

*Great Lakes recreational
boating's economic punch*



Executive summary

Boating on the Great Lakes is big business. According to U.S. Coast Guard data, there are 4.3 million boats registered in the eight Great Lakes states. For the first time, this report documents the real economic impact of recreational boating in the Great Lakes region.

In 1999, Congress authorized a study of the economic breadth of recreational boating in the Great Lakes states. The purpose of the study was to identify the economic benefits of federally authorized recreational harbors for comparison to the cost of maintaining them, which primarily involves dredging. Congress directed the U.S. Army Corps of Engineers, which partnered with the Great Lakes Commission, to carry out the study. Michigan State University's Recreational Marine Research Center was brought in to help with the research.

The study showed that the Great Lakes states are a recreational boating powerhouse, with nearly one-third of all registered boats in the United States. Spending on boats and boating activities in the Great Lakes states totaled nearly \$16 billion in 2003, directly supporting 107,000 jobs. With secondary effects figured in, that number grew to 244,000 jobs, with economic impacts of \$19 billion in sales, \$6.4 billion in personal income and, \$9.2 billion in value added. Beneficiaries of this activity included manufacturers, retailers, marinas, restaurants, lodging accommodations, charter operators and other businesses largely concentrated near docking facilities. Recreational harbors also support other functions such as hosting Coast Guard stations and serving as harbors of refuge for vessels in distress. In addition, recreational harbors are a key element in restoring former waterfront industrial areas, providing a key anchor for new, upscale developments along the Great Lakes.

However, operations at many Great Lakes recreational harbors have been jeopardized by sediment accumulations and low water levels, resulting in blocked entrance channels and vessels running aground within the harbor itself. Compared to the economic benefits they provide, the cost of maintenance dredging for the harbors would be relatively minor. The U.S. Army Corps of Engineers estimates that the dredging needs of all recreational harbors and channels in the Great Lakes could be adequately addressed for an investment of \$5 million per year. Case studies of five recreation harbors on each of the Great Lakes examine dredging needs in more detail.

The Great Lakes states are a recreational boating powerhouse, with nearly one-third of all registered boats in the United States.

Introduction

Of the 4.3 million boats registered in the eight Great Lakes states, an estimated 911,000 operate upon the Great Lakes themselves. But what these boats and their owners generate in direct and indirect economic impacts – the number of businesses and jobs they support and the secondary effects that ripple through local economies – has never been fully understood to date.

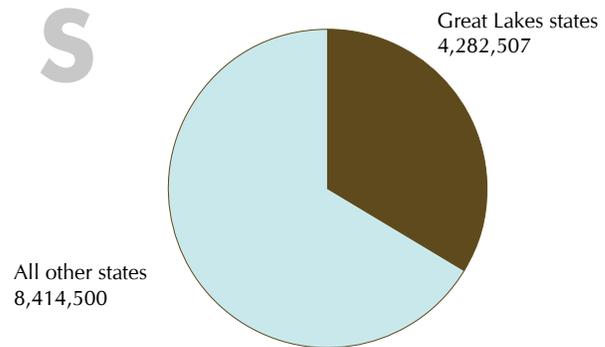
Demand for economic data on recreational boating is growing. It is critical to such functions as planning and investment in boating facilities, maintaining navigational access to recreational harbors on the Great Lakes, and developing federal, state and local policy relating to recreational boating.

In response to this need, Congress authorized a study of the economic breadth of recreational boating in the Great Lakes, in the Water Resources Development Act (WRDA) of 1999. One of three components of the John Glenn Great Lakes Basin Program, the project was intended to identify the economic benefits of federally authorized recreational harbors. The purpose was to compare these benefits with the cost of operating and maintaining shallow draft recreational harbors, which primarily involves dredging and is a federal responsibility under the Rivers and Harbors Act. However, the policies of recent administrations have gradually eliminated funding for this purpose from the U.S. Army Corps of Engineers' (the Corps) Great Lakes budget.

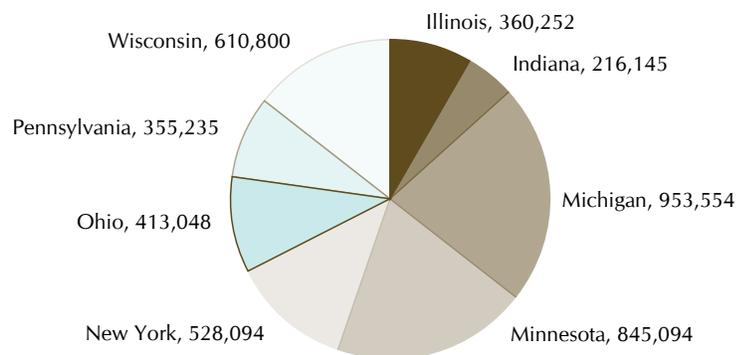
Following the Congressional directive, the Corps partnered with the Great Lakes Commission to scope out a comprehensive analysis of recreational boating's economic benefits to the region. The study addressed both the direct impacts generated by boater spending and the secondary benefits derived through such activities as watercraft manufacturing and sales, charter fishing and marina operations. As directed by Congress, the study uses as much existing data as available, but also generates a substantial body of new data, much of it produced by Michigan State University's Recreational Marine Research Center.

The study also characterizes additional public benefits of the 87 federally authorized shallow draft harbors in the Great Lakes basin, such as providing safety for boaters as harbors of refuge, hosting U.S. Coast Guard search and rescue stations, serving as subsistence harbors that isolated island communities rely on for goods and services, hosting terminals for ferry operations and providing an anchor for revitalizing local waterfronts with housing, recreation and commercial development.

Registered boats in the United States, 2003



Registered boats by Great Lakes state, 2003



Source: U.S. Coast Guard



How many boats on the Great Lakes?

A true economic portrait of recreational boating in the Great Lakes begins with an accurate count of boats in the region. Boat registration and boat numbering by states, as mandated by the U.S. Coast Guard under the U.S. Motor Boat Safety Act, is the primary source of this information.

Great Lakes states' numbering and registration protocols differ, which complicate efforts to produce an accurate count. While the Coast Guard is required to count only mechanically propelled boats, some states register non-motorized vessels as well. There is also the potential for "double counting" which can occur when a boat registered in one state is re-registered in another, or is given dual classification on Coast Guard reports. However, our research confirms that this does not affect the overall accuracy of the data.

The Coast Guard's data for 2003, the year the data were collected for the study, indicated there were about 4.3 million registered boats in the eight Great Lakes states. Based on geographic distribution of registered boat owners (i.e. distance from the Great Lakes), it is estimated that more than 910,000 of these are used primarily on Great Lakes waters.

The Great Lakes states emerge in the study as a national recreational boating powerhouse. The 4.3 million registrations comprised a third of all numbered U.S. recreational vessels. Of these, nearly one quarter belonged to people residing in Great Lakes shoreline counties. Michigan, with its considerable Great Lakes coastline, led the region with nearly one million recreational boats, 42 percent of which belonged to residents of its coastal counties.

Wisconsin and Minnesota experienced the strongest growth in boater registrations during the period from 1999-2003, with 8.5 percent and 6.6 percent respectively. However, overall growth in registrations during that period was somewhat static, with only a 1.3 percent increase for the region as a whole, while three states (Indiana, Michigan and Illinois) experienced declining boat registrations.

The most prevalent size boat on the Great Lakes was between 16 and 20 feet in length, which covered about 28 percent of the Great Lakes' recreational fleet. The most popular type of boat was the 16 to 24-foot fiberglass runabout.

The 4.3 million registrations comprised a third of all numbered U.S. recreational vessels.

Total average annual economic impact (direct and secondary) of registered boats on state economies

	Sales \$ Millions	Jobs	Personal Income \$ Millions	Value Added \$ Millions
Trip Spending				
Illinois	\$1,195	14,644	\$408	\$501
Indiana	\$1,357	20,362	\$435	\$542
Michigan	\$2,362	34,064	\$796	\$975
Minnesota	\$2,325	33,201	\$765	\$946
New York	\$1,605	18,246	\$572	\$705
Ohio	\$1,166	16,645	\$382	\$467
Pennsylvania (Erie County only)	\$42	759	\$14	\$17
Wisconsin	\$1,540	24,470	\$500	\$616
Total Trip Spending	\$11,592	162,391	\$3,873	\$4,769
Annual Craft Spending				
Illinois	\$763	7,762	\$270	\$462
Indiana	\$846	10,075	\$284	\$494
Michigan	\$1,543	17,265	\$546	\$937
Minnesota	\$1,384	15,859	\$481	\$829
New York	\$1,144	10,655	\$416	\$713
Ohio	\$793	9,503	\$274	\$473
Pennsylvania (Erie County only)	\$29	436	\$10	\$17
Wisconsin	\$953	12,170	\$325	\$560
Total Craft Spending	\$7,455	83,725	\$2,605	\$4,486
Trip and Craft Spending				
Illinois	\$1,958	22,407	\$678	\$963
Indiana	\$2,203	30,437	\$710	\$1,036
Michigan	\$3,905	51,329	\$1,342	\$1,913
Minnesota	\$3,709	49,060	\$1,247	\$1,775
New York	\$2,749	28,901	\$987	\$1,418
Ohio	\$1,959	26,148	\$656	\$939
Pennsylvania (Erie County only)	\$71	1,195	\$24	\$34
Wisconsin	\$2,493	36,640	\$825	\$1,177
Total Spending (direct and secondary)	\$19,047	246,117	\$6,479	\$9,255

Boater spending: The real economic engine

At the core of the study was the impact of what Great Lakes boaters spend - both “trip spending,” which is what they spend on each trip they take and “craft spending,” what they spend to maintain their boats over the year - and the secondary impacts of this spending. While the data had been defined on state-specific basis for some states in recent years, an accurate Great Lakes basin-wide picture is available for the first time in this report.

Using newly developed online technologies and techniques, data collected in 2004 provide a snapshot of annual boater spending levels and patterns unprecedented in its scope and detail. This report presents estimated boating days, craft spending and trip spending for different size boats from on-line assessments conducted by Michigan State University’s Recreational Marine Research Center’s (RMRC) National Boater Panel.

According to the RMRC, the Great Lakes boat owners spend an average of \$3,600 per year on their boats. This includes \$1,400 on craft-related expenses (e.g., equipment, repairs, insurance, slip fees) and \$2,200 on trip-related expenses (e.g., gas and oil, food and refreshments, onshore entertainment, lodging) spread out over an average of 23 boating days per season. These averages are heavily weighted toward the high percentage of mostly smaller watercraft. Owners of larger boats spend considerably more, up to \$20,000 per year for boats 41 feet and more.

Average spending per boat day on trips varies from \$76 for boats less than 16 feet in length to \$275 per day for boats larger than 40 feet. The greatest trip expenses are for boat fuel (22 percent), restaurants and bars (17 percent) and groceries (14 percent). The majority of annual craft expenses are for equipment (39 percent),



maintenance and repair (29 percent) and insurance (14 percent). Owners of registered watercraft in Great Lakes states spent \$9.9 billion on boating trips in 2003 and \$5.7 billion on craft expenses, for a whopping total of almost \$16 billion.

Comprehensive economic impacts of boater spending on the Great Lakes regional economy were estimated by applying the spending to an input-output (I-O) model of the eight-state regional economy. The model estimates direct and secondary economic impacts within the region in terms of sales, jobs, personal income and value added. Direct effects cover economic activity in businesses selling goods and services directly to boaters. Secondary effects include indirect effects on related industries and induced effects from household spending of income earned directly or indirectly from boaters.

Applying this model, it is estimated that the \$9.9 billion in boater trip spending has a direct economic impact on the region of \$6.8 billion in sales, \$2.5 billion in personal income, \$1.7 billion in value added, and 107,000 jobs. With secondary effects, the total impact of boater trip spending is 160,000 jobs and \$4.3 billion in personal income. Combining trip and craft-related spending, the total impact on the region’s economy is 244,000 jobs and \$7.2 billion in personal income.

Direct economic impact of registered boats on Great Lakes states’ economies include almost \$11.5 billion annually in sales, \$4 billion in personal income and \$6.4 billion in value added, for a total of over \$22 billion. With secondary impacts added, the total impact on Great Lakes states’ economies of registered recreational boats is over \$19 billion in sales, \$6.4 billion in personal income, \$9.2 billion in value added, and 246,117 jobs.

Boater impact is concentrated at Great Lakes marinas

Marinas serving Great Lakes boaters are key generators of economic benefits to the region. These facilities are where a good share of boater spending takes place, where many jobs are supported and the scene of much private and public investment.

There are an estimated quarter million marina slips in Great Lakes states. About half of these are located in Great Lakes counties. Of these 89 percent, are seasonal rental slips, giving a total of approximately 115,000 seasonal rental slips in Great Lakes county marinas, boatyards, condominium and “dockominium” marinas, and yacht clubs.

Based on previous Great Lakes marina studies and discussions with over 800 Great Lakes marina owners and operators, it was estimated that an average of 93 percent of the accessible seasonal slips in Great Lakes counties were occupied during the summer of 2004. That means that about 107,000 boats were kept at marinas in Great

Lakes counties during the boating season, the majority in Michigan and Ohio. Owners of these boats spent \$665 million on trip-related expenses and \$529 million on craft-related items. Boats kept at Great Lakes marinas account for about 30 percent of spending by boats using the Great Lakes.

The list of marinas in Great Lakes states was assembled from various sources, including a national list compiled by the Marine Operators Association; a list developed for a study of low water impacts on Lake Michigan marinas; a 2002 study of marinas and yacht clubs along Lake Ontario and the St. Lawrence River; and a Cornell University evaluation of 194 marinas and yacht clubs in New York. All marinas for which a telephone number could be identified were contacted to verify that they were in operation and to ascertain their total number of slips, the number of seasonal slips available and whether they also offered moorings.

Summary of average annual spending by registered boats in the Great Lakes region (\$ millions)

Spending Category	All Registered Boats in Great Lakes region	All Boats Using Great Lakes	All Boats at Great Lakes Marinas	% of Spending by Boats Using Great Lakes	% of Great Lakes Spending by Boats at Marinas
Trip Spending					
Lodging	\$1,031	\$223	\$56	22%	25%
Marina services	\$310	\$98	\$45	32%	46%
Restaurant	\$1,679	\$407	\$124	24%	30%
Groceries	\$1,392	\$324	\$90	23%	28%
Boat fuel	\$2,177	\$556	\$177	26%	32%
Auto fuel	\$1,181	\$240	\$38	20%	16%
Repair/maintenance	\$987	\$219	\$44	22%	20%
Marine supplies	\$655	\$157	\$42	24%	26%
Recreation/entertainment	\$278	\$73	\$23	26%	32%
Shopping	\$206	\$59	\$24	29%	41%
Trip Total	\$9,895	\$2,357	\$665	24%	28%
Craft Spending					
Slip	\$346	\$178	\$175	52%	98%
Yacht dues	\$117	\$40	\$22	34%	56%
Off season storage	\$167	\$53	\$30	32%	57%
Put in and haul out	\$216	\$56	\$22	26%	39%
Insurance	\$787	\$190	\$53	24%	28%
Repairs	\$1,676	\$398	\$112	24%	28%
Equipment	\$2,236	\$481	\$103	22%	21%
Taxes	\$187	\$46	\$12	24%	27%
Craft Total	\$5,731	\$1,441	\$529	25%	37%
Trip and Craft Spending					
Total	\$15,626	\$3,798	\$1,193	24%	31%

Sportfishing, with its strong ties to boating, is a major activity in the Great Lakes region. Studies indicate that about half of all fishing in the region is from a boat.

The Great Lakes region hosts a robust boat manufacturing and sales industry

This analysis of the economic benefits derived from Great Lakes recreational boating includes data on the region's resident watercraft manufacturing industry. Manufacturers of recreational boats and equipment can be found throughout the eight Great Lakes states, in large and small communities, involving large multinational corporations and small family-owned businesses.

As of 2004, there were 250 active recreational boat and equipment manufacturers in the eight Great Lakes states. Of these, 91 produced powerboats. These numbers were obtained from a U.S. Coast Guard database of all recreational boat manufacturers in, and importers to, the United States, verified through telephone calls to all 250 active manufacturers. A mail-delivered survey was sent to all 250 Great Lakes states manufacturers determined to be in business in 2004.

The National Marine Manufacturers Association (NMMA) provided current information on purchases of powerboats, trailers and accessories. In addition, information on 2003 boat sales was

obtained with the assistance of the NMMA for the 91 powerboat manufacturers headquartered in the Great Lakes states.

These 250 manufacturers produced an estimated 182,700 watercraft in 2003. An analysis of 2003 new boat registrations shows that 10 percent of the boats sold by Great Lakes powerboat manufacturers were registered/sold in the manufacturers' home state; 29 percent were registered/sold in other Great Lakes states; and 61 percent were sold outside the Great Lakes region. Therefore, while there is a significant economic benefit from the export of watercraft manufactured in this region, these manufacturers depend significantly on Great Lakes boaters and boating opportunities.

This study reveals that 44 percent of these manufacturers are small businesses with five or fewer employees, and 13 percent employ more than 100 employees. Based on a weighted analysis of the assessment results, it is conservatively estimated that watercraft manufacturers in the Great Lakes states employed 18,500 persons in 2003.

Types of boats produced by Great Lakes marine manufacturers*

Type of Boat Manufactured	Number of Great Lakes States Manufacturers	Percentage of all Great Lakes boat production
ATV/Hovercraft	3	1.2%
Canoes/Kayaks	47	18.8%
Houseboats	2	0.8%
Inboard/Outboards	47	18.8%
Inboards	18	7.2%
Outboards	58	23.2%
Personal Watercraft	3	1.2%
Pontoon Boats	39	15.6%
Sailboats	23	9.2%
Thrill craft (e.g. jetboats, raceboats)	6	2.4%
Miscellaneous (e.g. electric launches, inflatable boats, water toys.)	31	12.4%

* (N=250) Some manufacturers manufacture more than one type of boat so the percentages do not add up to 100



Charter boats, fishing contribute a significant economic impact

Sportfishing, with its strong ties to boating, is a major activity in the Great Lakes region. Studies indicate that about half of all fishing in the region is from a boat. According to the U.S. Fish and Wildlife Service, more than 11 million anglers (age 16 and older) fished both inland and Great Lakes waters in 1996. The region accounts for more than 36 percent of all U.S. anglers.

For non-boat owning anglers in the Great Lakes and for visitors to the region, charter-fishing operations provide a welcome service. For the local economies of Great Lakes coastal communities – including many served only by shallow-draft harbors – charter-fishing boats generate a significant economic impact. This impact has been studied extensively in recent years by the Great Lakes Sea Grant Network, led by Ohio Sea Grant, which coordinated a study of charter boat captains. The study provided information on the status, characteristics and economics of the charter fishing business. Out of an estimated total of 1,932 Great Lakes charter captains, 1,767 captains were surveyed, and 868 returned the assessment with usable data.

The M.S.U. Recreational Marine Research Center obtained data from Sea Grant and similar charter fishing studies, then applied tourism spending profile models to paint a picture of the basin-wide economic impact of the Great Lakes charter fishing industry.

It was estimated that charter fishing in the Great Lakes states produces in excess of 81,000 days/nights of group travel each year (i.e., one day/night = group travel for the entire charter party) to reach communities where charter boats are kept. About two-thirds are day trips. Average local spending on day trips is estimated to be \$197 per trip, including restaurants, takeout food and beverages, entertainment and shopping. On overnight trips, charter parties that stay in motels average \$449 of local spending per day, or an average of \$112 per person. These local spending estimates do not include what is paid for charter fees or tips.

Direct spending in Great Lakes coastal communities by charter fishing customers in 2003 was estimated to be \$20.57 million, not counting charter fees. This figure is almost evenly divided between day and overnight trips. It does not include spending at home in preparation for the trip or spending on route to Great Lakes coastal communities where the boats are docked.

The direct 2003 economic impact of charter customer trip spending was estimated at \$16.7 million in sales, \$6.9 million in wages and salaries, and \$9.2 million in value added to local economies, sustaining 331 jobs.



The value of maintaining recreational harbors, and consequences of the alternative

While the economic benefits identified in the recreational boating study appear significant, they are jeopardized in many Great Lakes shallow-draft harbors by a lack of maintenance dredging. In many shallow-draft harbors, entrance channels that provide access to the big lakes are becoming blocked by sediment accumulations, a problem made worse by low lake levels in recent years. Vessel groundings within these harbors are also becoming more common.

An analysis of the dredging status of shallow-draft recreational harbors in the Great Lakes in the 2004 period showed significant shortfalls, despite the difficulty of obtaining concrete data for many harbors. Of 14 Great Lakes recreational harbors on which reliable data could be obtained (out of more than 80 on the Great Lakes), dredging needs were found to total in excess of 300,000 cubic yards. Dredging needs among the remaining harbors appear to be substantial as well. The problem could get worse, if as predicted, lake levels continue to decline due to climate change. The Corps believes an annual investment of \$5 million in dredging would be adequate to maintain all Great Lakes recreational harbors under current conditions.

A number of these harbors also have value beyond that associated with recreational boating. Ten are home to ferry operations and provide important transportation services. Five host strategically located U.S. Coast Guard search and rescue stations, facilities that play a vital public safety function and also contribute to the econo-

mies of their host communities. Sixteen shallow draft recreational harbors are classified as harbors of refuge, providing boaters with safe haven during foul weather. Finally, five are considered subsistence harbors upon which isolated island communities rely for goods and services.

Shallow draft harbors also provide a spur for economic growth as former industrial areas along them are restored and converted into parks, upscale housing and marinas, along with the attendant businesses they bring. Recreational harbors are a key element of these developments, drawing boat owners, their guests and transient boaters from other harbors, as well as lending their ambience to help create that special atmosphere that is part of the draw of a lakefront community.

Reduced federal funds for dredging nationwide have resulted in commercial harbors and navigation channels being given priority over recreational harbors, particularly those classified as shallow-draft. Present policies of the Administration do not allow the U.S. Army Corps of Engineers to include recreational harbors in its operation and maintenance (O&M) budget, so the only way these harbors are dredged is by congressional earmarks. Many recreational boating interests believe that this approach does not fully recognize the public value of recreational harbors to the nation; this report demonstrates that they are right.



While the economic benefits identified in the recreational boating study appear significant, they are jeopardized in many Great Lakes shallow-draft harbors by a lack of maintenance dredging.



Active U.S. recreational harbors by lake and connecting channel

Lake Superior		
Bayfield Harbor, WI Big Bay Harbor, MI Black River Harbor, MI Chippewa Harbor, MI Cornucopia Harbor, WI	Eagle Harbor, MI Grand Marais Harbor, MI Grand Traverse Bay Harbor, MI Knife River Harbor, MN La Pointe Harbor, WI	Lac La Belle, MI Port Wing Harbor, WI Saxon Harbor, WI Whitefish Point Harbor, MI
Lake Michigan		
Algoma Harbor, WI Arcadia Harbor, MI Big Suamico Harbor, WI Burns Waterway Small Boat Harbor, IN Fox River, WI Greilickville Harbor, MI Kewalinee Harbor, WI Leland Harbor, MI	Les Cheneaux Island, MI Manistique Harbor, MI New Buffalo Harbor, MI Oconto Harbor, WI Pensaukee Harbor, WI Pentiwater Harbor, WI Petoskey Harbor, MI Portage Lake Harbor, MI	Saugatuck Harbor, MI Sheboygan Harbor, WI South Haven Harbor, MI St. James Harbor, Beaver Island, MI Washington Island, WI White Lake Harbor, MI
Lake Huron		
Au Sable Harbor, MI Bayport Harbor, MI Caseville Harbor, MI Cheboygan Harbor, MI Detour Harbor, MI	Hammond Bay Harbor, MI Harrisville Harbor, MI Inland Route, MI Lexington Harbor, MI Point Lookout Harbor, MI	Port Austin Harbor, MI Port Sanilac Harbor, MI Sebewaing River, MI Tawas Bay Harbor, MI
Lake Erie		
Barcelona Harbor, NY Bolles Harbor, MI Cattaraugus Creet Harbor, NY Cooley Canal Harbor, OH	Port Clinton Harbor, OH Rocky River Harbor, OH Sturgeon Point Harbor, NY Toussaint River, OH	Vermilion Harbor, OH West Harbor, OH
Lake Ontario		
Great Sodus Bay Harbor, NY Irondequoit Bay Harbor, NY Little Sodus Bay Harbor, NY	Oak Orchard Harbor, NY Olcott Harbor, NY Port Ontario Harbor, NY	Sackets Harbor, NY Wilson Harbor, NY
St Lawrence River/Connecting Waterways		
Belle River, MI Black River (Port Huron), MI Cape Vincent Harbor, NY	Clinton River, MI Little River, NY Mackinac Island Harbor, MI	Mackinaw City Harbor, MI Morristown Harbor, NY Point River, MI

Number of watercraft by boat type, 2003

Boat Type	Total
Aluminum power < 16'	869,208
Aluminum fishing 16'-24'	605,859
Aluminum fishing 25'-29'	2,520
Pontoon	381,486
Fiberglass power < 16'	253,452
Fiberglass runabout 16'-24'	871,831
Fiberglass yacht 30' +	52,077
Fiberglass cruiser 25'-29'	79,441
Canoe/kayak/self -Propelled	364,394
Personal water craft	352,251
Sail	111,357
Inflatable	48,787
Jet boat	25,616
Ski	40,663
All other	113,155
Total	4,172,097

Case studies

The following are case studies of five Great Lakes recreational harbors, one on each lake, that face serious consequences if navigational access is cut off due to insufficient dredging. Congressional earmarks have enabled these to be dredged periodically until recently, but the future of such funding is uncertain.

Saugatuck Harbor on Lake Michigan is at the mouth of the Kalamazoo River. Natural siltation has prompted the U.S. Army Corps of Engineers to authorize a three-year dredging frequency. The harbor was last dredged in 2004, with no plans for future dredging. Without this dredging program, marina operations in the harbor would be impossible to sustain, according to R.J. Peterson, owner of Saugatuck's Tower Marine. Even with the current program, some portions of the marina have draft restrictions limiting the types and sizes of vessels that can be accommodated. "We are authorized to maintain 14 feet of depth but are lucky to have eight feet," said Peterson. He added that most marinas on the west Michigan coast share the same problem and that if dredging issues are not resolved, the next 10 years could see a dramatic loss of marina operations in the area, and with them their economic contributions to the west Michigan economy.



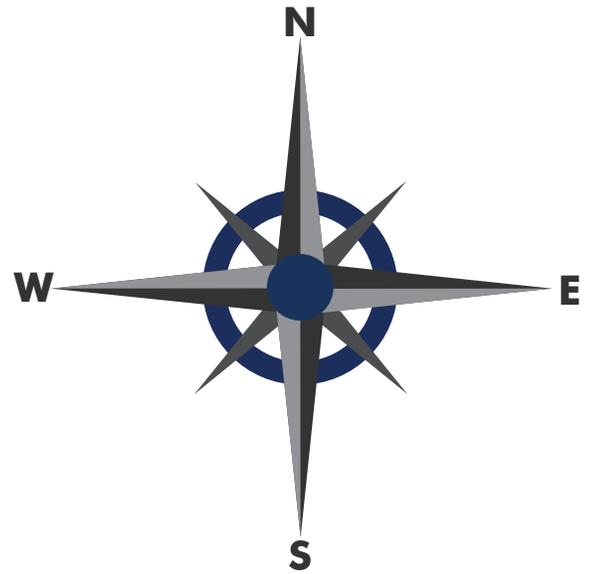
Cornucopia Harbor is located on Wisconsin's Lake Superior shoreline near the Apostle Islands National Lakeshore. The harbor has a scheduled dredging frequency of five years; it was most recently dredged in 2005 by congressional earmark. No future dredging is planned. Within the harbor are two marinas, one municipally owned and operated with 40 slips, and the other a private operation, Siscowet Bay Marina, with 50 slips. Almost all the slips are seasonal rentals and historically see close to 100 percent occupancy. The most crucial dredging need is at the harbor entrance, the silting in of which threatens all recreational boating operations in the harbor. According to David Tillman, owner of Siscowet Bay Marina, siltation nearly shut down the entire harbor before the most recent dredging, putting at risk not only the two marina operations in the harbor (with a potential loss of \$90,000 to \$100,000 in dockage fees alone) but also three restaurants and several other businesses that rely heavily on recreational boating traffic.

Port Sanilac is located on Lake Huron midway up the Michigan Thumb, about 30 miles north of Port Huron. Recreational boaters are served by Port Sanilac Marina Inc., a full service marina offering 120 slips, a 27-ton boat hoist, new and used boat sales brokerage and ships' store. The harbor has a maintenance dredging frequency of seven years and was last dredged in 2003 under a congressional earmark. Again, no future dredging is planned. According to Chester Kolasz, president of Port Sanilac Marina, the primary difficulty in keeping the harbor open is littoral drift of sand which closes the channel. The issue has also been significant for coastal property owners whose beachfronts are affected by the shifting sands. For the marina alone, lack of access would threaten all phases of operations, including boat dockage and storage, which generate \$1,400 to \$4,000 per slip per year. The last maintenance dredging was done through funds earmarked by the community's congressional representative, but the 700 residents live with the threat that a severe storm could close the channel entrance at any time, and that the long process of obtaining further action would take a serious financial toll on the community.

West Harbor is located on Lake Erie on the north shore of Ohio's Marblehead peninsula. Recreational boats access marina facilities in the harbor via the West Harbor Boat Entrance. Maintenance dredging frequency of the channel and harbor is four years; it was last dredged in 2004 but, at last report, is not scheduled for future dredging. One marina serving the harbor is operated by East Harbor State Park; the facility offers 123 slips, dry storage, a restaurant and ships' store. According to manager Cindy Wagner, siltation of the access channel has curtailed operations in the past, especially in periods when lapses in maintenance dredging combine with low water levels on Lake Erie. Potential economic impacts during those periods include loss of dockage fees ranging from \$940 to \$1,875 per slip per year. At nearby Anchors Away Marina, loss of access due to insufficient channel depth would impact 150 slips with annual fees ranging from \$1,300 to \$2,000. Wagner also noted that as dredging lapses continue, navigation channels narrow and boaters veering even slightly out of the channel have experienced grounding and sometimes serious damage.



Irondequoit Bay is a four mile-long, L-shaped bay located on the southern shore of Lake Ontario adjacent to the city of Rochester, N.Y. The channel to the bay has a dredging frequency of five years, though it was last dredged in 2000 and there are currently no plans for future dredging. It is a convenient and popular site for recreational boating; with seven marinas offering a total of 908 slips, almost all of which are seasonal rentals, with close to 100 percent occupancy. At least two marinas are seeking permits to expand. The largest, in terms of slip numbers, is Mayer's Marina, which is also closest to the harbor entrance. Mayer's maintains 260 slips, most of which accommodate smaller boat sizes. According to owner William Mayer, lapses in dredging pose a serious economic threat to not only his and other marinas on Irondequoit Bay, but also to the recreation-oriented economies of three municipalities fronting the bay: the towns of Webster, Penfield and Irondequoit. Mayer estimated that curtailment of operations due to insufficient channel depth would likely cost him upwards of \$180,000 a year in fuel sales alone, and that aggregate losses among all marinas and related operations would likely be in the range of millions of dollars.



This report provides a summary of some of the most relevant data the Great Lakes Commission provided to the U.S. Army Corps of Engineers for use in the Great Lakes recreational boating study authorized under the Water Resources Development Act of 1999. Official release of the full study is pending.



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