Ohio's Lake Erie Charter Fishing Industry In 2010

Introduction

In the winter of 2011, Ohio Sea Grant conducted a comprehensive survey of the charter fishing industry of Ohio's portion of Lake Erie. The survey is an effort to provide an update on the status, business characteristics, and economics of the charter fishing business in Ohio's portion of Lake Erie. The survey is modeled after a similar survey last conducted in 2006 and part of a larger database of information conducted since 1985. The data reported here are for the year 2010. A more complete description of the 2010 survey may be found in Lucente, et al. (In Press).

Methods

In 2010, there were 786 licensed Ohio charter captains. This is the same number of licensed charter captains as in 2006. The Ohio Sea Grant program randomly surveyed 500 of the 786 Ohio licensed charter fishing captains in January, February and March of 2010 using a modified Dillman mail survey technique (Dillman, 1978; 2000). Of the 500 surveys there were 21 (4.2%) returned as undeliverable, out of business, or indicating they did not charter in 2010. Subtracting 4.2% from the 786 licensed captains yields an estimated 753 active Ohio charter captains in 2010. Non-respondents were sent up to three reminder letters. A total of 239 of 479 surveyed captains returned surveys with usable data providing a response rate of slightly less than 50%.

Business

The typical Ohio charter fishing captain in 2010 has been licensed for 13 years. Business organization and boat ownership patterns are presented in this summary **(Table 1)**. An estimated 154 (84%) of the responding captains operated their own charter firm. Approximately 16% (37) of the captains were work-for-hire captains who did not own a charter boat. Most businesses (91%) operated one boat, which is typically 28.5 feet long, 17 years old, and powered by an inboard (70%), inboard/outdrive (18%), or outboard (12%) motor. The average estimated replacement cost for an Ohio charter vessel was $77,941, and replacement cost for onboard business-related equipment was $9,528. About four out of ten (43%) of the respondents used a vehicle for towing their boat and other charter-related business. The average replacement cost of the vehicle was $23,379; for the trailer it is $3,728. Respondents indicated the vehicle was used for boat towing 14% of the time and for other charter business about 31% of the time.

Captains

Of the 753 active Ohio charter captains in 2010 81% (610) owned and operated their own business. Nearly all (92%) responding captains were "six-pack" operators, specifically licensed to carry no more than six passengers. Nearly one in ten (8%) of the responding captains were licensed to carry more than six passengers. More than one-fourth (26%) of captains responding indicated they began their charter operation more than twenty years ago. Almost half (47%) of responding captains indicated getting into the charter fishing industry within the past ten years. More than half of the captains (56%) indicated that they are a professional charter fishing captain because they like the opportunity to help people enjoy fishing, 54% said it is a secondary source of income (that helps pay boating expenses), and 53% said they like the work. Notably, only 12% of the charter captains rely on the charter business as their primary source of income **(Table 2)**.

Trips

Responding captains averaged 28.1 full-day and 6.5 half-day paid charter trips per year. Most (73%) of these were for walleye, 18% were for yellow perch, 3% for smallmouth bass, 1% for steelhead, and 5% were for a combination of species **(Table 3)**. Applying the response data from Table 3 to the total population of 610 charter firms yields an estimated 21,082 charter trips, of which more than 81% were full-day and almost 19% were half-day trips **(Table 4)**. Half-day trips were defined as lasting less than seven hours. June is the busiest month for Lake Erie charter captains with an average of 10.2 trips. Over one fourth (29%) of all trips taken in 2010 were in June. This was followed by July with 7.5 trips (22% of the total) and May at 6.0 trips (17% of the total). Captains averaged 4.5 trips in August, about 3.9 trips in September, 2.0 trips in October, and 1.4 trips in April. The number of trips taken in March and November was negligible. A limited number (10%) of captains reported conducting some charter fishing trips on other Great Lakes. Charter fees varied according to target species, length of the charter, and services offered. The most popular trip was the whole-day walleye charter; its costs averaged $491 per boat.

Estimated total revenues were generated by multiplying the number of trips times the average charge per trip. Walleye accounted for approximately 75% of the estimated revenues; yellow perch made up 15% of the total estimated revenues, a combination of species 6%, smallmouth bass almost 3%, and steelhead, the final 1% of estimated total revenues. Almost 8 out of 10 (79%) Ohio charter customers come from over 50 miles or further away from the charter firm's homeport bringing nature based and recreational tourism dollars to Ohio's lakefront communities.

Costs and Returns

For boat owning captains, the largest annual operating expenses were boat fuel, boat dockage, and boat maintenance & repair **(Table 5)**. Boat loan payments are a high cash outlay but are not part of operating costs. The average cash requirement to operate the charter firm includes the operating expenses plus the boat loan payments. Charter captains making boat loan payments indicated the average yearly boat loan payment was $5,509 **(Table 6)**. For all businesses the average annual cash needed for the charter firm (operating cost $12,405 plus boat loan payment $2,373) was $14,778.

For respondents reporting boat-loan payments, the average annual cash needed was $19,874. The average annual cash needed was $14,298 for operations reporting depreciation. Those that reported neither a boat loan nor depreciation reported an average annual cash need of $11,053. This means that the typical charter firm that owns and operates a single vessel must generate sales of either $11,053 or $19,874 just to meet the cash needs of the firm depending on whether or not their boat is paid off.

Estimated average annual revenues are $15,132. The result is a net negative cash flow of $2,145 for firms reporting a boat loan and a positive cash flow of $2,641 for firms not making boat loan payments. Depending on the situation, those firms with a positive cash flow could pay the day-to-day expenses to operate the charter business from the revenues earned from chartering.

Economic costs are the costs of operating the charter firm except for the cost of a boat loan. The economic costs include operating costs ($12,405) plus capital costs **(Table 7)**. Boat loan costs are a cash requirement if a loan exists, but are not part of the economic costs. Capital costs include depreciation of the boat, and the opportunity cost of owning a boat instead of investing in stocks, bonds, or some other enterprise. The average annual depreciation reported by responding captains was $2,773. Estimated replacement cost of the boat ($77,941) and equipment ($9,528) totals $87,469.

Interest costs based on 5% of the replacement cost of the boat and equipment are $4,373. Thus the capital cost (depreciation + opportunity costs) is $7,146. The economic cost to operate a typical Ohio charter firm is $25,000 for a firm depreciating a vessel and $14,863 for a firm with a fully depreciated vessel. Any revenue in excess of these figures is the return to owner labor and management.

Total costs are represented by capital costs and operating costs combined. The total costs of the average charter operation in 2010 were $19,551. Given these data, a typical captain would have to run at least 40 full-day walleye charter trips at the average $491 per trip to yield a net positive return to the operation. Operations with boat loans would have to run over 48 full-day walleye trips. Captains reporting depreciation would have to run 51 full-day trips in 2010. Captains without boat loan payments and fully depreciated boats would need to have run 31 trips in 2010 to yield a net positive return.

Operating Characteristics

Of the 786 licensed charter captains in 2010, an estimated 4.2% (33) were not actively chartering in 2010. Of the remaining 753 active captains 81% or 610 were boat owning charter firms and the rest (143) were captains for hire who worked for others and were paid either in wages or by the trip an average of $4,862. The estimated number of active charter firms declined almost 5% (from 639 in 2006 to 610 in 2010) and the estimated number of paid charter trips declined over 26% down from 28,563 in 2006 to 21,082 in 2010. In 2010, the active charter captains generated an estimated $9.93 million in gross revenues (610 firms x $15,132 per firm plus 143 captains for hire x $4,862). Similar calculations for 2006 adjusted for inflation to 2010 dollars show an over 13% decline in estimated gross revenues from $11.47 million in 2006 (Lichtkoppler et al., 2008, US Department of Labor, 2011).

Nearly all (95%) captains indicated they were very concerned about the future of the Lake Erie sport fishery **(Table 8)**. When asked to select the most important concern about the future of the fishery respondents ranked aquatic invasive species and fisheries management as the greatest concerns **(Table 9)**. Low fish abundance was the top concern related to catching fish. A reduced walleye limit followed by low catch rates were top concerns related to attracting customers. The cost of fuel was by far the most important concern related to business expenses.

One-quarter (25%) of captains indicated no major changes were made to their charter business over the past five years **(Table 10)** and a similar proportion (27%) indicated no major changes were planned for the next five years **(Table 11)**. Nearly one-half (47%) of captains responding indicated they had recently increased prices. More than one-quarter (29%) indicated they plan to increase prices over the next five years. Only 5% of respondents indicated they had reduced prices and 2% mentioned plans to decrease prices in the future. While more than one-quarter (29%) indicated they had decreased the number of charter trips made per year, nearly one-quarter (23%) indicated an increase. Furthermore, 44% of captains indicated plans to increase the number of trips in the next five years. Less than one-tenth of captains indicated plans to branch out in other fishing related businesses (7%), buy a bigger boat (8%), and/or buy a newer boat (9%). In 2010, 16% of captains indicated plans to quit the charter business at some point over the next five years.

In 2010, Ohio Sea Grant sought the opinions of charter captains on the seven critical issues identified by Ohio Sea Grant affecting Lake Erie that could impact the charter industry. Captains were asked to rate these issues in order of importance to them, and these data are shown in **Table 12**. Aquatic invasive species, harmful algal blooms, and nutrient loading and phosphorous are at the top with the dead zone, coastal community/economic development, sedimentation and dredging, and climate change at the bottom.

Strategies for Charter Businesses

While captains plan to increase revenue by increasing prices and number of trips, these may not end up as viable options if the populations of sport fish continue to decline and/or current poor economic conditions persist. If cost is prohibitive to smaller groups, captains could strategize to combine small groups and individual anglers to "fill the six-pack" and defray angler costs, thus increasing possible numbers of trips during a prolonged downturn in the economy. Other strategies utilized in the past have included offering half day trips, offering more trips by following the seasonal migration of fish from port to port, and marketing to underrepresented audiences such as women.

In 2006, 5% of responding captains planned to expand into multi-activity and /or non-fishing charters and in our 2010 survey 7% of responding captains followed through on this plan.

Multi-activity trips could be packaged to expand on additional interests of fishing clients such as winery tours, Lake Erie island excursions, and Cedar Point to name a few. Examples of non-fishing charters include dive and snorkel charters, lighthouse cruises, and sunset cruises. Another nature based activity that continues to increase in popularity is birding, and the western basin of Lake Erie is a geographical hot spot for bird migration. Thousands of birders flock to Ohio's Lake Erie shoreline every year and could represent a new clientele group for charter captains. Profitability of these and other opportunities may be discovered by research regarding potential charter clientele preferences and reasons for chartering. As noted in earlier charter surveys, captains should market a nature-based tourism experience on a world-class resource and try to expand the client base by cooperating with local, state, and regional tourism bureaus (Lichtkoppler et al. 2008).

One-half of all charter fishing trips takes place in June and July. Charter fishing attracts anglers to coastal communities importing tourist dollars and exporting a world class fishing experience. The unique experience of fishing on a very large body of water in a safe reliable vessel with an experienced captain should not be underestimated or undersold. In coastal communities with a concentration of charter firms this industry generates significant tourism dollars for the local economy. Charter captains should consider fostering relations with other Lake Erie tourism-related industries to better realize the benefits of cross-promotion and work to extend the busy season beyond peak summer months. Tourism organizations, chambers of commerce, fisheries managers, and Sea Grant/Extension may also want to consider playing a role. Despite the economic and environmental stressors confronting the Lake Erie fishery in 2010, it still remains the largest freshwater fishery in the world. Marketing strategies should promote Lake Erie's world class fishery in order to maintain the viability of the charter industry.

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Acknowledgements

The authors wish to thank Ms. Carmina Chiappone, Mr. Eugene Braig and Dr. Thomas Blaine for their assistance with this project.

Table 1. Organization of Ohio's Lake Erie charter boat fishing businesses.

Business Organization	Number of respondents	Percent of respondents
Charter firms		
Owned own boat	186	78%
Leased/rented boat	2	1
Other arrangement	5	2
Work for hire captains		
Freelance hire per trip	37	16
Salaried employee	8	3
Total	238	100%
Charter firm ownership		
Sole proprietorship	154	84%
Partnership	4	2
Corporation	18	10
Other	7	4
Total	183	100%

Table 2. Reasons for Ohio charter captains entering / remaining in the charter fishing business (number of respondents = 233). Respondents were asked to check all items that applied and multiple choices were allowed.

Reason for Chartering	Number of respondents	Percent of respondents
Help people enjoy fishing	131	56%
Secondary source of income	126	54
Like the work	124	53
Primary income source	28	12
Other	25	11%

Table 3. Reported average number of trips, average charge per trip and calculated revenues earned per firm by species sought and trip length.

Fish species	Trip length	Average number of trips per business [a] and ± standard deviation		Average charge per trip [b] and ± standard deviation		Revenues earned per business [c]
Walleye	Full day	20.9	±20.4	$491	±111	$10,262
	Half day	4.5	±13.9	392	±113	1,764
Steelhead	Full day	0.4	±2.3	513	±74	205
	Half day	0	NA	372	±64	0
Smallmouth	Full day	0.9	±2.5	483	±109	435
bass	Half day	0	NA	380	±123	0
Yellow perch	Full day	4.4	±5.3	405	±101	1,782
	Half day	1.7	±6.1	355	±81	604
Combination	Full day	1.5	±4.0	491[d]	±111	737
of species	Half day	0.3	±1.9	392	±113	102
SUBTOTAL	Full day	28.1				13,420
	Half day	6.5				2,469
TOTALS		34.6				$15,890

[a] Rounded to the nearest tenth
[b] Rounded to the nearest dollar
[c] Revenues are estimated by multiplying the average number of trips times the average charge per trip.
[d] As over 97% of the combination trips were for walleye and another species we used the charges for walleye trips for the combination trips.

Table 4. Estimated number of trips, average charge per trip, revenues earned and % of total revenues by the Ohio charter industry in 2010 by fish species and by trip length.

Fish species	Trip length	Estimated number of trips	Average charge per trip [a]	Total revenues earned [b]	Percent of total revenues
Walleye	Full day	12,749	$491	$6,259,759	64
	Half day	2,745	392	1,076,040	11
Steelhead	Full day	244	513	125,172	1
	Half day	0	372	0	0
Smallmouth	Full day	549	483	265,167	3
bass	Half day	0	380	0	0
Yellow perch	Full day	2,684	405	1,087,020	11
	Half day	1,037	355	68,135	4
Combination	Full day	915	491	449,265	5
of species	Half day	159	392	62,171	1
SUBTOTAL	Full day	17,141			
	Half day	3,941			
TOTALS		21,082		$9,692,729	100%

[a] Rounded to the nearest dollar

[b] The numbers of trips are extrapolations of respondent trip rates applied to the estimated population of 610 active Ohio charter firms (excluding party boats). Revenues are calculated from the number of trips multiplied by the average charge per trip.

Table 5. Average annual operating costs for all reporting boat-owning captains, for captains reporting boat loans, for captains reporting depreciation and for captains not reporting a boat loan or depreciation. N= number of respondents.

	All Firms		Firms with boat loan		Firms with depreciation		Firms without boat loan or depreciation	
Item	Expense	N	Expense	N	Expense	N	Expense	N
Fuel/oil	$3,826	139	$4,010	54	$3,366	22	$3,734	70
Dockage	1,276	151	1,409	55	1,210	23	1,193	80
Boat maintenance & repair	1,056	145	1,050	55	2,052	23	750	74
Equipment repair	928	139	835	52	1,099	23	926	71
Miscellaneous	926	132	1,274	51	1,261	22	567	66
Advertising	909	137	1,023	54	1,118	23	796	67
Insurance	810	149	917	56	821	23	716	77
Boat storage fees	663	143	826	55	857	21	500	74
Office & communications	517	132	654	51	552	22	389	66
Labor (hired)	435	131	449	48	377	23	423	67
Boat repair not covered by insurance	369	133	676	49	635	20	215	71
License fees	211	141	208	52	344	23	196	73

Drug testing/								
professional dues	93	145	93	55	82	23	94	74
Boat launch fees	57	141	52	52	69	22	56	74
TOTAL OPERATING								
COSTS	$12,405	132	$14,365	46	$13,237	20	$11,053	73

Table 6. Average revenue, cash flow needs and net cash flow to the firm for Ohio Lake Erie charter boat businesses in 2010 estimated by all businesses, businesses reporting boat loan payments, businesses reporting depreciation, and businesses not reporting boat loan payments and/or depreciation. Negative numbers are indicated in parentheses. N is the number of actual respondents.

Income/Expenses	All Businesses		Businesses reporting boat loan		Businesses reporting depreciation		Businesses not reporting boat loan payments or depreciation	
	Amount	N	Amount	N	Amount	N	Amount	N
Average revenue	$15,132 ±16,110	153	$17,729 ±16,739	54	$14,010 ±8,947	23	$13,694 ±16,646	83
Cash flow needs								
Average operating costs	$12,405	132	$14,365	46	$13,237	20	$11,053	73
Boat-loan payments	2,373	130	5,509	56	1,061	21	NA	NA
Cash needed	14,778		19,874		14,298		11,053	
Net cash flow	$354		(-$2,145)		(-$588)		$2,641	

Table 7. Economic cost components, total economic cost and net return to the operator for Ohio Lake Erie charter boat businesses in 2010 estimated by all businesses, businesses reporting boat loan payments, businesses reporting depreciation, and businesses not reporting boat loan payments and/or depreciation. Negative numbers are indicated in parentheses. N is the number of actual respondents.

Item	All Businesses		Businesses reporting boat loan		Businesses reporting depreciation		Businesses not reporting boat loan payments or depreciation	
	Amount	N	Amount	N	Amount	N	Amount	N
Economic cost								
Average operating cost	$12,405	132	$14,365	46	$13,237	20	$11,053	73
Capital costs								
Opportunity costs [a]	4,373	163	5,232	53	4,168	22	3,810	95
Depreciation	2,773	63	4,071	14	7,595	23	NA	NA
Total economic cost	$19,551		$23,668		$25,000		$14,863	
Net return to operator	(-$4,419)		(-$5,939)		($-10,990)		(-$1,169)	

[a] Opportunity costs are estimated at 5% of the average estimated replacement cost of the boat and on board equipment

Table 8. Concerns of the Ohio Lake Erie charter fishing industry on a scale of 1=least important to 5=most important.

Concern	Mean Score	Standard Deviation	Number of Respondents
Future of the fishery	4.7	±0.6	234
Catching fish	4.3	±0.8	235
Attracting customers	4.1	±1.1	233
Business expenses	3.9	±1.2	231

Table 9. Concerns of the Ohio Lake Erie charter fishing industry. Respondents were asked to indicate their most important concern within each category.

Concern	Number of respondents	Percent of respondents
Future of the fishery		
Aquatic invasive species	69	29%
Fisheries management	52	22
Illegal fishing practices	32	14
Overharvest of fish stocks	28	12
Harmful algal blooms	26	11
Lake Erie dead zone	6	3
Sedimentation and dredging	4	2
Climate change	0	0
Other	18	8
Total	235	~100%
Catching fish		
Low fish abundance	157	68%
Poor weather conditions	44	19
Government regulations	12	5
Lake Erie dead zone	12	5
Other	7	3
Total	232	100%
Attracting customers		
Reduced walleye catch limits	63	27%
Low catch rates	61	26

Negative Lake Erie publicity	26	11
Poor weather conditions	24	10
Harmful algal blooms	21	9
Government regulations	13	6
Marketing	13	6
Fish consumption advisories	0	0
Other	12	5
Total	233	100%
Business expenses		
Cost of fuel	201	87%
Fixed operating costs	20	9
Boating equipment	5	2
Cost of boat loan	0	0
Other	5	2
Total	231	100%

Table 10. Activities changed by Ohio Lake Erie charter captains over the last five years (number of respondents =234). Respondents were asked to select all applicable changes.

Activity	Percent of respondents indicating a change in activities over the last five years
Increased prices of charter services	47%
Decreased number of annual trips	29
No major changes	25
Increased number of annual trips	23
Bought a bigger boat	16
Began charter business	16
Bought a newer boat	14
Bought own charter boat	13
Expanded into multi-activity and/or non-fishing charters	7
Hired additional first mate(s)	6
Operated a newer boat	6
Operated a bigger boat	6
Branched out into other fishing related businesses	5
Decreased prices	5
Bought an additional boat	3
Operated an additional boat	2
Hired additional charter captain(s)	2
Other	11%

Table 11. Five-year plans of Ohio Lake Erie charter captains (number of respondents =232). Respondents were asked to select all the plans that applied to them.

Activity	Percent of respondents selecting a change planned for their charter activities in the next five years
Increase number of annual trips	44%
Increase prices of charter services	29
No major changes	27
Quit the charter business	16
Buy a newer boat	9
Buy a bigger boat	8
Expand into multi-activity and/or non-fishing charters	7
Branch out into other fishing related businesses	7
Decrease number of annual trips	6
Operate a bigger boat	4
Buy own charter boat	4
Hire additional charter captain(s)	3
Hire additional first mate(s)	3
Buy an additional boat	3
Operate an additional boat	3
Operate a newer boat	2
Decrease prices	2
Other	11%

Table 12. Critical issues confronting Lake Erie. Respondents were asked to rate the issues on a scale of 1=not very important to 5=extremely important.

Lake Erie Issue	Mean Score	Standard Deviation	Number of Respondents
Aquatic invasive species	4.5	±0.9	224
Harmful algal blooms	4.0	±1.0	225
Nutrient loading and phosphorus	3.9	±1.1	224
The dead zone	3.3	±1.3	219
Coastal community / economic development	3.0	±1.2	217
Sedimentation and dredging	2.9	±1.3	214
Climate change	2.5	±1.3	207

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Educational Material Statement: This research effort is intended as a bulletin.

Abstract:

In the winter of 2011, Ohio Sea Grant conducted a comprehensive survey of the charter fishing industry of Ohio's portion of Lake Erie. The survey is an effort to provide an update on the status, business characteristics, and economics of the charter fishing business in Ohio's portion of Lake Erie. The survey is modeled after a similar survey last conducted in 2006 and part of a larger database of information conducted since 1985. The data reported here are for the year 2010. A more complete description of the 2010 survey may be found in Lucente, et al. (In Press).

Target Audience and Statement of Need:

Ohio Department of Natural Resources, Division of Wildlife, Ohio Charter Captain clientele, Ohio citizens, Ohio coastal county convention and visitors bureaus

This research is needed due to the positive economic impact the Ohio Lake Erie charter fishing industry provides to Ohio's larger tourism economic outputs. Further, this research establishes a direct link from university research to state agency decision makers (Ohio Dept. of Natural Resources) to resource users (Ohio charter captains) and their dependency on one another.

Submission Date: June 8, 2012