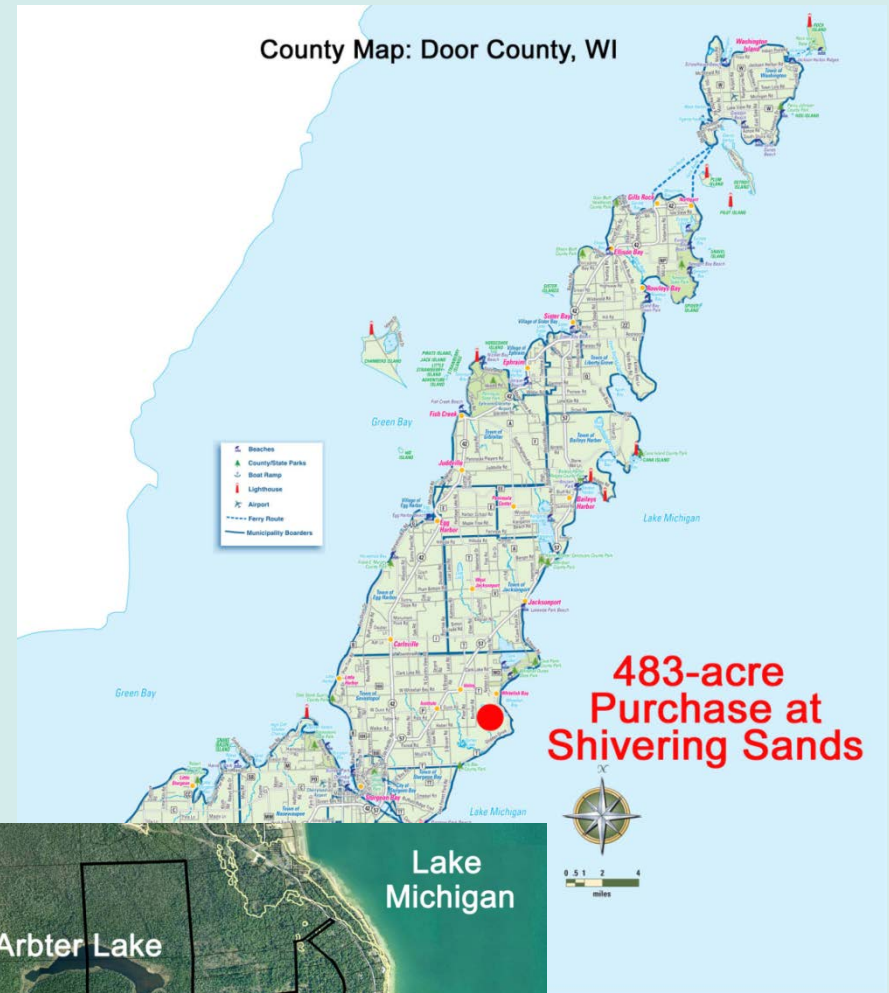
Options

Tools and
Resources

Current
Projects

Recent Land Purchase - WI

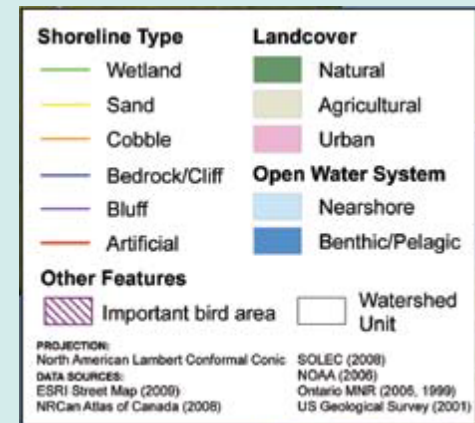
- Public access was one of the key goals for Dick Baudhuin in deciding to sell his portion to the land trust.
- The state Stewardship land conservation program contributed \$617,500
- The U.S. Fish and Wildlife Service paid the other half.
- The final price was based on an appraisal.
- The land trust intends to transfer ownership to state DNR
- Land trust will establish and maintain hiking trails and remove invasive, nonnative plants.



Prioritizing Conservation



- High biodiversity
- Protects water quality – wetland, riparian
- Migratory routes
- Recreational access
- Connected natural areas
- In danger of development



Status and
Trends

Priorities
and Barriers

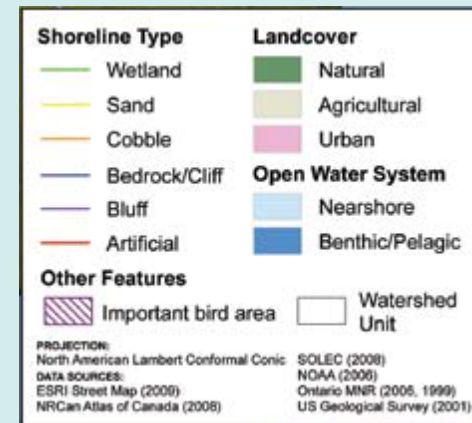
Options

Tools and
Resources

Current
Projects

Mapping Resources

- EMCOG – Saginaw Bay Coastal Resource Guide
- Conservation and Recreation Land Database
- NOAA – Habitat planner
- Lake Huron Biodiversity Conservation Strategy
- Rapid assessments
 - Citizens, Thumb Land Conservancy
- Sea Grant is doing preliminary work this summer to prioritize conservation areas



Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

Tactical, Renegade, Non-traditional Options

- Special agreements with camps – seasonal access, off season programs
- Public right of way added to private land
- Add a picnic table to private land or business property
- “Bikers welcome” signs
- Utility line corridors, old rail road tracks
- Block parties, street fairs



Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

Promote Greater Use



- Under utilized access points
 - Road ends
 - Road – stream crossings
 - Below the ordinary high water mark
 - State Game and Wildlife Areas
 - Sanctuaries or land with easements
- More information about recreational access
 - Birding trail
 - Kayaking app
 - Etc. etc.

“I want an outdoor recreation route!”

Status and
Trends

Priorities
and Barriers

Options

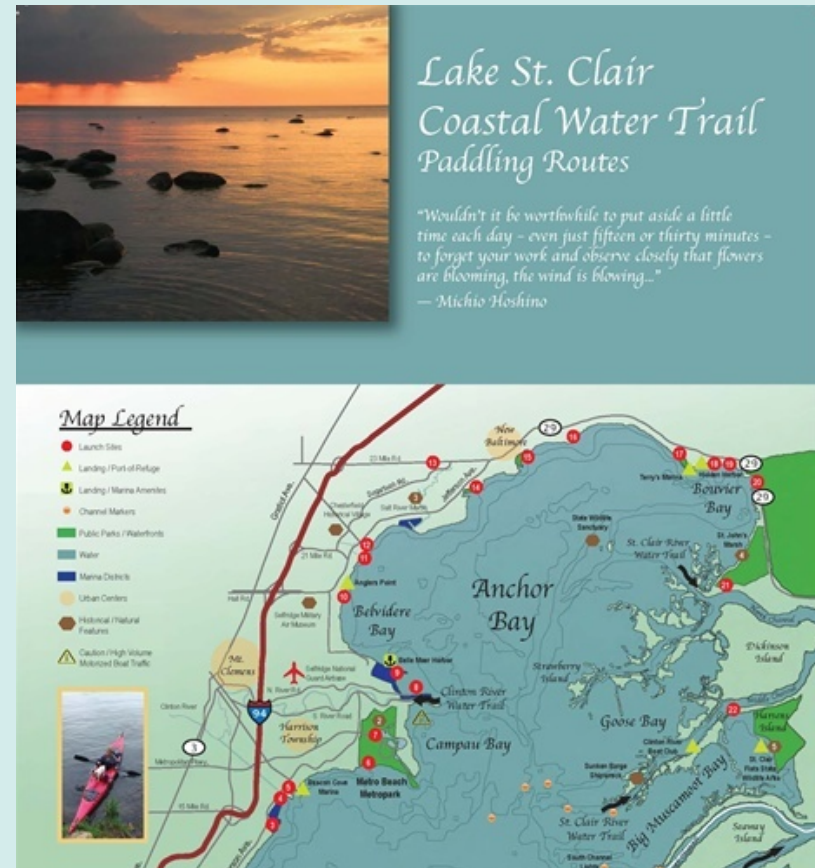
Tools and
Resources

Current
Projects

Outreach Resources



- EMCOG
- Michigan Sea Grant
- MI Great Bay
- Thumb Area Tourism Council
- Bluewater CVB
- Combine forces!
 - Birding trail
 - Art trail
 - Heritage route
 - Water trail
 - Bike Trail



Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

Community Involvement



- Youth stewardship projects
 - Environmental
 - Historical preservation
 - Tourism and Rec development
- Volunteer monitoring
- Field trips – kids and adults
- Homeowner education



Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

Community Involvement



- Youth stewardship - ask Sea Grant
- Volunteer monitoring - talk to MiCorp
- Homeowner education – partner with Land conservancies



MiCorps: Michigan Clean Water Corps

Port Huron
Michigan

Blue Water Audubon Society



GREAT LAKES
Stewardship Initiative

Expanding classrooms. Strengthening communities.



Huron County Nature Center

Preserve
Enlighten
Share



Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

New Tools and Resources from this Project



- Mini-report: Tools for Land Conservation
- Grant summary
- Coastal management proposal – birding and fishing access guide
- Preliminary work on prioritization process, gap analysis and site assessments (summer)

Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

Discussion



- **Conserve a network of shoreline, riparian and wetland areas for water quality, public access and recreation.** Purchase public land for recreation and protect natural resources from further development; expand green infrastructure.
- **Expand community involvement in environmental issues** – promote local field trips, onsite underwater and freighter cameras, service projects for schools, and volunteer restoration and monitoring programs.

Options:

- Easements, purchase or regulations
- Promote under used public areas
- Create public access on private land
- Promote recreation opportunities
- Youth stewardship projects, homeowner education, volunteer monitoring

Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

Current Project Highlight



- State Park Strategic Planning Efforts – Kim Kaufmann



Status and
Trends

Priorities
and Barriers

Options

Tools and
Resources

Current
Projects

Tip of the Thumb Heritage Water Trail

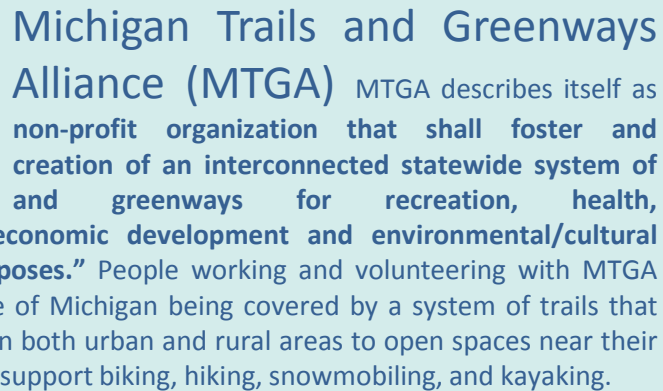
[illegible]

Image found at: <http://thumbtrails.com/maps.html>

Image found at: <http://sleepingbeartrail.org/>

Sleeping Bear Heritage Trail: This recently approved trail serves as an excellent example of the possibilities available for multi-use land trails and funding in Michigan. Upon its completion, it will be 27 miles along and for most of its length, run parallel to existing highways and roads, connecting major park attractions and local communities. The total project is expected to cost around \$10 million, but it has already received \$6 million from public sources and nearly \$1 million from private donors.

Land Conservancies

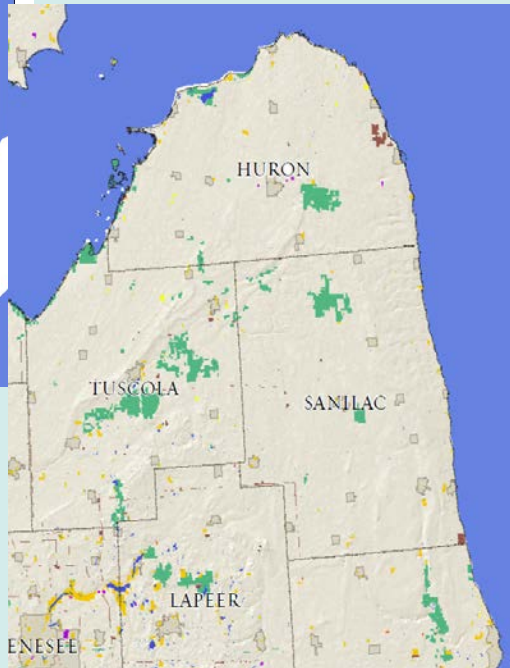
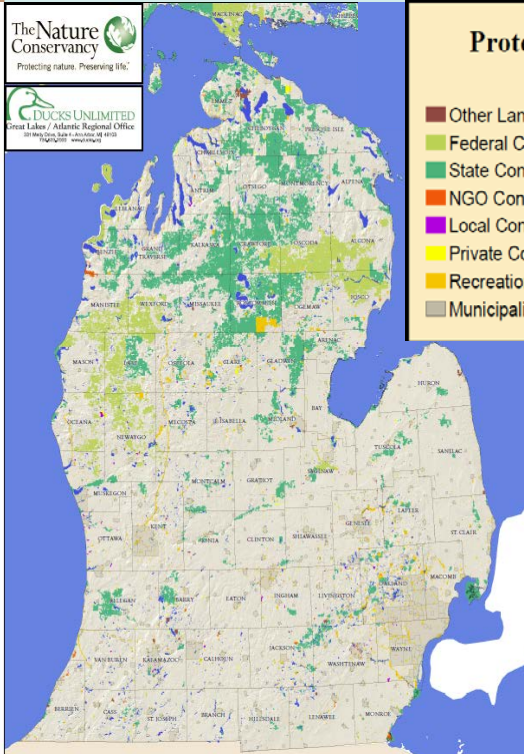


Conservation and Recreational Lands of Michigan's Lower Peninsula
CARL Database for Michigan - August 2007



Protected and Recreational Lands in Michigan - 2007

- Other Lands (e.g., University Holdings/Arboretums/Utilities)
- Federal Conservation Lands (USFS, USFW, NPS, NRCS)
- State Conservation Lands (MDNR, MDEQ, MDOT)
- NGO Conservation Lands
- Local Conservation Lands (County, Township, Municipal)
- Private Conservation Lands
- Recreational Lands (All Ownership)
- Municipalities



Conservancies can play an important role in the preservation of land in Michigan. While much of Northern Michigan is covered by federally and state-owned preservation areas, much of the Thumb is unprotected.

Conservancies provide technical and legal resources for private landowners seeking to permanently conserve their land. Many conservancies provide public education programs, with the belief that spending more time in nature builds appreciation, respect, and stewardship.

About to celebrate its 40th anniversary, Little Traverse Conservancy is one of the oldest conservancy agencies in Michigan. While not specifically working in the Lake Huron area, this large organization has a number of resources that are useful for other conservancies and the general public. Their website includes an interactive map (pictured below) locating their 164 nature preserves.

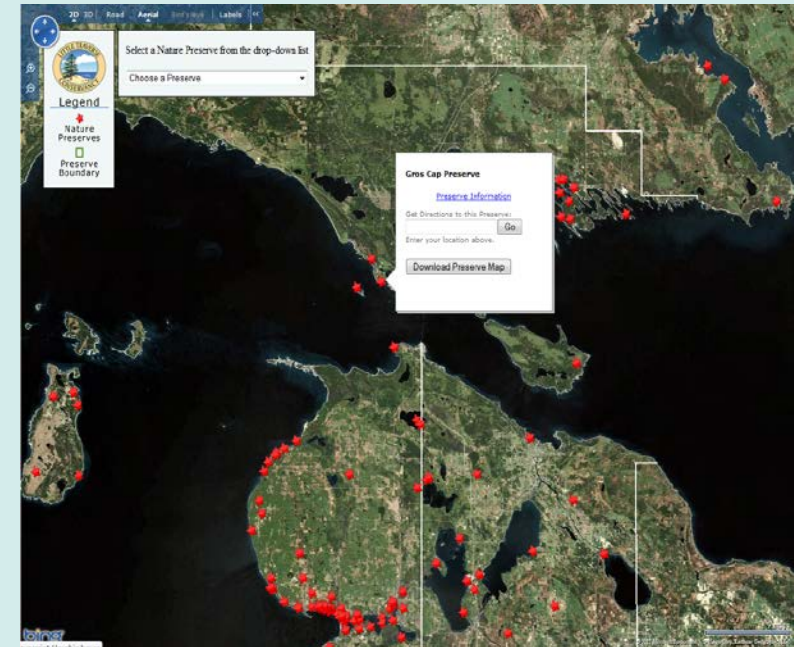
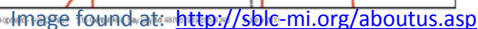
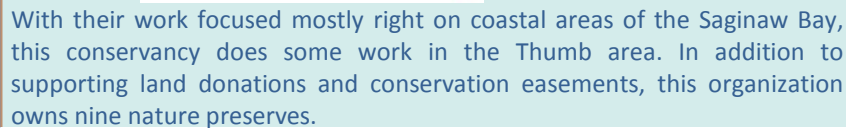


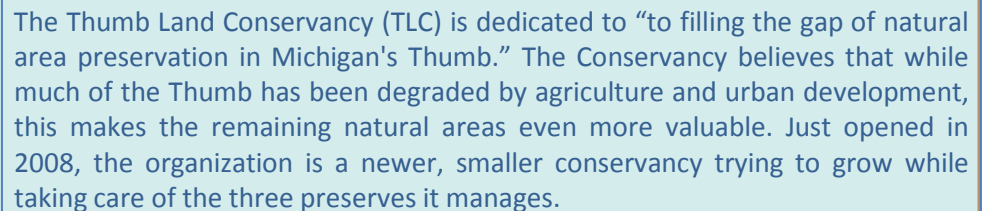
Image found at: <http://landtrust.org/NaturePreserves/NewWebMap/preservemap.htm>

Little Traverse Conservancy also focuses much of its effort on education, with specific programs for preschoolers, high school groups, adults and families.

Images adapted from:
http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/michigan/howweework/carl_lp.pdf



Conservation Easements: Conservation easements create a legally enforceable land preservation agreement between a landowner and a government agency or a qualified land protection organization (e.g., land trust or conservancy). The land remains in the hands of the original property owner, but development and certain activities are restricted. The specific restrictions created by an easement can vary widely. The Saginaw Basin Land Conservancy provides a detailed FAQ section on their website (<http://sbllc-mi.org/landprotectiontools.asp>) on conservation easements.



- **Great Lakes Bioregional Land Conservancy** (Lapeer and nearby counties)
- **Southeast Michigan Land Conservancy** (Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw and Wayne counties)
- **The Conservation Fund** (National organization that has done work in the area)
- **Little Forks Conservancy** (Located in Midland, its work is focused on the Tittabawassee River Watershed, which feeds into the Saginaw River.)
- **North Oakland Headwaters Conservancy** (Focuses mostly in NW Oakland County)