Lake Erie Fisheries Status and Trends Report 2006

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Report to the Lake Erie Committee

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Commercial Fishery Summary and Status

Recommended annual allowable commercial quotas have not been attained in the past decade because of limited effort. Only one licensee is actively fishing commercial trap nets.

Sustained high abundance of the yellow perch population has supported a perch fishery whose landings have increased by a factor of ten since 2002. An increase of 62% from 2005 landings in 2006 realized the largest annual commercial perch catch since the restriction of commercial fishing to trap nets in 1996. Landings of most other species increased from 2005 and the total annual commercial catch for 2006 was twice the average of catches for years 1996-2006.

Yellow Perch

Commercial perch CPE (lbs/lift) for trap nets has progressively increased since 2000. Increases in perch abundance as well as experience in use of trap nets are reasons for elevated CPE's. A reduction in the minimum size restriction in 2006 also permitted an earlier recruitment of the large 2003 year class to the trap net fishery. With the infusion of young, age-3 fish it was anticipated that the mean age of the perch landings would decline, but this value remained at 6.1 years, the same as 2005, and stable since 2002. It is evidence that the longer older fish make up much of the catch and that exploitation rates (i.e. mortality) due to fishing did not increase as much as they could have at such high CPE's. Although overall perch stock mortality has been creeping up since 1997, it is still at management target levels. Perch biomass estimates have began a decline, however, stocks will be made up of mostly older perch, age 4^{++}, and will be able to sustain commercial harvests of 20-30 thousand pounds with low (10%) exploitation rates. Accordingly, the commercial TAC for 2007 is 35,000 pounds, the same as 2005 and 2006. The reality is that 2007 landings are expected to level at about 60% of the allowance.

Walleye

The commercial landings of walleye in 2006 were 2,818 pounds, the high for the period 1996 – 2006. The TAC for 2006 was 4,000 pounds. The recruitment of the strong 2003 cohort of walleye to the vulnerable population helped elevate the commercial catch rate by a factor of 3. The population and the catch, were still made up of older fish of the strong 2001 year class and a high percentage of fish age 7 and older, thus maintaining a high mean age of 6.3 years in the landings. A relatively low exploitation rate usually applied by the Pennsylvania commercial walleye fishery will yield an incidental catch again in 2007. The Pennsylvania commercial walleye quota for 2007 is 4000 pounds.

Lake whitefish

Few whitefish were reported in landings in 2005 and 2006. Declining abundance, defined by sporadically poor year class production, continues to promote a weak whitefish stock and fishery. The shallow water trap net fishery exhibits poor whitefish

catchability because of the nature of the species seasonal, deep-water distribution.

Burbot

2006 burbot landings were a continuation of a downward slide in burbot harvests, the lowest since 1996. The population probably has stabilized at a reduced level over the past few years.

White bass and white perch

White bass landings have been reported at low levels since the transition of the commercial fishery to trap net gear. The relative inefficiency of this gear to white bass, as well as the decline of this species abundance in Pennsylvania waters over the past twenty years relegates this species to obscurity in the eastern basin commercial fishery. The last modest year class for white bass was in 2001, but its influences in boosting the species landings was as short lived as the white bass itself.

White perch landings have only increased modestly in 2005 and 2006 within the past ten years. CPE's have also increased to 30 – 35 pounds per lift, suggesting a small increase in the white perch fishable stock in Pennsylvania waters. The last year class of any significance was hatched in 2002. Based on commercial data, white perch mortality has increased measurably beyond the weak populations of the 1990's and early 2000's. Other evidence leads us to believe that this abundance will not be sustained and landings data represent incidental catches since the white perch are not a target species, and the data is a poor representation of abundance in such cases.

Fish Stocks Status and Trends

Bottom trawl assessment indices normally derived from Fall surveys were not conducted in 2006. Spring 2006 surveys, ordinarily used for early support and information were therefore used for limited fish stock analysis.

Yellow perch

Summer 2006 stock assessment suggests perch are showing a decline in Pennsylvania waters, although the CPE index for 2006 is probably biased too low. Nonetheless, a decline was anticipated due to the relatively weak production and subsequent recruitment of year classes following a strong presence of the 2003 cohort. The mean age of the perch assessment catch (5.7 years) was about that of 2005, and we assume that the 2007 population will be made of older, larger perch, including a high percentage of age 4 perch. This should reduce concern over anglers culling their perch catch, and angler release rate should decrease in 2007.

Anticipated, as well, was an increase in estimated total mortality due to the increase in the percentage of the catch that was harvested. The large 2003-year class still did not contribute strongly to the overall harvest, as anglers released about 25% of the perch they caught. We assume that most of the perch released in 2006 were smaller fish, from the large age-3 cohort, despite the elimination of the 8" MSL. The mean age of the harvest was over 6 years, dominated by the big 2001 year class. Anglers still prefer larger, older perch.

Walleye

The Pennsylvania walleye stock continues to hold its numbers at peak levels consistent with those of the early 1990's. CPE's of walleye in assessment surveys remain stable for 2004 and 2005 with a slight decline in 2006. The average age of walleye in assessment catches also holds above 6 years as the older segment of the population still retains considerable numbers of the strong year classes of 1996, 1999 and 2001.

The mean age in the 2006 angler harvest of 4.1 years, dropped from 6.6 years due to the early recruitment, to the sport fishery, of the exceptional 2003 year class. This was managed by lowering the MSL from 18 inches in 2005 to 15 inches in 2006. The intent was to lessen the walleye release mortality, resulting from the inevitably high vulnerability of the 2003 cohort, whose mean length was less than 18 inches. The change in MSL, the large number of older fish and the expectation of the appearance of the 2003 year class brought large numbers of anglers back to the walleye fishery.

The 2007 abundance of the walleye population is expected to decline as the older fish suffer increased mortality and much fewer young walleye recruit due to recent weak year class production. The weak walleye hatch in 2006 also portends a continued reduction of walleye numbers for 2008, certainly affecting the 2008 and 2009 sport fisheries.

Lake whitefish

Late spring 2006 stock assessment, undertaken prior to whitefish movement to deep, colder eastern basin habitat, found abundance indices about the same as 2005. These indices suggest whitefish abundance is stable at levels consistent with the period of the late 1970's. The collection of year classes of our limited sampling finds the 2003 year class to be the stronger of the 10 cohorts making up the sample. This is also a similar feature of whitefish populations examined lakewide.

Sport Fishing Summary

Introduction

Comprehensive analysis of sport fishing in Pennsylvania waters of Lake Erie has been limited. Historical data on angling activity was provided through synoptic creel surveys in 1981 and 1993. An extensive survey on tributary steelhead fishing was conducted in 2004 (Murray and Shields, 2004), and provided an updated overview of the steelhead fishery. The Lake Erie Research Unit (LERU) plans for 2007 include an updated assessment of the summer shoreline and boat angler fisheries.

An angler diary program had been administered from 1987 to 2005, and provided long term (19 year) statistics on catch rate, relative use, catch and harvest. This program was postponed in 2006 due to lack of participation. The majority of the participants in the angler diary program were professional anglers; guides and charter captains that operated within the Pennsylvania waters of the Lake Erie watershed and were obligated, by permit guidelines, to participate in the Lake Erie Cooperative Angler Log (LECAL) program. New permitting regulations that were enacted for 2006 relinquished the guides and captains from compulsory reporting. In response to the diminished number of participants, the LERU staff plans on aggressively recruiting participants for the 2007-angling season.

In 1996, the LERU initiated an annual boat angling creel survey that would provide accurate estimates of the

angling activity for the most frequently targeted fish species on the open lake portion of Lake Erie. Summary information from the Lake Erie Boat Angler Survey (LEBAS) is used to describe the status and trends of the most frequently targeted, caught and harvested sport fish in Pennsylvania waters of Lake Erie.

***Lake Erie Boat Angling Survey* (LEBAS)**

Materials and Methods

Beginning in 1996, the LERU initiated an annual creel survey of the open lake waters of Lake Erie. Extensive creel survey analysis in 1993 provided information on the most frequently used launch facilities by anglers fishing the open lake. Sites were selected from the 1993 comprehensive analysis that demonstrated the highest angler effort, catch and harvest of yellow perch and walleye.

A bus route design was employed to estimate the effort, catch and harvest of walleye, yellow perch, smallmouth bass and steelhead trout on the open lake. Based on the 1993 Lake Erie Angler Survey, the majority of the open lake angling activity directed at these species was concentrated at four public launch sites: Walnut Creek Access Area; North East Access Area; Lampe Marina, and East Avenue boat launch.

The relative survey intensity at each site was weighted based on anticipated use at these sites. A day-type stratification had creel clerks afield two randomly selected weekday days and one randomly selected weekend day each week. Holidays, if occurring on a weekday, were randomly chosen by computer generation and considered a weekend day type. A time of day stratification was used; each day was divided into two sampling periods of 7.5 hours each, one early (7:00) and one late (14:30), so that all daylight hours were surveyed. The night fishery was not sampled.

The 2006 LEBAS began May 1 and was completed on October 31. A route was constructed containing four (Walnut Creek Access Area, Lampe Marina, East Avenue Boat Launch and North East Access Area) heavily used boat angler launch facilities. Routes were followed progressively in a "circular" manner. By this design, a creel clerk was randomly assigned, without replacement, a starting point on the route each survey day. Because of the randomization of the survey design, data obtained by the creel clerks was expected to reflect angling activity throughout all times of the daylight angling day.

First priority for a clerk on-site was angler counts. Boat counts were tallied as a boat crossed the shore/water interface. Exiting and entering boats were counted. This provided an independent estimate of precision (launching boats should equal landing boats). As boats entered or exited the water, they were characterized as angling or non-angling, based on responses by people on board.

Second priority for clerks on site was angler interviews. Data was obtained from all cooperative anglers, as time would allow. A variety of information was solicited during interviews including: number of rods fished, group size, amount of time spent fishing, species sought (up to 3), the number of species caught and harvested, if the trip had been chartered and the geographic area of species targeted, caught and harvested. If time was available, clerks were responsible for collecting length measurements and scales from creeled fish. These biological measurements

were used to construct length frequencies, and age composition of the harvest. During 2006, scales were collected from yellow perch (N=127) and walleye (N=106).

For the purposes of the open lake analysis, statistics of interest were sometimes separated by basin (central v. eastern) to better describe the use, catch and harvest of open lake fish stocks. The effort, catch and harvest estimates for yellow perch, walleye, smallmouth bass and steelhead trout were expanded from estimates derived from 2006 LEBAS sites to lake-wide estimates (PA waters) based on the proportion that these sites represented relative to all sites surveyed during the expansive 1993 Lake Erie Angler Survey.

Results:

In 2006, creel clerks collected 608 completed trip interviews from boat anglers landing at Walnut Creek Access Area (348), North East Access Area (120), East Avenue Boat Launch (80) and Lampe Marina (60). The information provided by cooperative anglers, and counts of launching and landing boats at these areas were used to provide estimates of effort, catch, harvest, angler success, and catch and harvest rates.

Information collected in 2006 showed that boat anglers targeted walleye, yellow perch, smallmouth bass, steelhead, "anything that bites", lake trout and largemouth bass. Most of the open lake boat effort was directed at walleye (64%), yellow perch (27%), smallmouth bass (4%), and steelhead trout (3%) (Table S-1).

Boat anglers also caught 14 different "species" and harvested 11 different "species" (Table S-2). Most of the catch was comprised of yellow perch (56%), walleye (17%), sheepshead (8%), white bass (7%), round goby (6%), white perch (3%) and smallmouth bass (2%). Most of the fish harvest was comprised of yellow perch (72%) and walleye (29%). The following sections expand on the key species that make up the core of the fishery use, catch and harvest in Pennsylvania waters of Lake Erie.

Walleye

The quality of the walleye fishery had been on a steady decline since 1998 in response to a declining walleye population. Catch rate dropped to a record low (0.13 walleye/ hour) in 2002. In order to rehabilitate the Lake Erie walleye stocks, in cooperation with the other Lake Erie jurisdictional fishery managers, the PFBC installed an 18" MSL (up from 15") and a 4 walleye/day creel limit in 2004. As the following creel data shows, the MSL had extreme impacts on angler harvests in 2005. After 2002, the fishery began showing signs of recovery as angler success increased and catch rates improved. A declining trend in targeted effort has finally reversed itself, and, as expected, walleye angler effort increased in 2006 as the 2001 and 2003 year classes recruited into the sport fishery. In response to a recovering walleye population, the 2006 sport fishing regulations were returned to "pre-rehabilitation" status, with a minimum size limit of 15" and a daily creel limit of 6 walleye/day. The reduced minimum size limit allowed anglers to creel 91% of the walleye they caught.

Walleye Angler Effort:

For the first time in five years, walleye attracted the majority of the open lake boat angling effort. The 2006 fishing season showed a large increase of walleye angling effort as anglers spent 238,767 hours fishing for walleye

(Figure S-1). Effort more than doubled (120%) from 2005, and was near the long term average (11 year) of 245,645 hours. As usual, the majority (70%) of the effort was concentrated in the central basin. Walleye angler effort increased 159% in central basin waters and increased 61% in eastern basin waters from 2005. A monthly analysis of walleye fishing effort showed that walleye fishing started in June, peaked in July, and continued to attract a moderate number of anglers in August (Figure S-2).

Walleye Catch and Harvest:

In 2006, walleye anglers caught an estimated 162,730 walleye and harvested 148,642 walleye. This was the highest recorded walleye catch and harvest in the 11-year history of the LEBAS. This was a 157 % increase in catch and a 632% increase in harvest from 2005 catch and harvest estimates (Figure S-1). Anglers kept 91% of the walleye they caught, primarily due to the reduced 15" MSL for the 2006 fishing season.

Coincident with targeted effort, the majority of the catch (80%) and harvest (80%) was in the central basin. Walleye catch more than tripled (201% increase) in central basin waters and increased 63% in eastern basin waters from 2005. Walleye harvest increased 750% in central basin waters, and increased 374% in central basin waters from 2005. Large increases in harvest, relative to catch, were due to the recruitment of the 2003-year class to the 15 inch MSL and reductions in the minimum size limit in 2006.

Walleye Angler Success and Catch Rate:

The walleye angler catch and harvest rates from the 2006 LEBAS walleye assessment was the highest in the time series (Figure S-3). Overall catch rate (0.64 walleye/angler hour) and harvest rate (0.56 walleye/angler hour) in 2006, was more than twice the long-term average. The best walleye fishing continues to be in central basin waters (Table S-4). Eastern basin waters showed the greater improvement in both catch and harvest rates from 2005, but as expected, remain below the more productive central basin areas.

Length and Age of Harvested Walleye:

Anglers creeled walleye ranging in size from 15 to 27 inches, with an average length of 18.4 inches. Figure S-4 shows the length frequency distribution of walleye harvest in 2006. Sport caught walleye ranged in age from 3 to 11 years. Average age of the walleye harvest was 4.1 years. As expected, the 2003-year class (age 3) dominated the harvest, representing 58% of the total walleye harvest (Figure S-5).

Smallmouth Bass

As the following section shows, the quality (as measured by angler catch rate) of smallmouth bass fishing had declined over the previous two years. A reversal in that trend was welcomed by bass anglers in 2006. Although directed effort remains well below desired levels, a dedicated core of bass anglers continue to enjoy one of Pennsylvania's best smallmouth bass fisheries.

Smallmouth Bass Angler Effort:

In 2006, anglers spent an estimated 20,727 hours fishing for smallmouth bass in open lake waters of Lake Erie (Table S-5). This represents the lowest recorded angler participation in the 11 year history of the LEBAS. Smallmouth bass angler effort decreased by almost half (48%) from 2005 and was 72% below the average of the last 11-years (Figure S-6). Monthly effort estimates

peaked in May and steady declined throughout remainder of the season (Figure S-7). Most anglers targeted smallmouth bass in the spring. In 2006, May and June accounted for 80% of all effort directed at smallmouth bass. Anglers continue to target smallmouth bass almost exclusively in eastern basin waters. About 91% of the effort directed at smallmouth bass was in eastern basin waters and about 9% of the effort was in central basin waters.

Smallmouth Bass Catch and Harvest:

2006 smallmouth catch estimates decreased 24% when compared with the 2005-angling season, and declined 74% from the 11-year average (Figure S-6). Catch and release fishing continues to dominate the fishery as 97% of the bass that were caught were released. Total lake-wide estimated smallmouth catch in PA waters was 25,582 bass, with an estimated harvest of 665 bass (Table S-5).

Temporal distribution of catch in 2006 showed that May (40%) , June (19%), and July (28%) accounted for most of the smallmouth catch. (Figure S-7).

Smallmouth Angler Success and Catch Rate:

Most anglers targeting smallmouth bass on Lake Erie are successful in catching at least one bass. In 2006, LEBAS anglers were successful on 77% of their trips. Concern of a declining smallmouth bass fishery was somewhat lessened with a large increase in smallmouth bass angler catch rate in 2006 (Figure S-8). 2006 catch rate doubled from 2005, as anglers caught a bass for every 48 minutes fished. Average catch rate over the last 11 years has been about 1 bass per hour (1.03 smallmouth/angler hour).

Yellow Perch

Yellow perch fishing remained very good in 2006. Despite this fact, angler effort declined in 2006, as anglers diverted their attention from perch to walleye. Recovery of the yellow perch stocks, and concern of the catch and release mortality of perch caught in deep waters, had prompted a change in the yellow perch sport fishing regulations in 2006. The daily creel limit was increased from 20 perch/day to 30 perch/day, and the 8” minimum size limit (MSL) was dropped completely. This eliminated the required release of perch less than 8 inches in length and should alleviate some of the associated release mortality.

Yellow Perch Angler Effort:

Angler effort directed at perch decreased for the second consecutive year (Figure S-9). Although interest in Lake Erie perch fishing remains relatively strong, effort decreased 46% from 2005. Anglers directed an estimated 107,886 hours at yellow perch in 2006 (Table S-5). Effort peaked in June, decreased slightly in July and August, but gained momentum in September as anglers switched from walleye to perch (Figure S-10). The majority (56%) of the perch angler effort was concentrated in central basin waters, west of Presque Isle Peninsula.

Yellow Perch Catch and Harvest:

During the 2006 fishing season anglers caught and harvested an estimated 400,013 perch and 300,748 perch respectively (Table S-5). This represented a 26% decrease in catch and a 17% decrease in harvest from the catch and harvest estimates in 2005. Relative to the average over the last 11 years, catch has increased 22% and harvest increased 21% (Figure S-9). About 59% of the total yellow perch

catch and 60% of the total harvest was concentrated in central basin waters. Catch and harvest were highest in September, followed by June, July and August (Figure S-10).

Yellow Perch Angler Success and Catch Rate:

Overall, yellow perch angler catch rate (4.39 perch/angler hour) increased in 2006 for the first time since 2003, and anglers were successful on 91% of the trips in which they targeted perch (Figure S-11). Catch rate increased in both the central and eastern basins in 2006 (Table S-4). Over the past 11 years, average time invested in harvesting a perch was 22 minutes in the central basin and 41 minutes in the eastern basin. In 2006, on average, anglers harvested a perch every 16 minutes while fishing in the central basin and every 20 minutes in the eastern basin.

Length and Age of Harvested Yellow Perch:

The PFBC officially rescinded the 8" MSL on September 9, 2005, and 2006 was the first full season since 1996 where anglers were not restricted by a minimum size limit for perch. Anglers creeled yellow perch ranging in size from 7 to 12 inches, with an average length of 10.0 inches, a small increase from 2005 (9.9"). Figure S-12 shows the length frequency distribution of perch harvest in 2006. Sport caught yellow perch ranged in age from 3 to 11 years. The 2001 year class (age 5) dominated the harvest, representing 25% of the total perch harvest (Figure S-13). Other cohorts contributed very well to the perch fishery including the 2000, 1999 and 1998 year-classes. The strong 2003 yellow perch year class had only marginally recruited into the sport fishery in 2006, and only represented about 7% of the total perch harvest.

Steelhead Trout

Stocking

The steelhead fishery in Pennsylvania is maintained exclusively through tributary stocking programs. 2006 stocking numbers for trout stocked in the Lake Erie drainage are summarized in Table S-8 (PFBC stocking) and Table S-9 (Cooperative Nursery stocking).

Baseline target stocking in Pennsylvania tributaries to Lake Erie is 1 million yearling steelhead per year. This target was met in 2006 when the PFBC stocked 1,064,983 steelhead, and was supplemented by sportsman's cooperative nursery stocking of 140,220 steelhead, resulting in total stockings of 1,205,203 steelhead yearlings. Steelhead were stocked in 12 Lake Erie tributaries, as well as Presque Isle Bay. Stream/location stocking allocations are based on angler use and public access. Most steelhead are stocked in Elk Creek, Walnut Creek, Twentymile (Figure S-17). Trout Run and Godfrey Run, two nursery streams used as the source of Pennsylvania steelhead broodstock collections, received about 18% of all steelhead stocked in 2006. This represented about 12% of the PFBC steelhead production and 66% of the sportsman's cooperative nursery production for 2006. A summary of all trout and salmon species stocked by the PFBC since 1987 is shown in Figure S-18.

Steelhead Fishery

Based on a tributary angler survey conducted from October 2003 through April 2004, the vast majority of the steelhead fishing occurs in the tributaries as described in detail under a separate report (Murray and Shields, 2004). The information in this report is derived from the 2006 LEBAS.

Steelhead Angler Effort:

Total boat angler effort directed at steelhead trout is insignificant relative to the angling effort expended by shore anglers, but the LEBAS data shows annual trends that provide valuable insight into Pennsylvania's steelhead fishery. Results from the 2006 LEBAS estimated the open lake steelhead effort by boat anglers at 16,585 hours (Table S-5). This was an 89% increase from 2005 estimates but a 44% decrease from the 11-year average of 29,573 hours (Figure S-14). In 2006, 95% of the steelhead effort was concentrated in central basin waters, west of Presque Isle Peninsula. Monthly distribution of steelhead boat angler effort was highest in September (51%) and October (42%). The late season peak in steelhead angler effort is typical of anglers intercepting steelhead as they stage for the annual tributary runs (Figure S-15).

Steelhead Angler Catch and Harvest:

Boat anglers caught an estimated 3,755 steelhead and harvested an estimated 2,044 steelhead, harvesting about 54% of the steelhead that they caught (Table S-5). A monthly distribution of catch and harvest is depicted in Figure S-15, and shows that steelhead were taken later in the boating season. Much of the catch and harvest in August was incidental by-catch by boat anglers that are targeting walleye. Although boat anglers tended to harvest a greater percentage of the steelhead that they caught, the total harvest by these anglers remains insignificant.

Steelhead Angler Success and Catch Rate:

Based on the results of the LEBAS data, 38% of the boat anglers targeting steelhead were successful in catching at least one steelhead and landed about one steelhead for every 12 angler hours fished (0.08 steelhead/angler hour). The 2006 catch rate declined from 2005, when anglers landed a steelhead for every 9.6 fishing hours fished. Table S-4 shows that the catch rate was slightly better in eastern basin waters (0.10 steelhead/angler hour) than central basin waters (0.08 steelhead/angler hour).

Reference:

Murray, C., and M. Shields. 2004. Creel analysis and economic impact of Pennsylvania's Lake Erie tributary fisheries in Erie County, Pennsylvania, with special emphasis on landlocked steelhead trout (Oncorhynchus mykiss). Pennsylvania Fish and Boat Commission. Lake Erie Research Unit. Fairview, Pennsylvania, USA.

Year	Walleye	Smelt	Yellow perch	White sucker	Redhorse	Carp	Catfish	Bullhead	Drum	Burbot	White perch	White bass	Lake whitefish	TOTAL
1991	10,296	86	159,352	9,211	3,409	10	60	10	13,733	33,382	52,638	895	300,882	584,100
1992	14,548	46	77,267	5,014	2,540	45	52	15	21,866	22,210	25,701	620	205,133	375,057
1993	29,990	11	28,976	10,557	1,105	0	76	16	11,535	4,197	16,879	834	269,080	373,256
1994	28,205	1	58,765	15,945	3,529	0	476	210	25,316	12,059	47,937	686	350,309	543,438
1995	42,138	0	30,754	12,719	1,717	75	351	23	22,774	30,945	32,892	4,461	169,747	348,596
1996	**81**	**0**	**5,340**	**4,125**	**1,580**	**0**	**6,848**	**872**	**234**	**2,262**	**235**	**96**	**2**	**21,771**
1997	**193**	**0**	**7,398**	**3,223**	**766**	**96**	**3,806**	**626**	**1,117**	**8,910**	**1,628**	**386**	**1,597**	**29,696**
1998	**417**	**0**	**5,281**	**3,544**	**1,283**	**132**	**2,125**	**972**	**628**	**8,963**	**701**	**113**	**3,496**	**27,655**
1999	**229**	**-**	**2,905**	**1,864**	**566**	**-**	**1,877**	**619**	**677**	**7,943**	**201**	**670**	**670**	**20,220**
2000	**183**	**-**	**5,950**	**862**	**436**	**-**	**1,269**	**861**	**567**	**3,529**	**379**	**338**	**-**	**20,214**
2001	**73**	**-**	**2,702**	**755**	**287**	**-**	**601**	**594**	**381**	**4,359**	**427**	**43**	**-**	**10,222**
2002	**43**	**-**	**2,030**	**508**	**142**	**-**	**452**	**18**	**389**	**5,177**	**489**	**19**	**25**	**9,292**
2003	**129**	**-**	**5,050**	**856**	**467**	**-**	**73**	**30**	**936**	**1,821**	**408**	**88**	**93**	**9,951**
2004	**501**	**-**	**7,753**	**1,402**	**348**	**-**	**72**	**286**	**1,486**	**2,401**	**459**	**110**	**91**	**14,909**
2005	**830**		**15,228**	**3,461**	**2,111**		**880**	**868**	**3,050**	**2,238**	**3,844**	**154**	**563**	**33,227**
2006	**2,818**		**20,517**	**3,091**	**2,734**		**292**	**617**	**2,775**	**1,723**	**4,565**	**221**	**363**	**39,716**
MEAN	8,167	10	27,204	4,821	1,439	26	1,207	415	6,717	9,507	11,836	608	81,378	161,873

Table C-1: Annual commercial harvest in pounds, Pennsylvania waters of Lake Erie (Trap net landings in bold).

Month	Walleye	Yellow perch	White sucker	Redhorse	Catfish	Bullhead	Drum	Burbot	White perch	White bass	Lake whitefish	TOTAL
January	11	38	10	47	0	0	63	298	16	4	0	487
February	0	0	0	0	0	0	0	0	0	0	0	0
March	194	565	210	395	93	346	79	141	519	75	25	2,642
April	254	2,230	206	201	31	22	22	58	865	30	0	3,919
May	546	4,860	241	286	10	10	68	32	1,063	17	5	7,138
June	419	4,185	525	457	50	50	297	65	461	0	40	6,549
July	197	1,568	640	454	2	1	286	15	240	6	11	3,420
August	134	2,485	170	176	36	58	555	106	209	24	88	4,041
September	218	1,905	178	136	18	46	712	60	685	39	51	4,048
October	101	2,255	172	209	36	18	316	215	77	9	133	3,541
November	614	376	319	214	0	0	110	215	77	0	10	1,935
December	130	50	420	160	16	8	205	203	20	17	0	1,229
Total	2,818	20,517	3,091	2,735	292	559	2,713	1,408	4,232	221	363	38,949

Table C-2: Monthly commercial landings in pounds, Pennsylvania waters of Lake Erie, 2006.

yearclass	age	percent	number	mean length	mean weight	CPE
2003	3	7%	3,143	195	98	25.3
2002	4	10%	4,540	218	136	36.6
2001	5	25%	11,176	245	190	90.1
2000	6	15%	6,636	251	203	53.5
1999	7	17%	7,334	272	267	59.1
1998	8	19%	8,382	274	262	67.6
1997	9	4%	1,746	285	306	14.1
1996	10	2%	1,048	304	353	8.4
1995	11	1%	349	295	278	2.8
mean age-	6.1		44,354			357.5

length in mm, weight in grams
CPE - number per lift

Table C-3: Yellow perch commercial 2006 harvest in numbers by year-class.

Year Class	Age	CPE	Percent	Average Length	Average Weight
2003	3	7.3	23	172	61
2002	4	6.0	19	199	100
2001	5	5.8	18	231	160
2000	6	1.3	4	242	176
1999	7	2.2	7	273	280
1998	8	4.2	13	288	350
1997	9	2.2	7	294	338
1996	10	1.9	6	331	517
1995	11	0.3	1	328	471
1994	12	0.3	1	334	483
1991	15	0.3	1	336	559
mean age:	5.7	32.0			

CPE in number per 1000 gillnet ft. length in mm weight in grams

Table A1: Yellow perch population year class structure and relative abundance based upon 2006 summer stock assessment.

Year	Emerald shiner		Spottail shiner		Smelt		Gizzard shad		Alewife		Goby	
	age 0	age 1+	age 0	age 1+	age 0	age 1+	age 0	age 1+	age 0	age 1+	age 0	age 1+
1982	23	7	2	4	3,750	3,062	120	1	2,265	150		
1983	1	15	1	8	448	393	74	30	7	26		
1984	-	1	3	12	9,417	946	22	-	8	-		
1985	18	44	3	12	706	2,400	69	-	8	-		
1986	126	83	-	22	1,342	469	536	-	3	-		
1987	105	38	13	11	382	1,140	1	-	28	40		
1988	35	6	13	15	3,808	823	4	2	16	4		
1989	21	18	1	7	1,700	2,244	4	-	42	3		
1990	131	6	-	1	634	262	17	-	1	3		
1991	1	7	-	9	35	676	3	1	24	3		
1992	78	26	1	1	2,389	258	-	-	51	12		
1993	3	4	6	20	94	256	1	2	1	-		
1994	1	1	-	-	819	11	1	-	-	-		
1995	14	5	4	6	36	144	-	-	-	-		
1996	53	-	-	-	1,412	32	-	-	-	-		
1997	1	5	-	1	3	26	-	-	-	-		
1998	56	4	4	1	80	14	-	-	0	0		
1999	0	0	0	0	6	2	-	-	-	-		
2000	0	-	-	-	23	21	-	-	0	-	393	34
2001	0	0	-	-	89	2	-	-	-	-	813	246
2002	23	24	-	1	60	2	-	-	1	-	94	27
2003	262	72	-	-	161	5	-	-	1	0	85	19
2004	0	0	0	0	8	4	-	-	-	-	309	230
2005	3	38	-	-	16	1	1	1	-	-	145	124
2006	-	-	-	-	-	-	-	-	-	-	-	-
Mean	40	17	2	5	1,142	550	36	2	102	10	306	113

Table A-2: Trawl indices of abundance for age 0, yearling and older forage fishes, Pennsylvania waters of Lake Erie. No trawling was conducted in Fall, 2006

	CPE, number per 10 min. tow		
Year	0+	1+	2+ and older
1982	0	0	0
1983	0	0	0
1984	0	0	0.1
1985	7.4	4.4	0.6
1986	0.3	1.3	1.1
1987	0.5	2.3	1.5
1988	2.4	0.1	1.3
1989	14.8	3.2	1.5
1990	9	5	5.8
1991	12	1	13
1992	0.3	0	1
1993	0.5	0	0.9
1994	0	0	0
1995	0.1	0	0.6
1996	0	0	0
1997	0	0	0.5
1998	0	0	0
1999	0	0	0.2
2000	0	0	0
2001	0	0	0
2002	0	0	0
2003	12.2	0	0.2
2004	1.9	0.3	1.1
2005	0	0	0
2006	-	-	-

Table A-4. Deep-water trawl index of lake whitefish age groups. No trawling was conducted in Fall, 2006

Survey year	Numbers per ten-minute tow						
	Age Group						
	2	3	4	5	6	7	8+
1982	16.9	10.6	1.7	0.4	0.0	0.0	0.0
1983	3.7	0.7	0.7	0.2	0.1	0.1	0.0
1984	4.6	5.8	1.5	0.5	0.0	0.0	0.0
1985	1.8	29.2	6.4	0.9	1.4	0.0	0.0
1986	26.7	0.5	2.1	1.0	0.8	0.5	0.0
1987	0.6	12.8	1.6	0.3	0.1	0.0	0.0
1988	4.0	2.9	11.6	1.1	1.6	0.2	0.2
1989	2.9	6.4	1.4	5.8	1.1	0.9	0.2
1990	1.6	0.6	2.3	0.3	1.6	0.1	0.1
1991	0.5	1.5	1.0	4.5	1.1	2.0	0.0
1992	1.4	2.0	3.6	1.7	1.7	1.4	2.2
1993	2.0	4.0	0.0	1.5	2.5	2.5	1.5
1994	0.8	0.1	0.0	0.0	0.0	0.0	0.0
1995	3.6	3.4	1.2	0.2	0.0	0.2	0.4
1996	0.1	0.0	0.5	0.2	0.3	0.2	0.3
1997	0.0	3.5	3.5	2.5	1.5	1.0	0.5
1998	0.1	0.1	0.2	0.4	0.2	0.0	0.1
1999	2.3	2.5	2.4	0.9	0.5	0.2	0.6
2000	0.1	0.1	0.1	0.0	0.0	0.0	0.0
2001	1.2	1.2	5.8	4.0	1.6	1.4	2.5
2002	0.9	1.1	0.7	0.5	0.6	0.0	0.0
2003	5.6	2.5	0.5	0.5	0.5	0.5	0.6
2004	0.8	2.5	1.0	0.4	2.1	0.3	1.0
2005	2.1	0.2	1.1	0.1	0.1	0.4	0.2
2006	-	-	-	-	-	-	-

Table A-6 . Fall trawl assessment values for Lake Erie yellow perch stock; trawl mean CPE. No trawling was conducted in Fall, 2006

Year Class	Age	Frequency	Average Length (mm)	Average Weight (grams)
2004	2	3%	385	507
2003	3	35%	438	770
2002	4	3%	482	1099
2001	5	3%	435	726
2000	6	13%	520	1391
1999	7	10%	636	2609
1998	8	6%	563	1790
1997	9	6%	648	2402
1996	10	3%	546	1400
1995	11	10%	667	2609
1992	14	3%	738	3056
1990	16	3%	720	4144

Mean age: 6.3 CPE = 3.5 number per gillnet feet

Table A-7: Walleye year-class structure based upon limited 2006 assessment returns.

	Central Basin Effort	East Basin Effort	Total Effort
# of Interviews	379	229	608
Effort	178,883	101,401	280,284
Walleye	124,738	53,621	178,359
Yellow Perch	42,913	33,470	76,383
Smallmouth Bass	1,007	11,284	12,291
Steelhead	9,410	540	9,950
Anything the Bites	723	1,397	2,120
Lake Trout	0	1,007	1,007
Largemouth Bass	0	39	39

Table S-1: Estimated angler hours directed at various fish species in central basin, eastern basin and total open lake waters of Lake Erie in Pennsylvania by anglers landing at Walnut Creek Access Area, Lampe marina, East Avenue Boat Launch and North East Access Area during 2006.

	Central Basin Waters		Eastern Basin Waters		Total Open Lake Waters	
# of Interviews	379		229		608	
Effort	178,883		101,401		280,284	
Species	Catch	Harvest	Catch	Harvest	Catch	Harvest
Yellow Perch	209,543	167,162	154,468	109,527	364,012	276,689
Walleye	88,297	80,480	22,359	20,596	110,656	101,076
Sheepshead	30,920	0	19,129	21	50,049	21
White Bass	25,547	1,191	20,231	337	45,777	1,527
Round Goby	7,812	0	28,704	0	36,516	0
White Perch	11,400	522	10,204	913	21,605	1,435
Smallmouoth Bass	1,334	74	13,760	332	15,093	405
Rock Bass	534	18	1,975	38	2,509	56
Steelhead	2,158	1,226	95	0	2,253	1,226
Channel Catfish	344	35	0	0	344	35
Crappie	0	0	133	36	133	36
Sunfish	53	0	76	38	130	38
Lake Trout	0	0	110	0	110	0
Carp	23	0	0	0	23	0

Table S-2: Estimated Catch and harvest of various fish species in central basin, eastern basin and total open lake waters of Lake Erie in Pennsylvania by anglers landing at Walnut Creek Access Area, Lampe marina, East Avenue Boat Launch and North East Access Area during 2006.

		Central Basin Waters			Eastern Basin Waters			Total Open Lake Waters		
		Effort	Catch	Harvest	Effort	Catch	Harvest	Effort	Catch	Harvest
Walleye	May	1,133	32	32	464	176	175	1,597	208	207
	June	59,166	33,250	31,708	17,782	7,125	6,171	76,948	40,375	37,879
	July	64,193	73,632	66,494	37,486	19,395	18,104	101,678	93,026	84,599
	Aug	34,071	19,334	16,772	9,704	4,864	4,580	43,776	24,198	21,352
	Sept	8,423	3,601	3,347	6,345	1,321	1,258	14,768	4,922	4,605
	Oct	0	0	0	0	0	0	0	0	0
	Total	166,986	129,849	118,353	71,781	32,881	30,289	238,767	162,730	148,642
Smallmouth Bass	May	124	0	0	11,023	10,220	0	11,147	10,220	0
	June	1,247	966	0	4,205	3,780	243	5,452	4,746	243
	July	0	107	114	2,473	7,134	180	2,473	7,241	294
	Aug	0	274	7	408	1,398	0	408	1,672	7
	Sept	328	654	0	298	469	121	626	1,123	121
	Oct	0	261	0	620	320	0	620	580	0
	Total	1,699	2,261	121	19,028	23,321	544	20,727	25,582	665
Yellow Perch	May	2,768	2,903	2,309	2,768	2,903	2,309	2,768	2,903	2,309
	June	10,208	37,911	29,485	10,208	37,911	29,485	28,521	94,116	73,863
	July	17,340	54,803	46,213	17,340	54,803	46,213	25,463	73,872	60,416
	Aug	14,852	47,267	35,678	14,852	47,267	35,678	19,247	71,067	48,501
	Sept	12,442	77,040	60,348	12,442	77,040	60,348	25,372	134,593	98,202
	Oct	3,001	10,342	7,663	3,001	10,342	7,663	6,515	23,462	17,458
	Total	60,612	230,267	181,697	60,612	230,267	181,697	107,886	400,013	300,748
Steelhead Trout	May	147	0	0	0	46	0	147	46	0
	June	0	0	0	0	0	0	0	0	0
	July	0	57	0	0	0	0	0	57	0
	Aug	928	1,717	645	0	0	0	928	1,717	645
	Sept	7,988	1,003	604	474	112	0	8,462	1,115	604
	Oct	6,620	819	795	427	0	0	7,047	819	795
	Total	15,683	3,597	2,044	900	158	0	16,583	3,755	2,044

Table S-3: Monthly and total open lake effort (angler hours), catch and harvest for walleye, smallmouth bass, yellow perch and steelhead in central basin, eastern basin and total open lake waters of Lake Erie in Pennsylvania as estimated through the results of the 2006 Lake Erie Boat Angler Survey.

		Central				East				Total Open Lake			
		N	% Success	CUE	HUE	N	% Success	CUE	HUE	N	% Success	CUE	HUE
Walleye	1996	313	69%	0.37	0.30	155	50%	0.15	0.12	468	62%	0.30	0.24
	1997	276	75%	0.37	0.34	138	43%	0.15	0.14	414	64%	0.30	0.27
	1998	367	76%	0.39	0.31	146	51%	0.20	0.16	513	69%	0.35	0.27
	1999	272	72%	0.31	0.29	144	39%	0.13	0.12	416	60%	0.24	0.23
	2000	145	65%	0.31	0.29	101	59%	0.23	0.21	246	63%	0.27	0.26
	2001	147	61%	0.21	0.17	68	50%	0.14	0.13	215	58%	0.19	0.16
	2002	176	64%	0.15	0.15	65	43%	0.09	0.08	241	58%	0.13	0.13
	2003	171	74%	0.31	0.25	54	48%	0.21	0.19	225	68%	0.28	0.24
	2004	166	65%	0.29	0.20	41	34%	0.10	0.07	207	59%	0.25	0.17
	2005	143	75%	0.56	0.17	81	69%	0.37	0.09	224	73%	0.49	0.14
	2006	259	85%	0.76	0.67	119	71%	0.36	0.31	378	80%	0.64	0.56
Smallmouth Bass	1996	41	85%	1.14	0.07	78	82%	0.87	0.09	119	83%	0.96	0.09
	1997	41	76%	0.85	0.06	79	89%	1.18	0.07	120	84%	1.07	0.07
	1998	18	83%	1.12	0.11	87	84%	1.31	0.04	105	83%	1.27	0.05
	1999	21	52%	0.55	0.02	93	73%	0.58	0.07	114	69%	0.57	0.06
	2000	14	64%	0.25	0.01	49	86%	0.86	0.06	63	81%	0.72	0.05
	2001	14	71%	0.54	0.04	46	78%	1.25	0.00	60	77%	1.08	0.01
	2002	16	81%	1.21	0.08	50	92%	1.36	0.08	66	89%	1.32	0.08
	2003	11	82%	0.93	0.00	48	98%	1.87	0.04	59	95%	1.69	0.04
	2004	11	82%	0.76	0.01	62	79%	0.86	0.01	73	79%	0.84	0.01
	2005	13	38%	0.21	0.04	47	85%	0.69	0.03	60	75%	0.59	0.03
	2006	4	50%	0.22	0.00	27	81%	1.38	0.02	31	77%	1.23	0.02
Yellow Perch	1996	44	52%	0.99	0.81	33	52%	0.76	0.60	77	52%	0.89	0.72
	1997	54	72%	1.08	0.94	21	72%	1.86	0.98	75	72%	1.30	0.96
	1998	59	69%	1.46	1.40	19	42%	0.74	0.29	78	63%	1.29	1.13
	1999	33	76%	1.75	1.28	16	43%	0.56	0.40	49	65%	1.36	0.99
	2000	33	79%	2.52	1.89	32	78%	2.72	1.68	65	78%	2.62	1.78
	2001	160	95%	4.35	3.76	36	69%	2.60	1.45	196	90%	4.03	3.34
	2002	307	90%	4.29	3.61	100	86%	3.00	2.35	407	89%	3.98	3.30
	2003	267	96%	6.23	5.28	66	88%	2.11	1.94	333	94%	5.42	4.62
	2004	389	97%	5.28	3.94	135	85%	2.58	1.71	524	94%	4.58	3.36
	2005	258	96%	4.28	2.93	141	84%	2.61	1.76	399	91%	3.69	2.52
	2006	132	95%	4.65	3.71	90	87%	4.02	2.88	222	91%	4.39	3.38
Steelhead Trout	1996	36	17%	0.05	0.03	11	18%	0.02	0.01	47	17%	0.04	0.03
	1997	45	22%	0.03	0.02	4	0%	0.00	0.00	49	20%	0.03	0.02
	1998	52	40%	0.12	0.08	6	33%	0.05	0.05	58	40%	0.11	0.08
	1999	39	44%	0.14	0.14	14	29%	0.07	0.06	53	40%	0.12	0.12
	2000	37	63%	0.58	0.37	3	67%	0.02	0.02	40	62%	0.54	0.34
	2001	18	50%	0.30	0.13	12	42%	0.09	0.05	30	47%	0.22	0.10
	2002	49	57%	0.18	0.12	13	38%	0.02	0.01	62	53%	0.14	0.10
	2003	33	48%	0.13	0.07	5	20%	0.00	0.00	38	45%	0.11	0.06
	2004	42	55%	0.16	0.10	16	38%	0.16	0.05	58	50%	0.16	0.08
	2005	15	53%	0.17	0.10	11	18%	0.02	0.02	26	38%	0.10	0.07
	2006	29	41%	0.08	0.07	5	20%	0.10	0.00	34	38%	0.08	0.06

Table S-4: Number of interviews (N), number of successful trips (% success), catch per angler hour (CUE), and harvest per angler hour (HUE) in central basin, eastern basin and total open lake waters of Lake Erie in Pennsylvania for walleye, smallmouth bass, yellow perch and steelhead for the 1996 – 2006 Lake Erie Boat Angler Surveys.

		Central Basin			East Basin			Total Open Lake		
		Effort (hours)	Catch	Harvest	Effort (hours)	Catch	Harvest	Effort (hours)	Catch	Harvest
Walleye	**1996**	208,246	86,954	72,040	107,910	21,256	17,047	316,157	108,210	89,087
	1997	241,237	78,259	72,357	147,258	17,394	16,325	388,494	95,653	88,682
	1998	297,680	132,603	105,627	92,067	24,458	19,187	389,747	157,060	124,814
	1999	295,418	79,663	76,512	101,091	12,805	12,526	396,509	92,467	89,038
	2000	140,822	63,670	58,310	103,294	20,740	19,205	244,116	84,410	77,515
	2001	158,025	45,339	40,618	83,221	16,702	12,072	241,246	62,041	52,690
	2002	87,626	17,808	16,979	42,818	5,377	5,102	130,444	23,186	22,081
	2003	110,840	40,885	32,767	48,199	11,403	10,814	159,039	52,289	43,581
	2004	72,855	24,180	17,791	15,592	3,195	2,177	88,446	27,375	19,969
	2005	64,452	43,075	13,928	44,680	20,183	6,388	109,132	63,258	20,316
	2006	166,986	129,849	118,353	71,781	32,881	30,289	238,767	162,730	148,642
Smallmouth Bass	**1996**	49,430	81,846	5,561	97,688	159,000	16,002	147,118	240,846	21,562
	1997	45,148	69,079	10,621	106,611	168,455	12,825	151,760	237,534	23,445
	1998	12,054	20,357	2,767	60,480	101,001	4,613	72,534	121,358	7,381
	1999	18,907	20,070	1,091	103,028	74,285	14,195	121,934	94,356	15,285
	2000	19,968	8,649	913	65,906	43,857	4,089	85,874	52,506	5,003
	2001	9,057	9,066	974	33,780	71,331	1,508	42,837	80,397	2,483
	2002	6,279	18,912	1,133	26,189	43,292	1,507	32,468	62,205	2,640
	2003	6,527	8,453	518	42,890	70,547	2,245	49,417	79,000	2,763
	2004	5,278	11,304	259	36,822	32,510	648	42,100	43,814	907
	2005	6,031	3,007	202	34,126	30,611	1,315	40,157	33,618	1,517
	2006	1,699	2,261	121	19,028	23,321	544	20,727	25,582	665
Yellow Perch	**1996**	18,148	15,284	12,433	10,299	10,546	7,667	28,448	25,830	20,100
	1997	43,377	32,955	28,891	13,744	13,492	5,516	57,121	46,447	34,408
	1998	30,613	37,929	35,174	4,084	4,370	1,779	34,697	42,299	36,953
	1999	28,486	53,804	35,542	13,623	8,564	5,566	42,109	62,368	41,108
	2000	48,561	117,633	80,050	21,146	52,190	32,852	69,707	169,824	112,902
	2001	77,686	240,921	202,913	12,450	30,140	19,093	90,136	271,061	222,006
	2002	123,287	374,252	308,057	61,735	126,775	104,023	185,022	501,027	412,080
	2003	138,721	393,484	336,396	49,048	85,196	77,654	187,770	478,681	414,050
	2004	175,596	623,783	461,538	62,639	126,348	90,514	238,235	750,132	552,052
	2005	127,462	377,101	259,416	70,921	166,784	101,343	198,382	543,885	360,759
	2006	60,612	230,267	181,697	60,612	230,267	181,697	107,886	400,013	300,748
Steelhead Trout	**1996**	20,071	951	381	3,826	574	499	23,897	1,525	880
	1997	41,039	2,642	1,721	4,123	110	0	45,163	2,752	1,721
	1998	36,634	6,227	4,348	2,879	947	947	39,513	7,174	5,295
	1999	45,070	8,332	6,306	21,870	1,613	1,095	66,939	9,945	7,401
	2000	27,071	14,368	9,880	1,504	1,301	1,131	28,575	15,669	11,011
	2001	9,382	8,760	4,193	21,989	4,612	2,859	31,371	13,372	7,053
	2002	21,601	7,409	4,552	8,218	1,416	676	29,819	8,825	5,229
	2003	13,079	3,321	1,430	2,456	884	287	15,535	4,205	1,717
	2004	14,605	3,146	2,041	4,546	1,743	615	19,151	4,889	2,657
	2005	6,346	2,520	1,761	2,415	598	422	8,761	3,118	2,183
	2006	15,683	3,597	2,044	900	158	-	16,583	3,755	2,044

Table S-5: Estimated angler effort (angler hours), catch and harvest in central basin, eastern basin and total open lake waters of Lake Erie in Pennsylvania for walleye, smallmouth bass, yellow perch and steelhead for the 1996 – 2006 Lake Erie Boat Angler Surveys.

yearclass	age	percent	number	mean length	mean weight
2003	3	7.1%	21,313	195	98
2002	4	10.2%	30,785	218	136
2001	5	25.2%	75,779	245	190
2000	6	15.0%	44,994	251	203
1999	7	16.5%	49,730	272	267
1998	8	18.9%	56,834	274	262
1997	9	3.9%	11,840	285	306
1996	10	2.4%	7,104	304	353
1995	11	0.8%	2,368	295	278
			300,748	CPE - 2.77	
mean age	6.12				

CPE in number per angler-hr.

Table S- 6: Yellow perch 2006 sport harvest numbers, year class structure for Lake Erie fishery

Yearclass	Harvest N	Age	CPE	Percent	MEAN LENGTH,mm	MEAN WEIGHT,kg
2003	86,212	3	0.33	58%	440	0.818
2002	28,242	4	0.11	19%	461	0.930
2001	11,891	5	0.05	8%	474	1.100
2000	8,919	6	0.03	6%	520	1.441
1999	4,459	7	0.01	3%	538	1.513
1998	4,459	8	0.01	3%	611	2.161
1997	1,486	9	0.006	1%	620	2.045
1996	2,973	10	0.011	2%	683	3.768
1995	2,973	11	0.011	2%	576	2.011
	148,642		0.57			
	mean age-	4.1				

CPE in number per angler-hr.

Table S-7: 2006 walleye sport harvest numbers, age structure and harvest rates for Pennsylvania waters, Lake Erie.

Hatchery	Species / Strain	Stocking Location	Number Stocked	
Fairview FCS	Steelhead Trout	Conneaut Creek	75,000	
Fairview / Linesville FCS	Steelhead Trout	Raccoon Creek	49,007	
Linesville FCS	Steelhead Trout	Crooked Creek	58,800	
Tionesta FCS	Steelhead Trout	Elk Creek	264,590	
Fairview FCS	Steelhead Trout	Godfrey Run	39,200	
Fairview FCS	Steelhead Trout	Trout Run	83,500	
Tionesta FCS	Steelhead Trout	Walnut Creek	205,792	
Fairview FCS	Steelhead Trout	Presque Isle Bay	58,800	
Tionesta FCS	Steelhead Trout	Fourmile Creek	14,700	
Tionesta FCS	Steelhead Trout	Sevenmile Creek	19,600	
Fairview FCS	Steelhead Trout	Twelvemile Creek	39,200	
Tionesta FCS	Steelhead Trout	Twentymile Creek	156,794	
			1,064,983	**Total Steelhead**
Corry FCS	Brown Trout	Cascade Creek	1,400	
Corry FCS	Brown Trout	Conneaut Creek	2,470	
Corry FCS	Brown Trout	Crooked Creek	2,400	
Corry FCS	Brown Trout	East Basin Pond	950	
Corry FCS	Brown Trout	Elk Creek	14,000	
Corry FCS	Brown Trout	West Basin Pond	950	
			22,170	**Total Brown Trout**

Table S-8: Lake Erie drainage Steelhead Trout and Brown Trout stocking numbers in 2006 by Pennsylvania Fish and Boat Commission hatchery, by location.

Cooperative Hatchery	Species / Strain	Stocking Location	Number Stocked	
Albion Sportsman's Club / 3-C-U	Brook Trout	Mallory Run	1,090	
Albion Sportsman's Club	Brook Trout	Conneaut Creek / West Branch	700	
Albion Sportsman's Club	Brook Trout	Elk Creek	200	
Albion Sportsman's Club	Brook Trout	Taylor Run	550	
Albion Sportsman's Club	Brook Trout	Temple Creek	3,000	
			5,540	**Total Brook Trout**
3-C-U	Brown Trout	Lake Erie	7,300	
Albion Sportsman's Club	Brown Trout	Conneaut Creek / West Branch	750	
Albion Sportsman's Club	Brown Trout	Elk Creek	250	
Albion Sportsman's Club	Brown Trout	Mallory Run	650	
Albion Sportsman's Club	Brown Trout	Taylor Run	550	
Albion Sportsman's Club	Brown Trout	Temple Creek	2,815	
			12,315	**Total Brown Trout**
Albion Sportsman's Club	Golden Rainbow Trout	Conneaut Creek / West Branch	50	
Albion Sportsman's Club	Golden Rainbow Trout	Elk Creek	50	
Albion Sportsman's Club	Golden Rainbow Trout	Mallory Run	150	
Albion Sportsman's Club	Golden Rainbow Trout	Taylor Run	25	
Albion Sportsman's Club	Golden Rainbow Trout	Temple Creek	500	
			775	**Total Golden Rainbow Trout**
3-C-U	Steelhead	Bear Creek	9,500	
3-C-U	Steelhead	Elk Creek	13,000	
Wesleyville Sportsman's Club	Steelhead	Fourmile Creek	1,090	
3-C-U	Steelhead	Godfrey Run	52,900	
Wesleyville Sportsman's club	Steelhead	Sevenmile Creek	1,660	
3-C-U	Steelhead	Trout Run	40,000	
Wesleyville Sportsman's Club	Steelhead	Twelvemile Creek	1,070	
3-C-U	Steelhead	Walnut Creek	21,000	
			140,220	**Total Steelhead Trout**
SONS of Lake Erie	Walleye Fry	Presque Isle Bay	800,000	
SONS of Lake Erie	Yellow Perch Fry	Presque Isle Bay	1,000,000	

Table S-9: Stocking by Sportsman's Cooperative Nurseries in 2006, by hatchery, by species, by location.

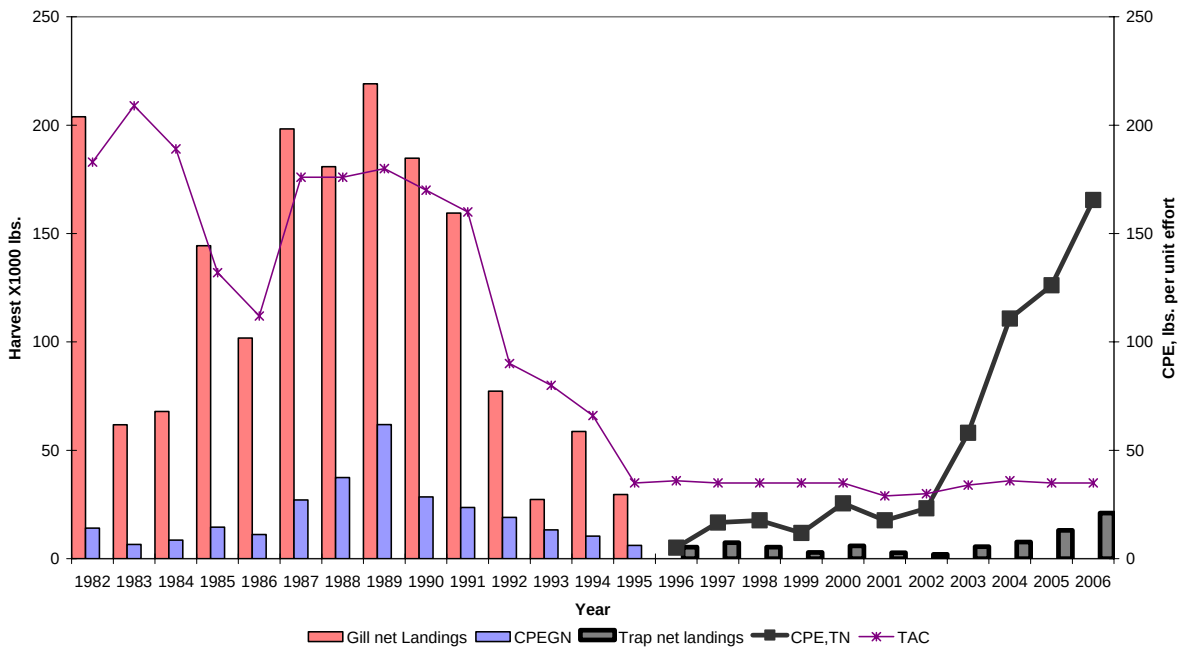

Figure C-1: Yellow perch commercial landings 1982 - 2006, Pennsylvania waters of Lake Erie.

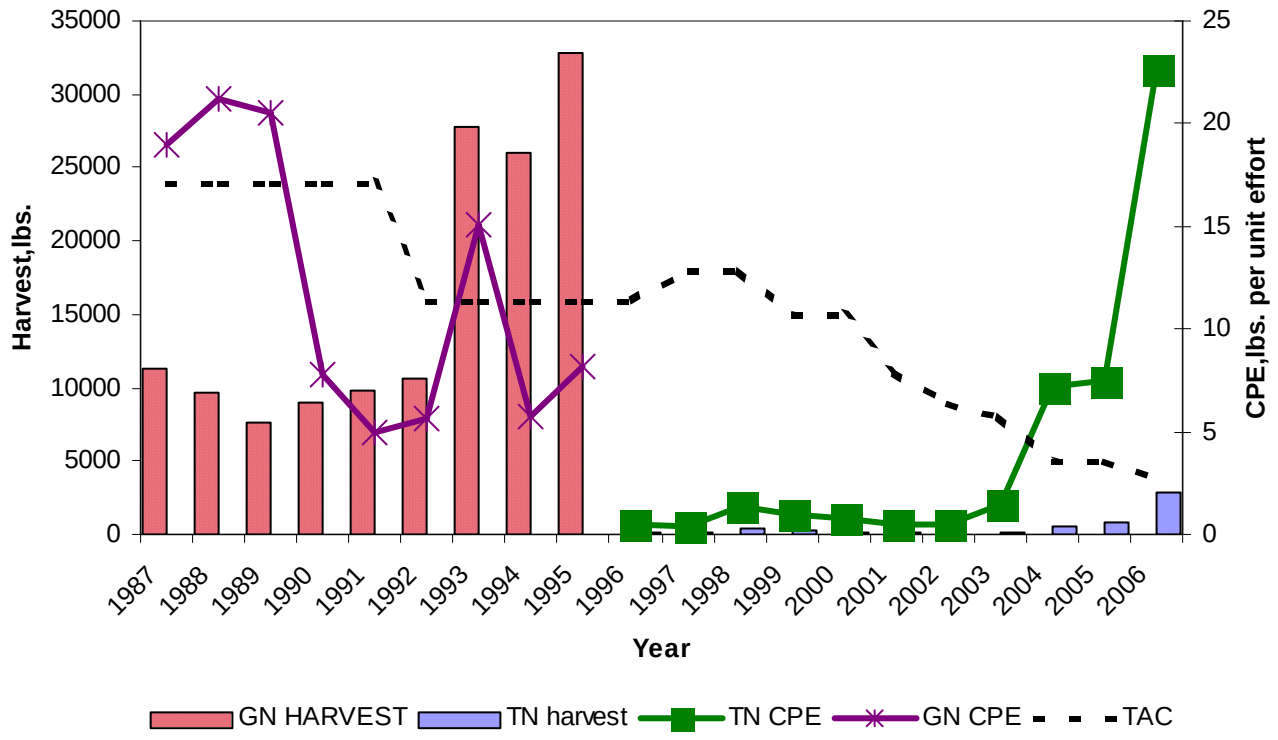

Figure C-2: Commercial walleye landings 1987 - 2006, Pennsylvania waters of Lake Erie.

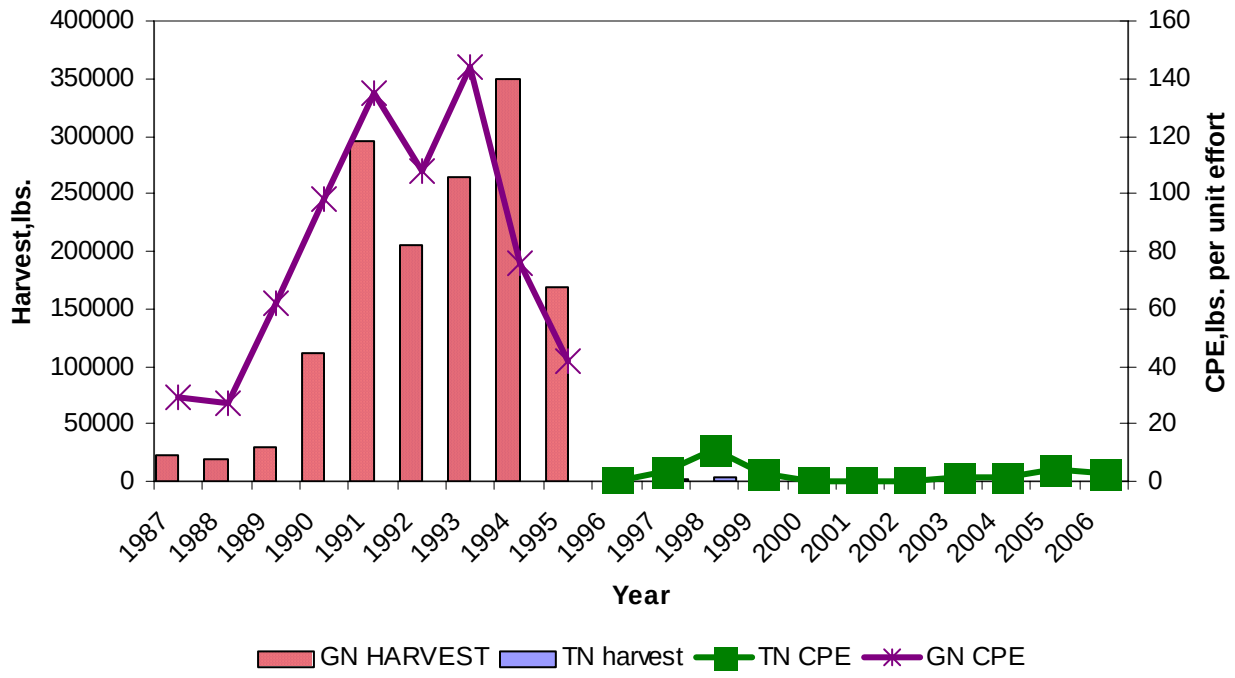

Figure C-3: Commercial whitefish landings 1987 - 2006, Pennsylvania waters of Lake Erie.

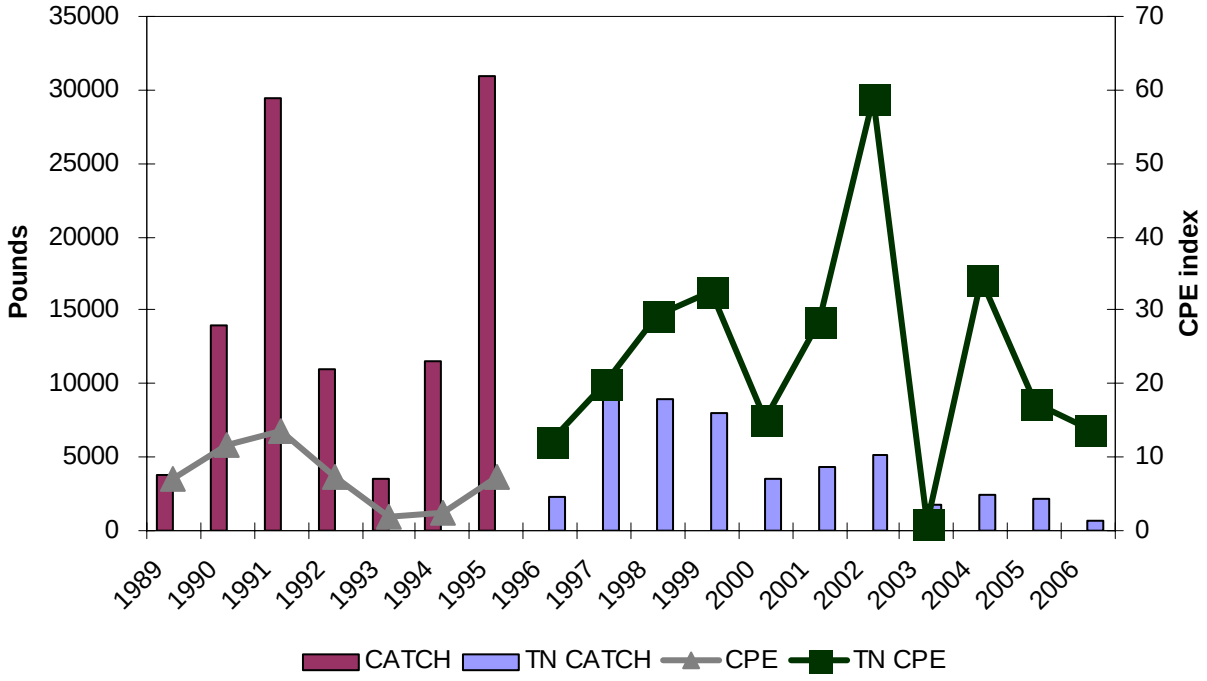

Figure C-4: Commercial burbot landings 1989 - 2006, Pennsylvania waters of Lake Erie.

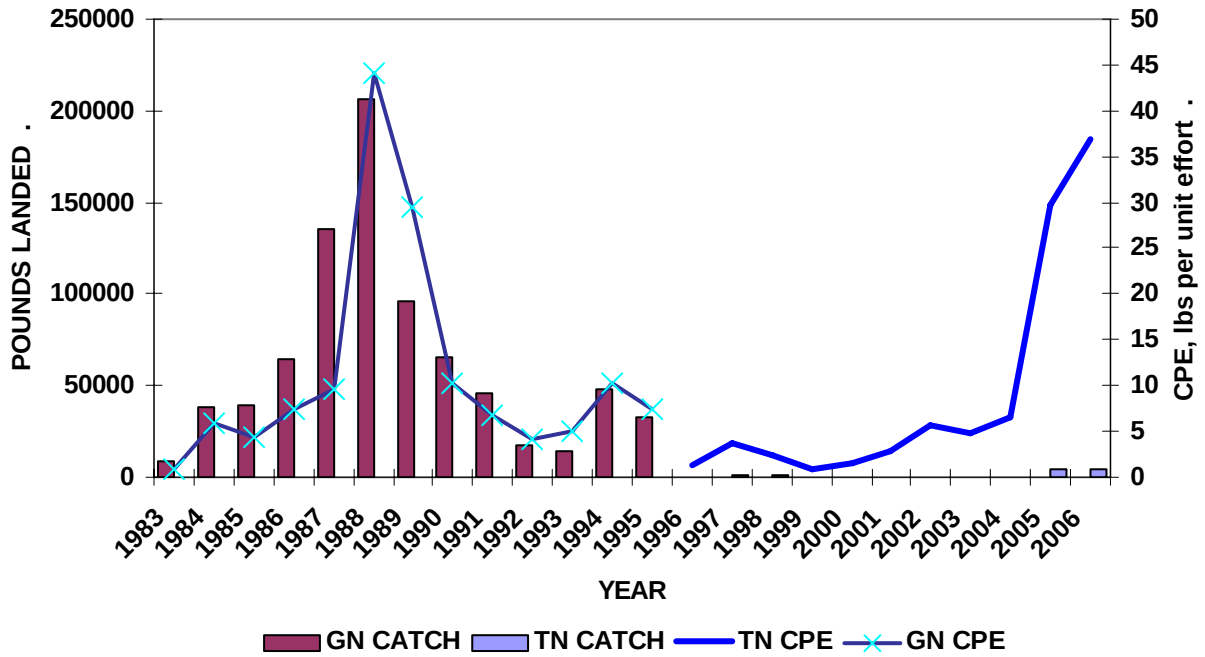

Figure C-5: Commercial white perch landings 1983 – 2006, Pennsylvania waters of Lake Erie.

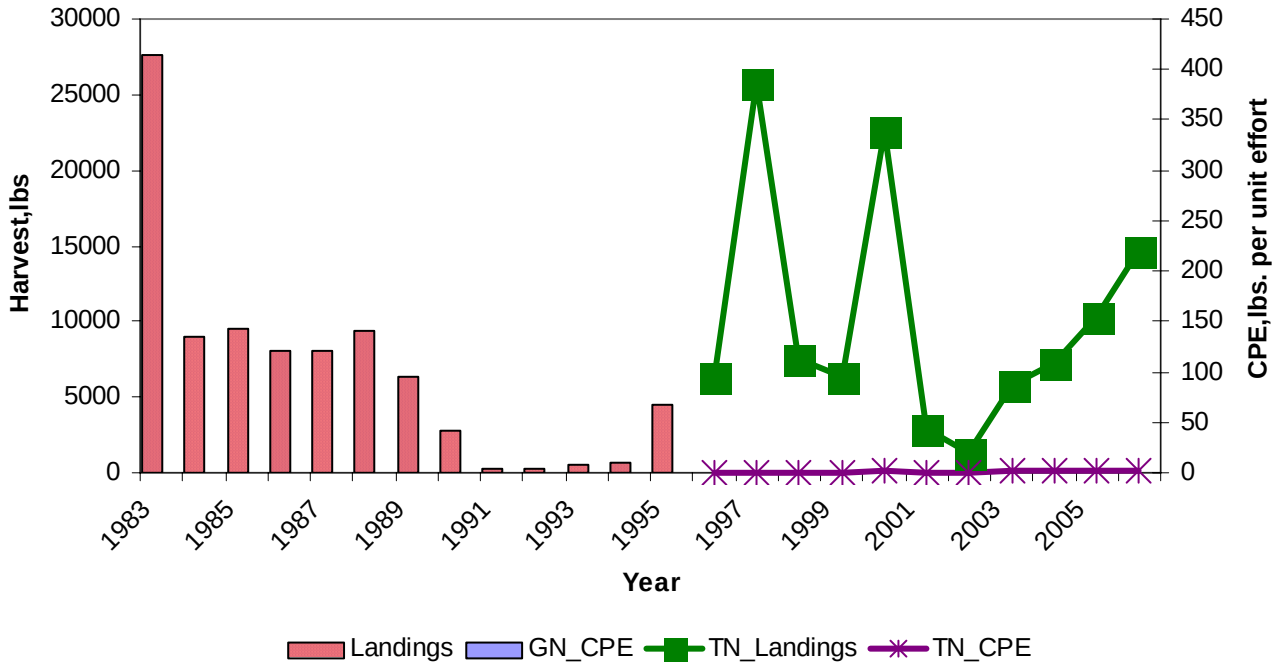

Figure C-6: Commercial white bass landings 1983 – 2006, Pennsylvania waters of Lake Erie.

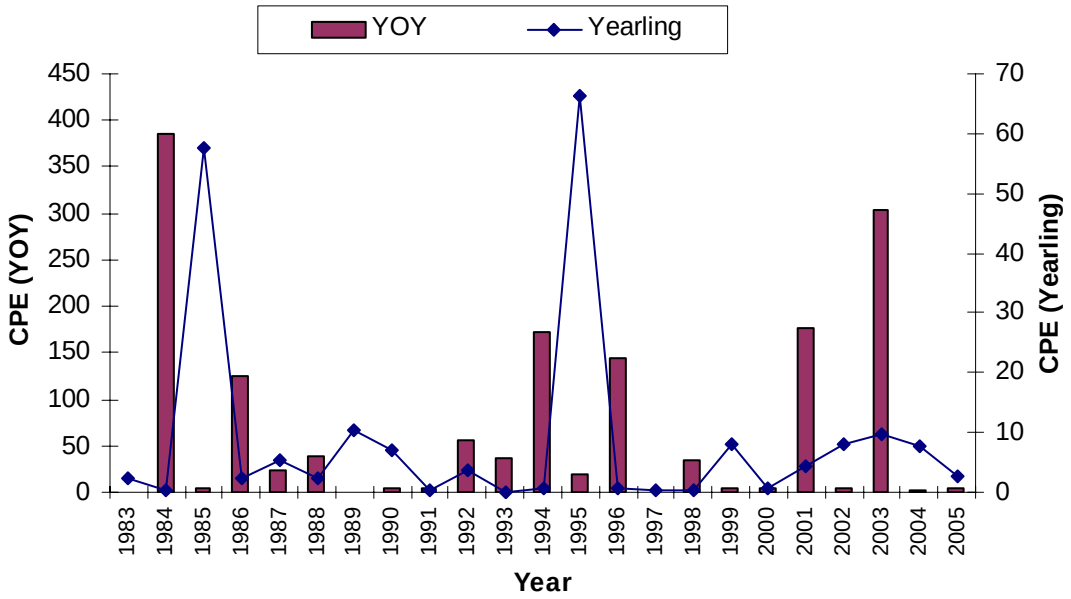

Figure A-1: Yellow Perch fall trawl indices for young-of-the-year (YOY) and yearling age groups. No trawling was conducted in Fall 2006.

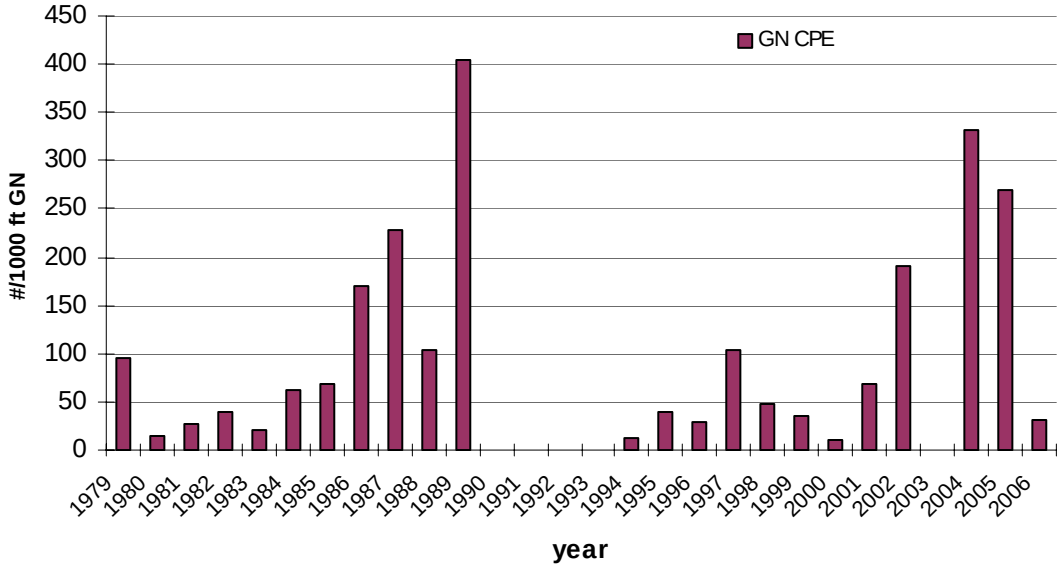

Figure A-2: Yellow perch abundance indices for assessment gill net surveys.

Survey year	Numbers per ten-minute tow						
	Age Group						
	2	3	4	5	6	7	8+
1982	16.9	10.6	1.7	0.4	0.0	0.0	0.0
1983	3.7	0.7	0.7	0.2	0.1	0.1	0.0
1984	4.6	5.8	1.5	0.5	0.0	0.0	0.0
1985	1.8	29.2	6.4	0.9	1.4	0.0	0.0
1986	26.7	0.5	2.1	1.0	0.8	0.5	0.0
1987	0.6	12.8	1.6	0.3	0.1	0.0	0.0
1988	4.0	2.9	11.6	1.1	1.6	0.2	0.2
1989	2.9	6.4	1.4	5.8	1.1	0.9	0.2
1990	1.6	0.6	2.3	0.3	1.6	0.1	0.1
1991	0.5	1.5	1.0	4.5	1.1	2.0	0.0
1992	1.4	2.0	3.6	1.7	1.7	1.4	2.2
1993	2.0	4.0	0.0	1.5	2.5	2.5	1.5
1994	0.8	0.1	0.0	0.0	0.0	0.0	0.0
1995	3.6	3.4	1.2	0.2	0.0	0.2	0.4
1996	0.1	0.0	0.5	0.2	0.3	0.2	0.3
1997	0.0	3.5	3.5	2.5	1.5	1.0	0.5
1998	0.1	0.1	0.2	0.4	0.2	0.0	0.1
1999	2.3	2.5	2.4	0.9	0.5	0.2	0.6
2000	0.1	0.1	0.1	0.0	0.0	0.0	0.0
2001	1.2	1.2	5.8	4.0	1.6	1.4	2.5
2002	0.9	1.1	0.7	0.5	0.6	0.0	0.0
2003	5.6	2.5	0.5	0.5	0.5	0.5	0.6
2004	0.8	2.5	1.0	0.4	2.1	0.3	1.0
2005	2.1	0.2	1.1	0.1	0.1	0.4	0.2

Table A-7: Fall trawl Assessment values for Lake Erie yellow perch stock; trawl mean CPE. No trawling was conducted in Fall 2006

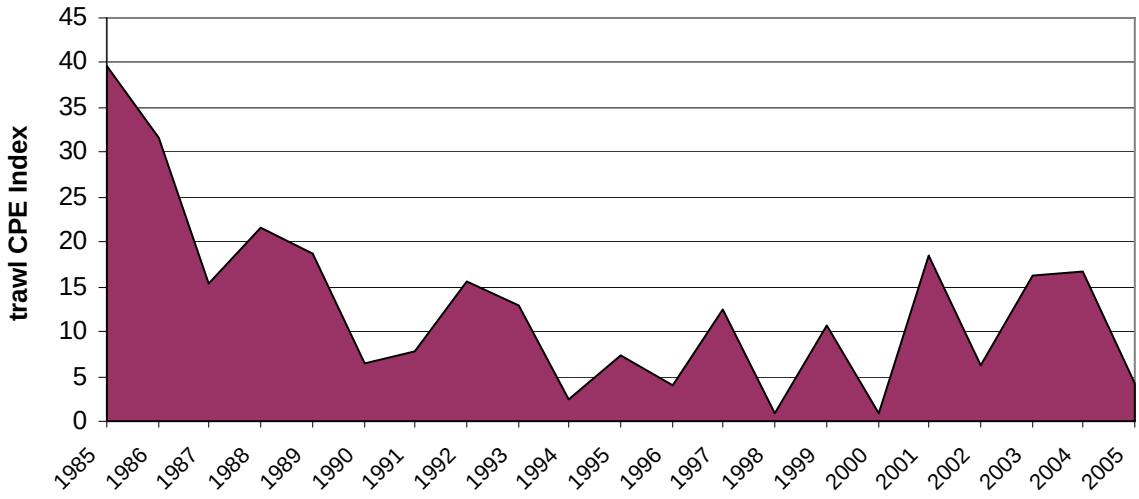

Figure A-3: Yellow Perch indices of abundance for age 2 and older fall stock. No trawling was conducted in Fall 2006

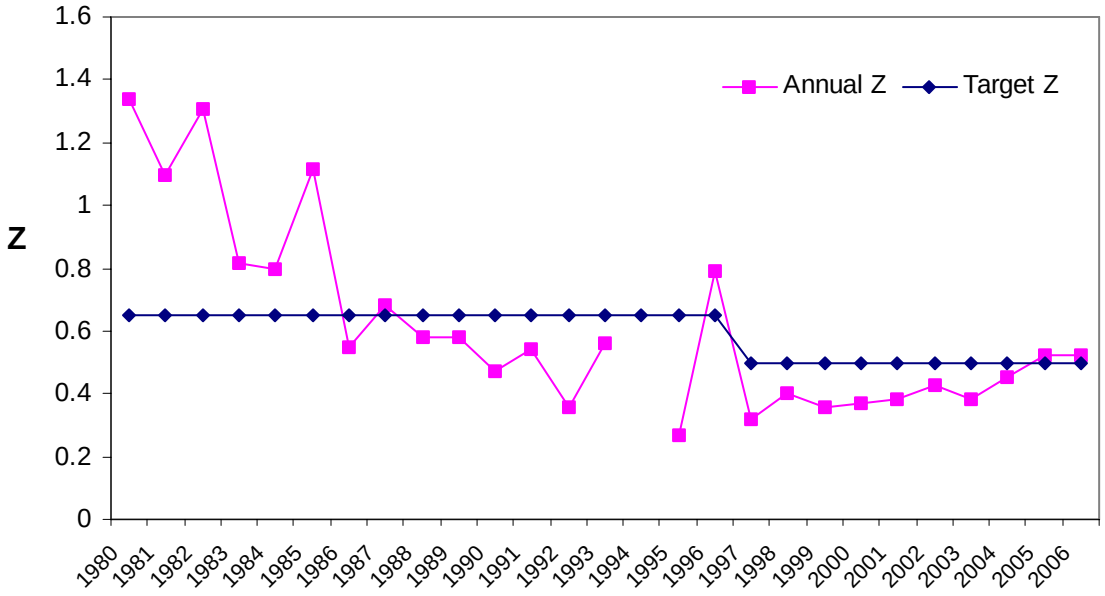

Figure A-4: Trends in yellow perch mortality.

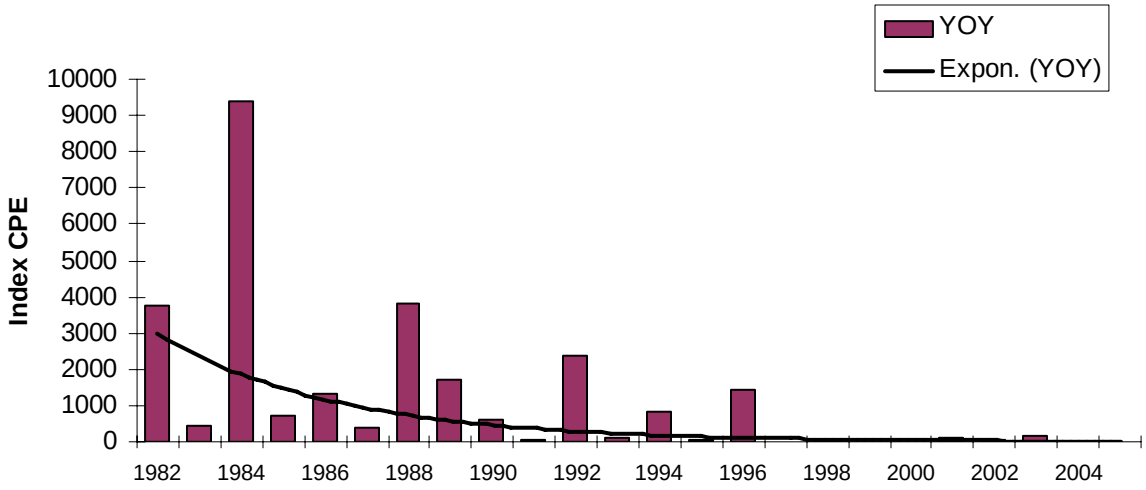

Figure A-5: Indices and trends in smelt abundance.

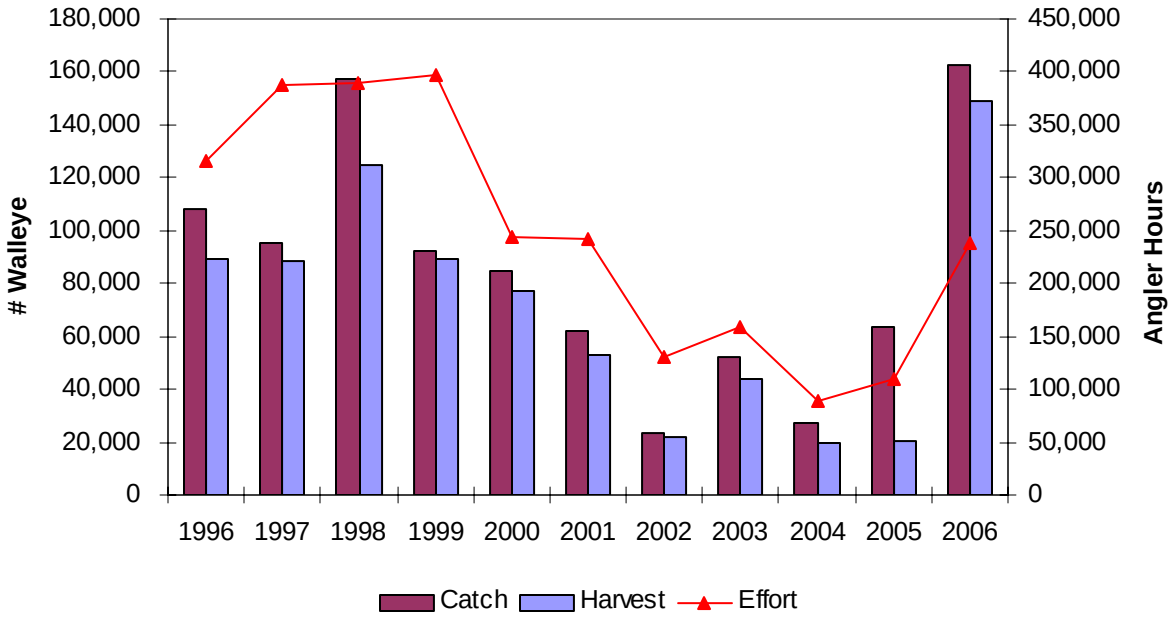

Figure S-1: Estimated walleye angler effort (hours), catch and harvest for the 1996 – 2006 Lake Erie Boat Angler Surveys.

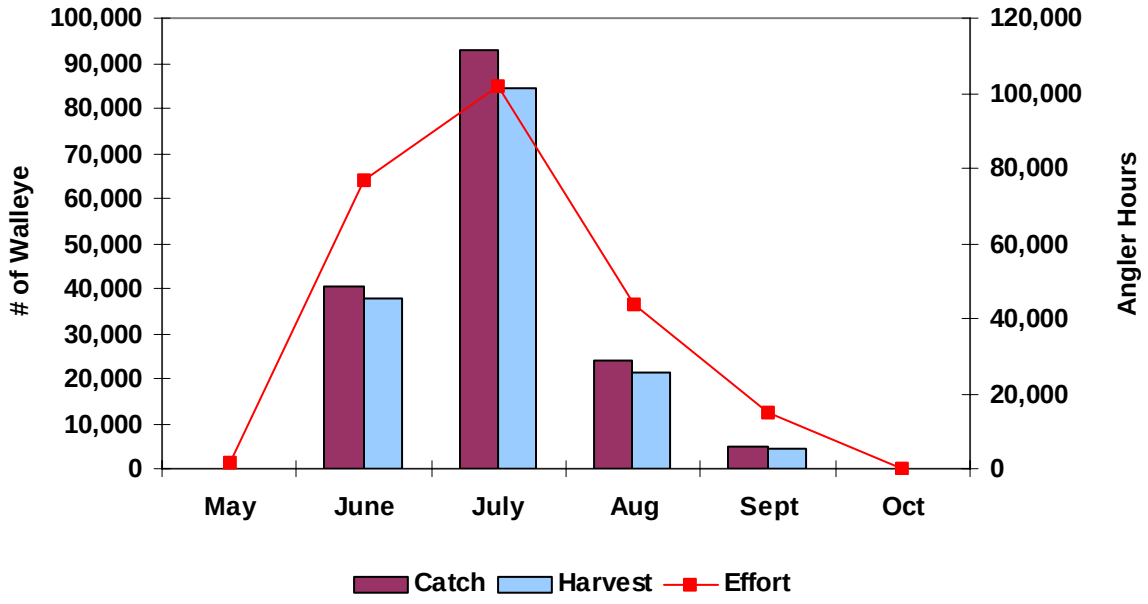

Figure S-2: Monthly estimated walleye angler effort (hours), catch and harvest for the 2006 Lake Erie Boat Angler Survey.

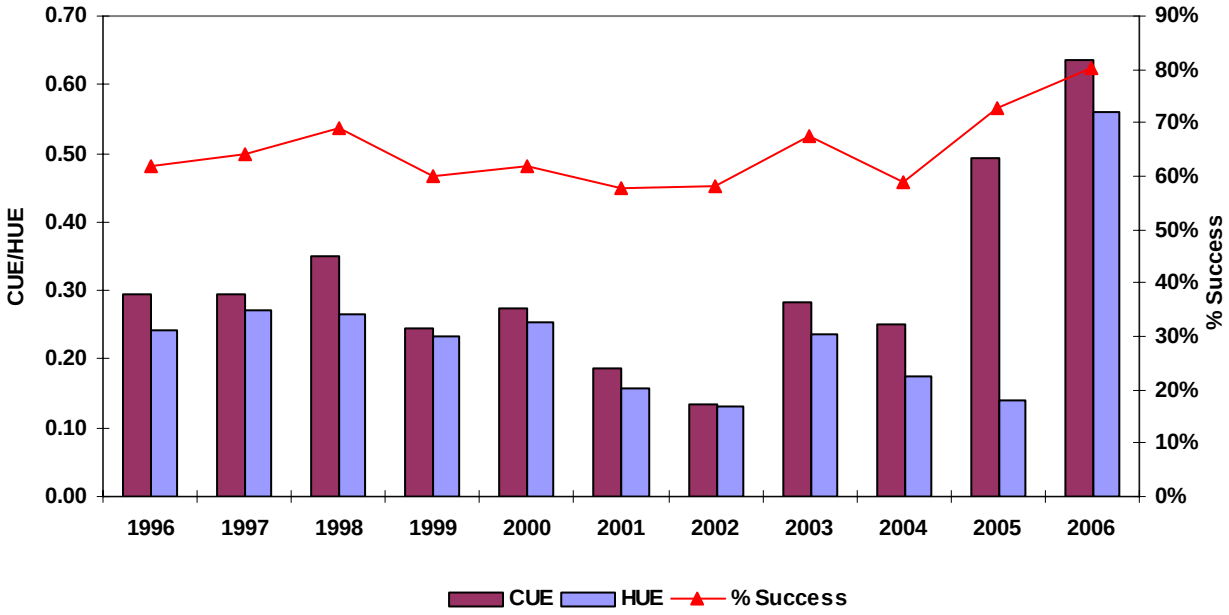

Figure S-3: Walleye angler % success, catch per angler hour (CUE) and harvest per angler hour (HUE) for the 1996 – 2006 Lake Erie Boat Angler Surveys.

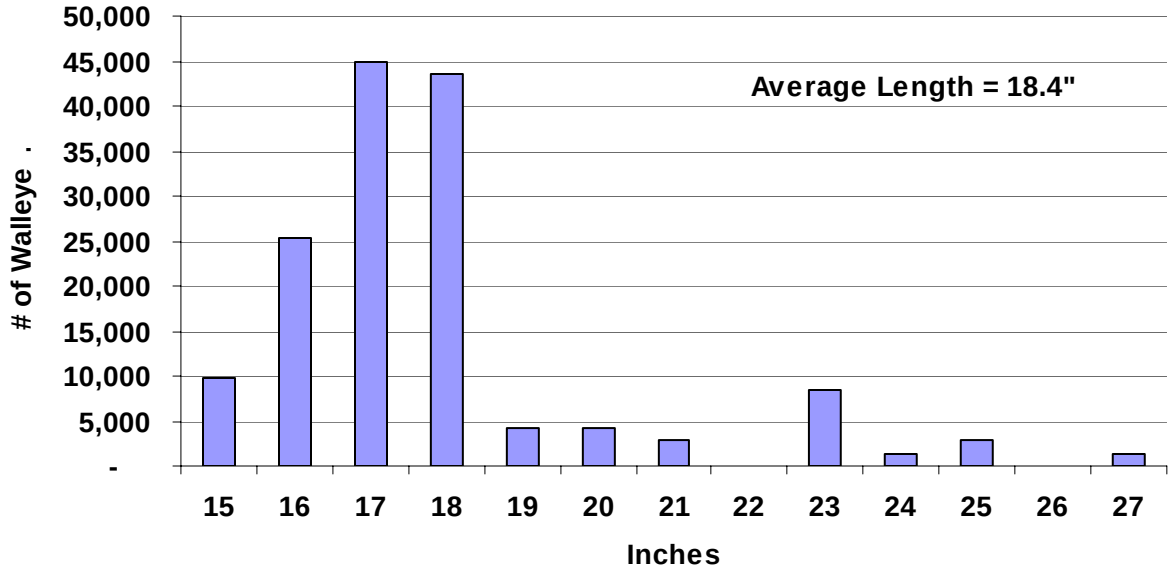

Figure S-4: Length frequency of walleye harvested by open lake boat anglers in 2006.

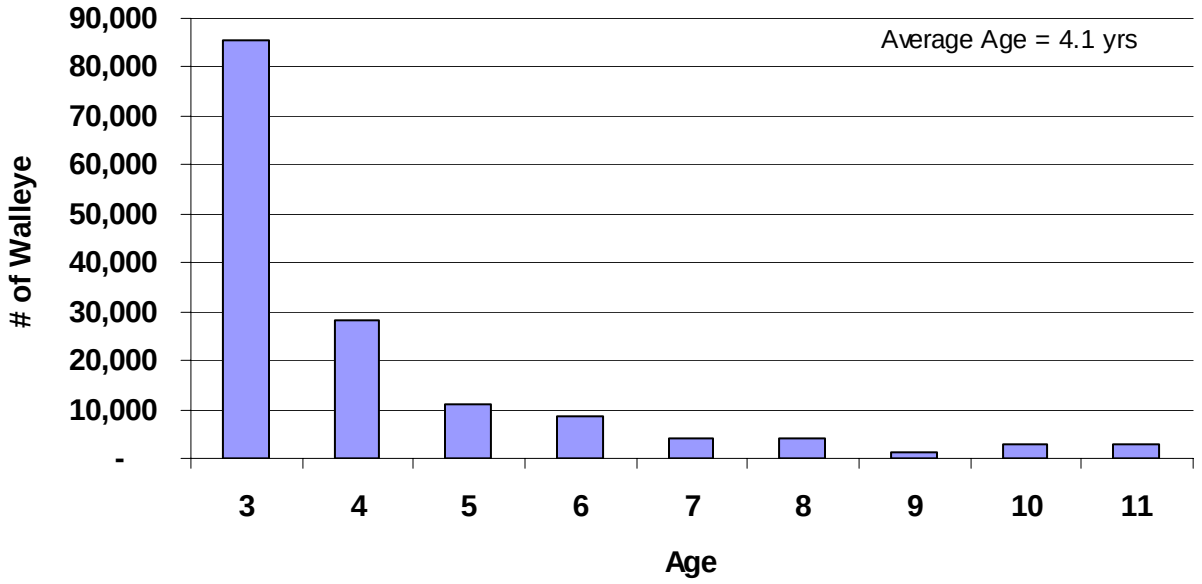

Figure S-5: Age frequency of walleye harvested by open lake boat anglers in 2006.

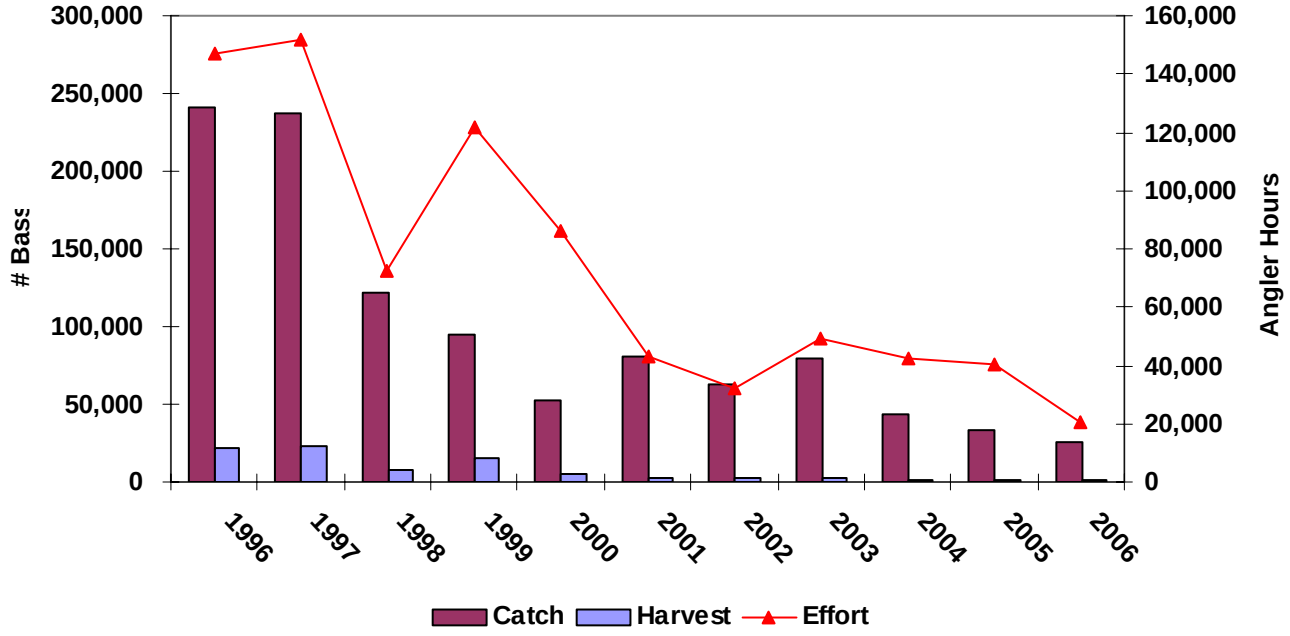

Figure S-6: Estimated smallmouth bass angler effort (hours), catch and harvest for the 1996 – 2006 Lake Erie Boat Angler Surveys.

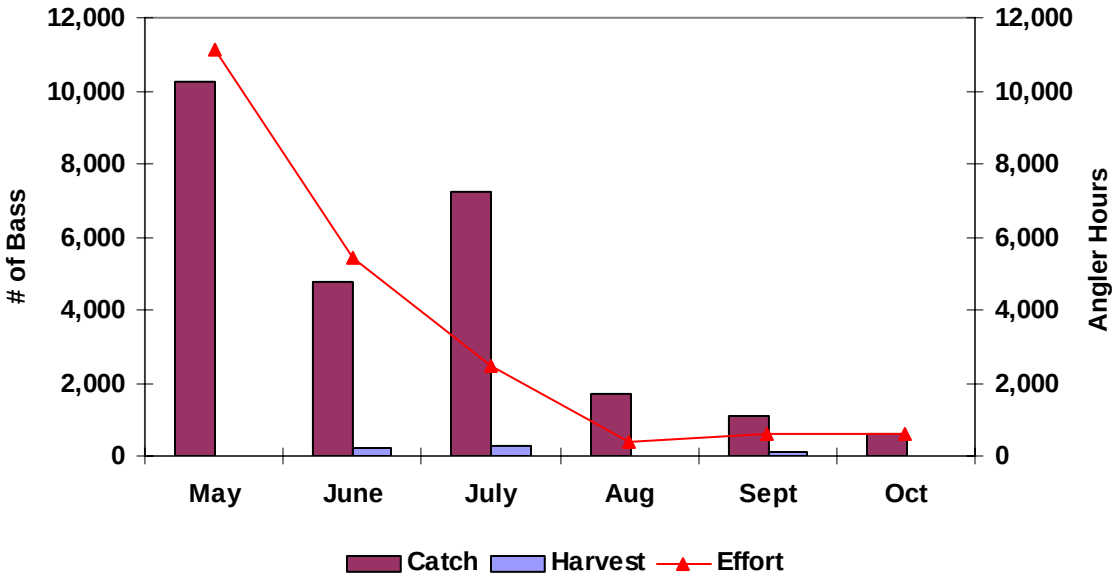

Figure S7: Monthly estimated smallmouth bass angler effort, catch and harvest for the 2006 Lake Erie Boat Angler Survey.

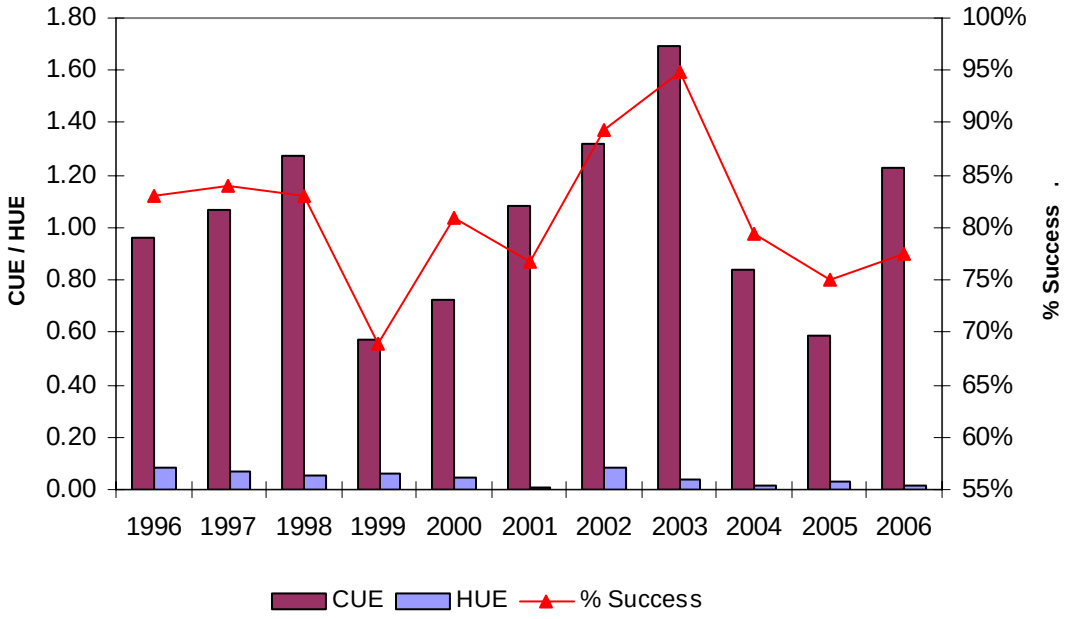

Figure S-8: Smallmouth bass angler % success, catch per angler hour (CUE) and harvest per angler hour (HUE) for the 1996 – 2006 Lake Erie Boat Angler Surveys.

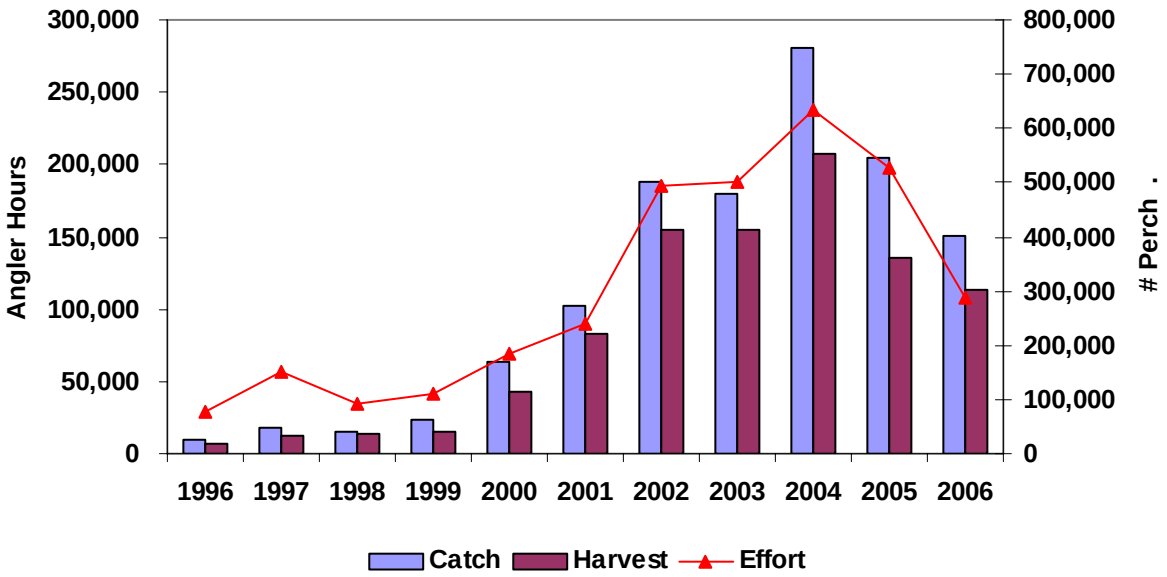

Figure S-9: Estimated yellow perch angler effort (hours), catch and harvest for the 1996 – 2006 Lake Erie Boat Angler Surveys.

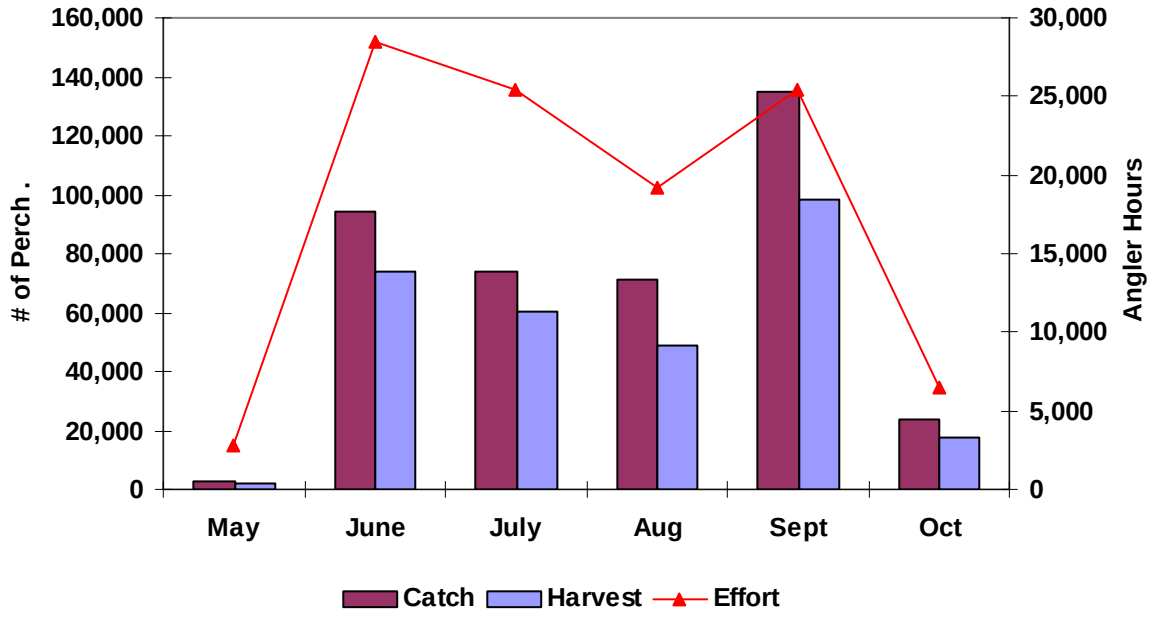

Figure S-10: Monthly estimated yellow perch angler effort, catch and harvest for the 2006 Lake Erie Boat Angler Survey.

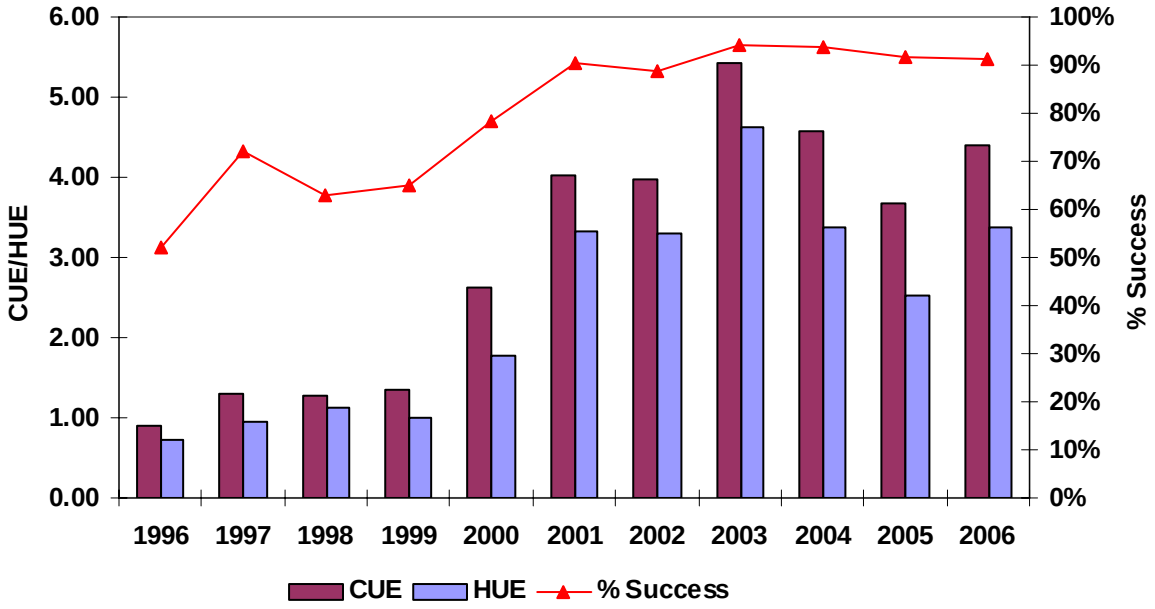

Figure S-11: Yellow perch angler % success, catch per angler hour (CUE) and harvest per angler hour (HUE) for the 1996 – 2006 Lake Erie Boat Angler Surveys.

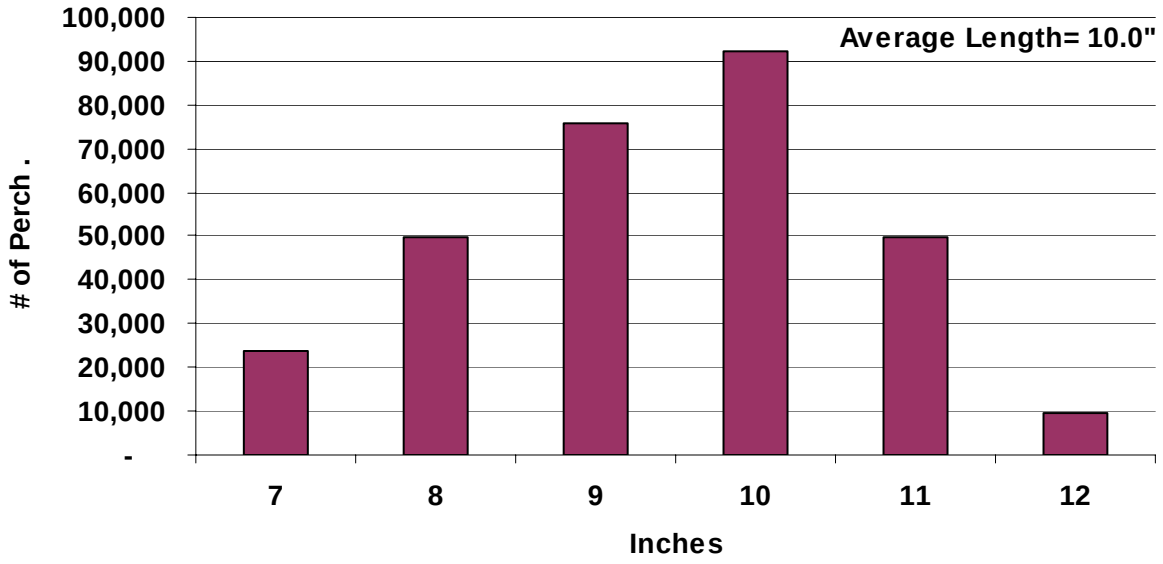

Figure S-12: Length frequency of yellow perch harvested by open lake boat anglers in 2006.

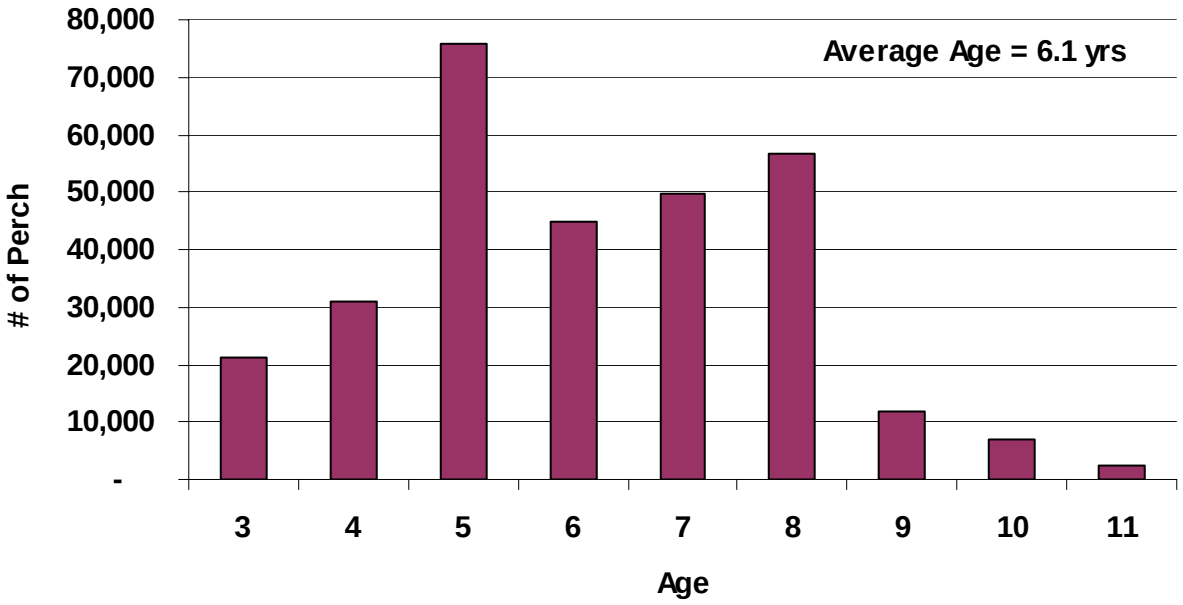

Figure S-13: Age frequency of yellow perch harvested by open lake boat anglers in 2006

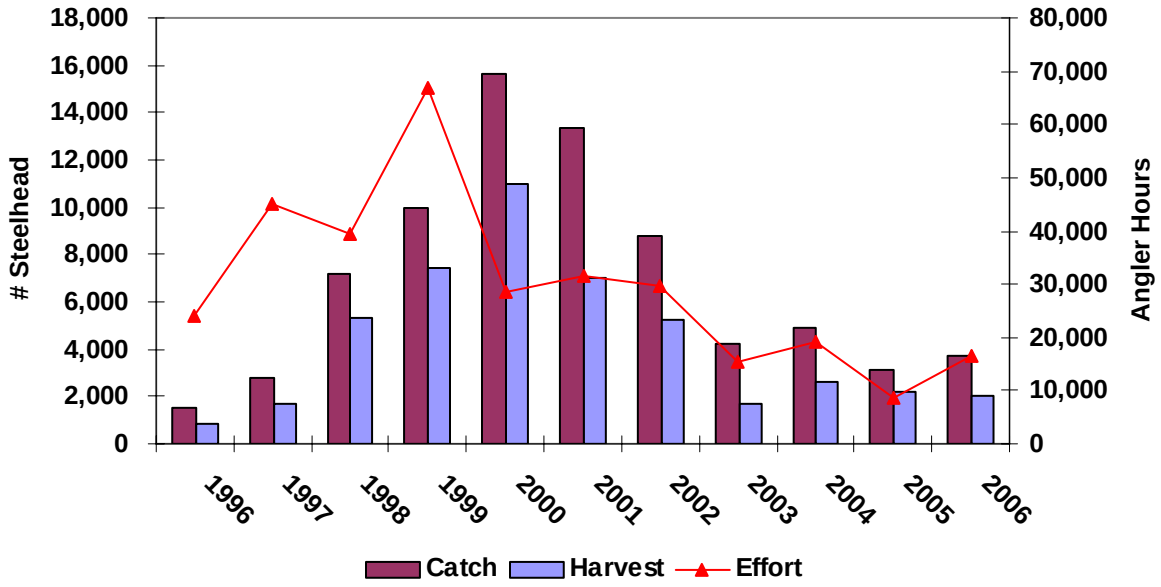

Figure S-14: Estimated steelhead angler effort (hours), catch and harvest for the 1996 – 2006 Lake Erie Boat Angler Surveys.

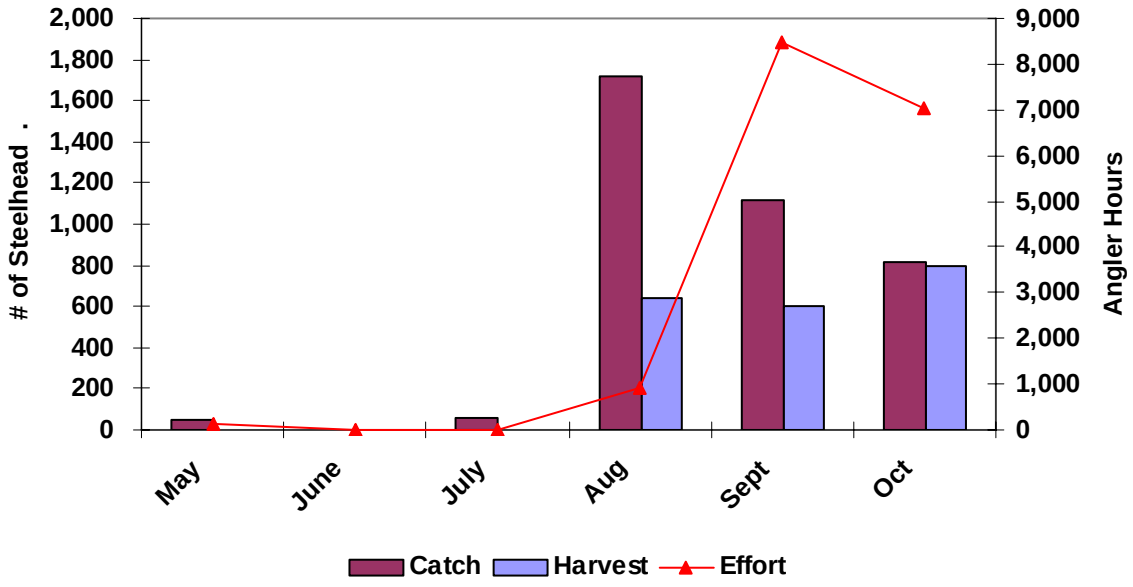

Figure S-15: Monthly estimated steelhead angler effort, catch and harvest for the 2006 Lake Erie Boat Angler Survey.

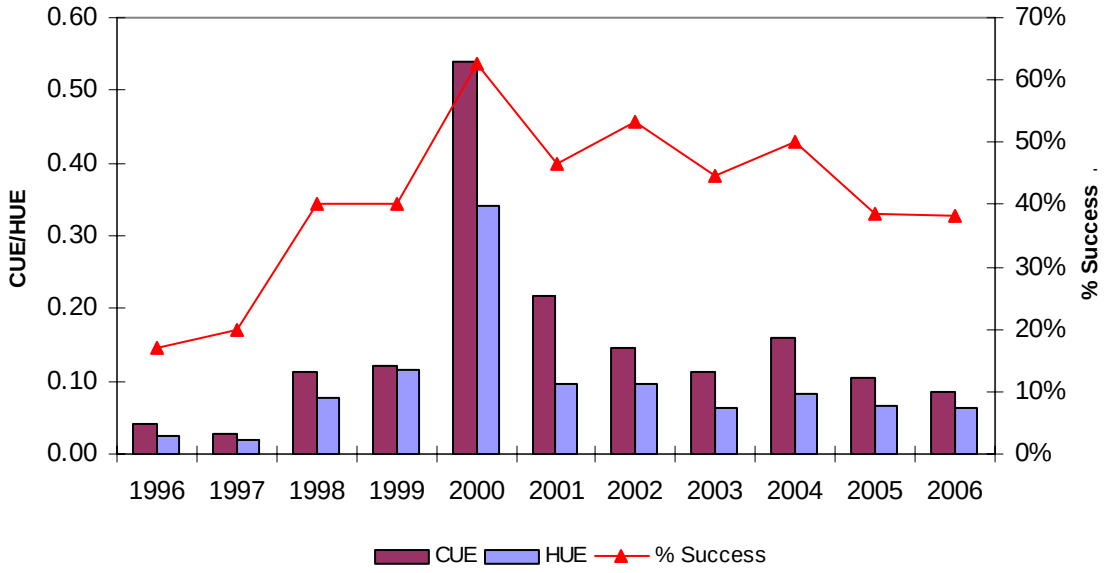

Figure S-16: steelhead angler % success, catch per angler hour (CUE) and harvest per angler hour (HUE) for the 1996 – 2006 Lake Erie Boat Angler Surveys.

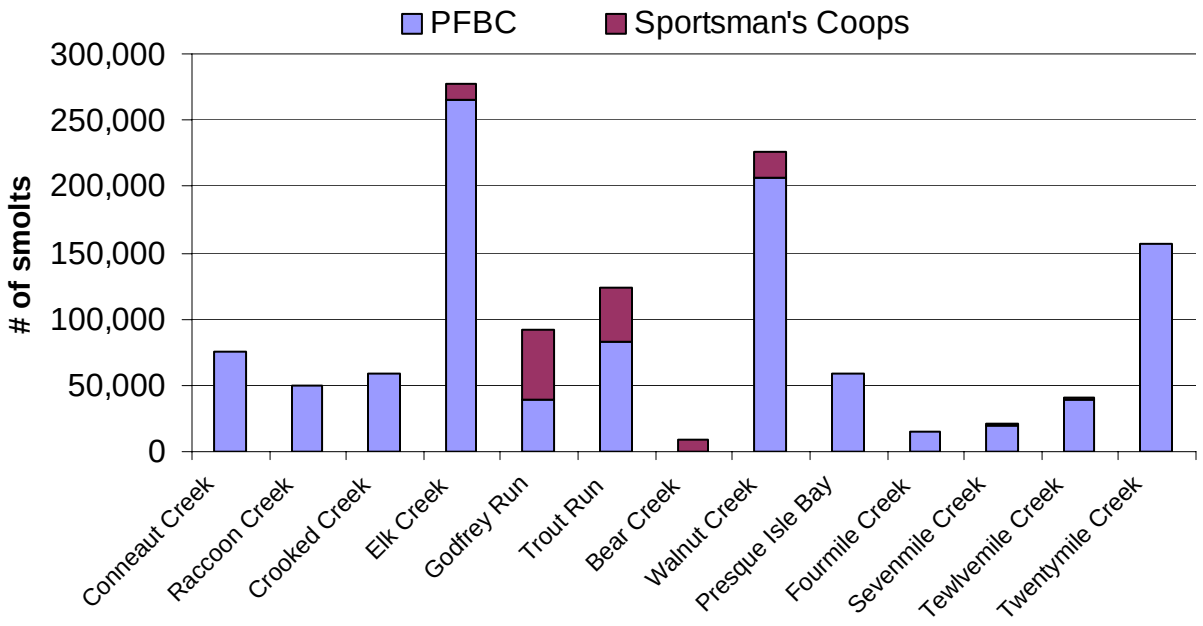

Figure S-17: Total (PFBC + Sportsman's Cooperative Nurseries) steelhead stocking by location in 2006.

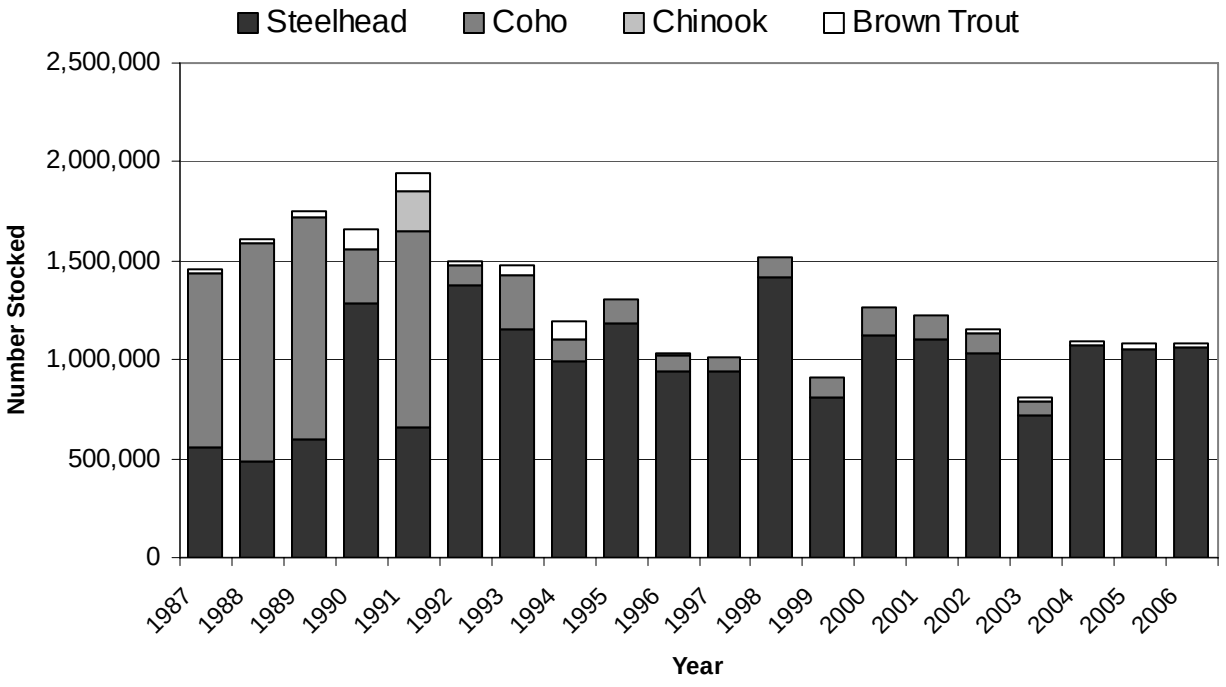

Figure S-18: Total anadromous trout and salmon stocking for Steelhead trout, Coho salmon, Chinook salmon and brown trout, 1987 – 2006. These numbers represent only PFBC hatchery plants.