Senator Daniel Inouye

Acknowledgments

A special thanks goes to Sen. Daniel Inouye (D-Hawaii), former Chairman of the Senate Committee on Indian Affairs, who led the way towards a cooperative endeavor which would benefit the Wisconsin fishery and all user groups. His leadership was instrumental in uniting tribal, state and federal resource managers and gaining the necessary Congressional support for the ongoing joint fishery assessments in northern Wisconsin's lakes.

The monumental tasks of the Joint Assessment Steering Committee have required the continuing participation and commitment of its members over the past thirteen years. Planning, coordination and implementation of the assessment as well as data analysis has truly been a positive cooperative effort, thanks to the representatives from the federal, state, and tribal governments who have made the committee successful.

Members of the Joint Assessment Steering Committee include:

- U.S. Bureau of Indian Affairs - the federal agency which administers the appropriation and chairs the committee

- U.S. Fish and Wildlife Service - the lead federal agency for technical fishery matters

- Wisconsin Department of Natural Resources - the state agency responsible for managing the Wisconsin fishery and administering state funds committed for the purpose

- Great Lakes Indian Fish & Wildlife Commission - the lead tribal agency on technical fishery matters

- Chippewa tribal governments:
  Bad River Band of Lake Superior Chippewa
  Lac Courte Oreilles Band of Lake Superior Chippewa
  Lac du Flambeau Band of Lake Superior Chippewa
  Red Cliff Band of Lake Superior Chippewa
  St. Croix Band of Lake Superior Chippewa
  Sokaogon Chippewa Community of Wisconsin (Mole Lake Band)

Special Acknowledgment to:

Robert Jackson, Bureau of Indian Affairs; Sue Erickson, Neil Kmiecik, Rick Madsen, Lynn Plucinski, Joe Dan Rose, Great Lakes Indian Fish and Wildlife Commission; and Scott Hansen, Patrick Schmalz, Wisconsin Department of Natural Resources for preparation of this report.

Fishery Status Update in the Wisconsin Treaty Ceded Waters

U.S. Department of the Interior
Bureau of Indian Affairs, Minneapolis, MN

Fourth Edition, 2007

Introduction

Walleye and Wisconsin have become almost synonymous over the years as the state's numerous lakes attract walleye fishermen and women from around the nation to enjoy its walleye wonderland. However, the continuing pressure on the walleye population has led to concerns expressed by both fishery managers and fishing enthusiasts regarding the status of the walleye population in Wisconsin.

As Chippewa tribal members began to exercise their reaffirmed treaty rights to take walleye off-reservation, questions regarding the status of the walleye population in the ceded territory became an issue in Wisconsin, causing considerable social unrest and controversy. The need for more complete information on the status of the walleye resource and the impact of angling and spearing on it became apparent.

A response to the situation came in 1990 through the establishment of a joint federal/tribal/state committee, known as the Joint Assessment Steering Committee, which received a $300,000 federal appropriation to provide an assessment of the status of northern Wisconsin's fishery. The State of Wisconsin also initiated a five year program in 1990, contributing $1.2 million annually to a randomized lake survey design to monitor fish populations and angler harvest. The State of Wisconsin has also funded the continuation of a long-term study on Escanaba Lake.

Specifically, the committee was directed to determine whether the tribal off-reservation treaty harvest was depleting the walleye population and to provide information on the current health of the walleye fishery in the ceded territory. In a 1991 report, ***Casting Light Upon the Waters***, the committee recorded its findings. The answers to the questions at hand were: "NO! - Chippewa spearing has not harmed the resource; and YES! - the fish population in the ceded territory is healthy."

However, the committee also noted that because of extensive pressure on the fishery, including the combined effects of state-licensed angling, tribal spearing, and degradation of habitat, the walleye population needed to be carefully monitored and managed. Continued assessment and development of a more comprehensive, current database on walleye in northern Wisconsin lakes was clearly needed.

Annual population surveys continue to be performed in cooperation by the Great Lakes Indian Fish and Wildlife Commission, the U.S. Fish and Wildlife Service, the Wisconsin Department of Natural Resources, the Sokaogon (Mole Lake) Band of Chippewa, and the St. Croix Band of Chippewa. Electrofishing boats and crews have been sent out each spring and fall by each of these agencies, and the collected data has been shared in order to jointly provide and build a more comprehensive understanding of the walleye population in hundreds of Wisconsin lakes.

In 1992, 1995, 1999, and 2003, update reports on the work of the Joint Assessment Committee were published and released in order to keep the public apprised of the activities and findings of the joint effort. Similarly, the following report is meant to share with citizens the activities and findings of the committee and cooperating agencies over the last seventeen years since its inception. The report is a product of a successful, cooperative, resource management endeavor.

By sharing the time-consuming burden of data collection, the cooperating agencies have together been able to build a considerable data bank on northern Wisconsin's walleyes, which will help take the wonder out of walleye management and keep the wonder in the fishing experiences of citizens today and in the future.

Electroshocking crew conducting assessments on a northern Wisconsin lake.

Assessing the Fishery

"Preparation of the report ***(Casting Light Upon the Waters, 1991)*** *yielded one very clear conclusion: The fishery of the ceded territory faces increasing pressures from all factors. The managers must continue to monitor populations and harvest levels, and evaluate assessment methods and management strategies. The pressures on the fishery require a continuation and further expansion of the joint monitoring and assessment work."*

excerpted from
Casting Light Upon the Waters,
1991 report

In 1991 the Joint Assessment Committee prepared a list of recommendations based on their initial assessment. These recommendations encompassed a wide variety of needs to effectively accomplish a cooperative assessment and management of the fishery in northern Wisconsin waters.

They included specific recommendations in the following areas:

1) Assessment and harvest monitoring
2) Research
3) Public involvement
4) Public education and information
5) Interagency cooperation/communication
6) Resource planning
7) Enforcement and compliance, and
8) Workloads/staffing.

In the subsequent years, the committee has identified goals within each of these areas of recommendation and proceeded to develop the prescribed plan.

Over the last seventeen years, emphasis has been placed on accomplishing the extensive population assessments and harvest monitoring which provide the information critical to a thorough understanding of the fishery. The data collected to date is only the beginning in the development of a long term portrait of trends in the fishery. The following report describes assessment activities and reports findings through graphs in an attempt to provide readers with a glimpse of the emerging picture of the fishery.

Population Estimates With the beginning of off–reservation spearing in 1985, the number of mark–recapture population estimates being done every year has grown (Figure 1). The methods used to sample and mark fish during spring and to calculate the estimates have been jointly developed and agreed on by the Technical Working Group (TWG) biologists. Mark–recapture estimates are labor intensive and relatively costly, averaging about $2,000–4,000 each for lakes under 10,000 acres, but the data produced are more accurate than other types of alternative information (e.g. relative abundance) that might be collected.

For the past seventeen years, estimating the number of adult walleye in lakes has been an objective of spring assessments. The overall goal has been to conduct at least one such estimate in every mixed fishery (tribal-state) lake. Of the 266 speared lakes where walleye have been harvested, 234 (88%) have had at least one adult population estimate (Figure 2).

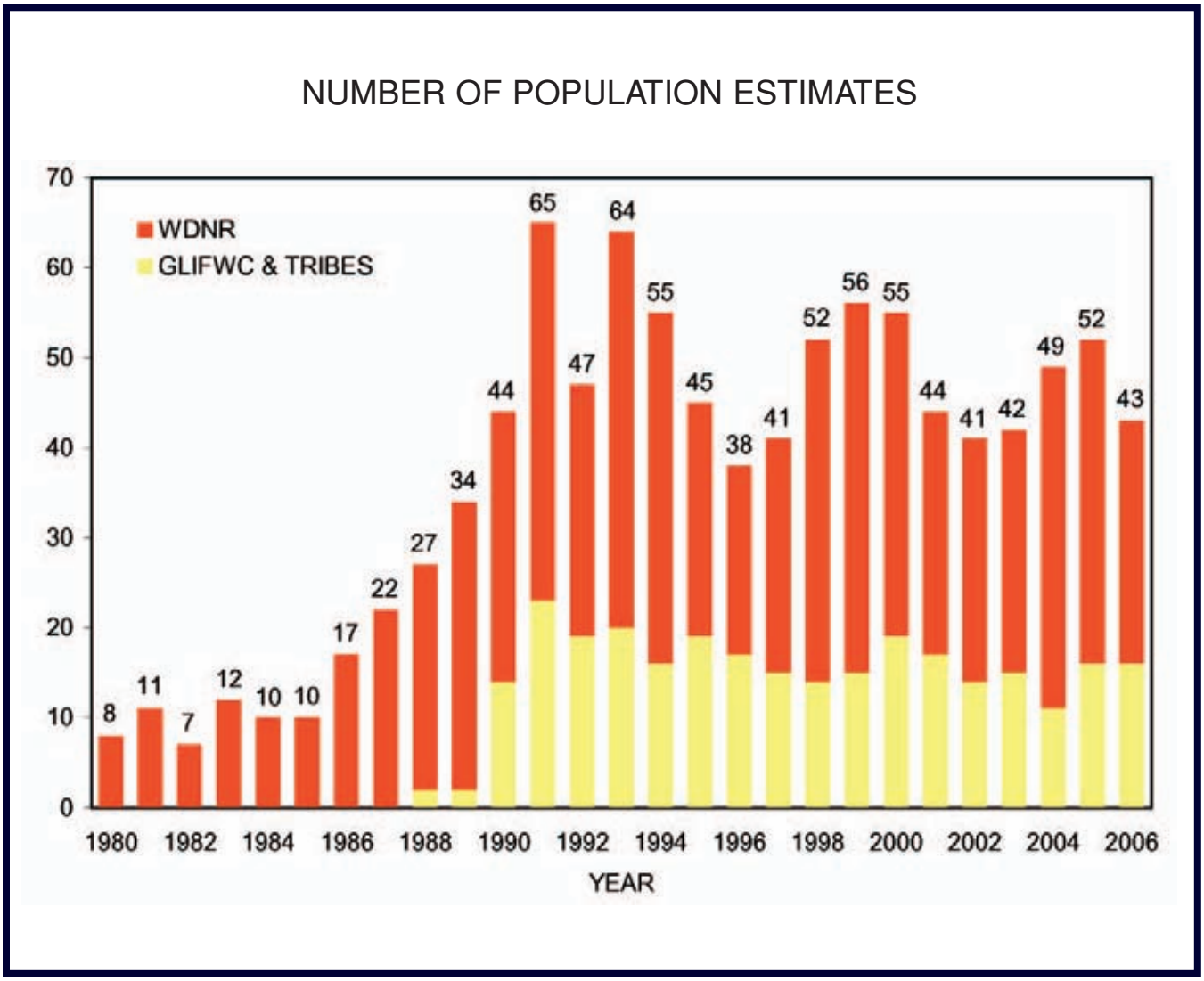


Figure 1. Number of adult walleye population estimates conducted in ceded territory lakes by GLIFWC,tribes, and WDNR from 1980-2006.

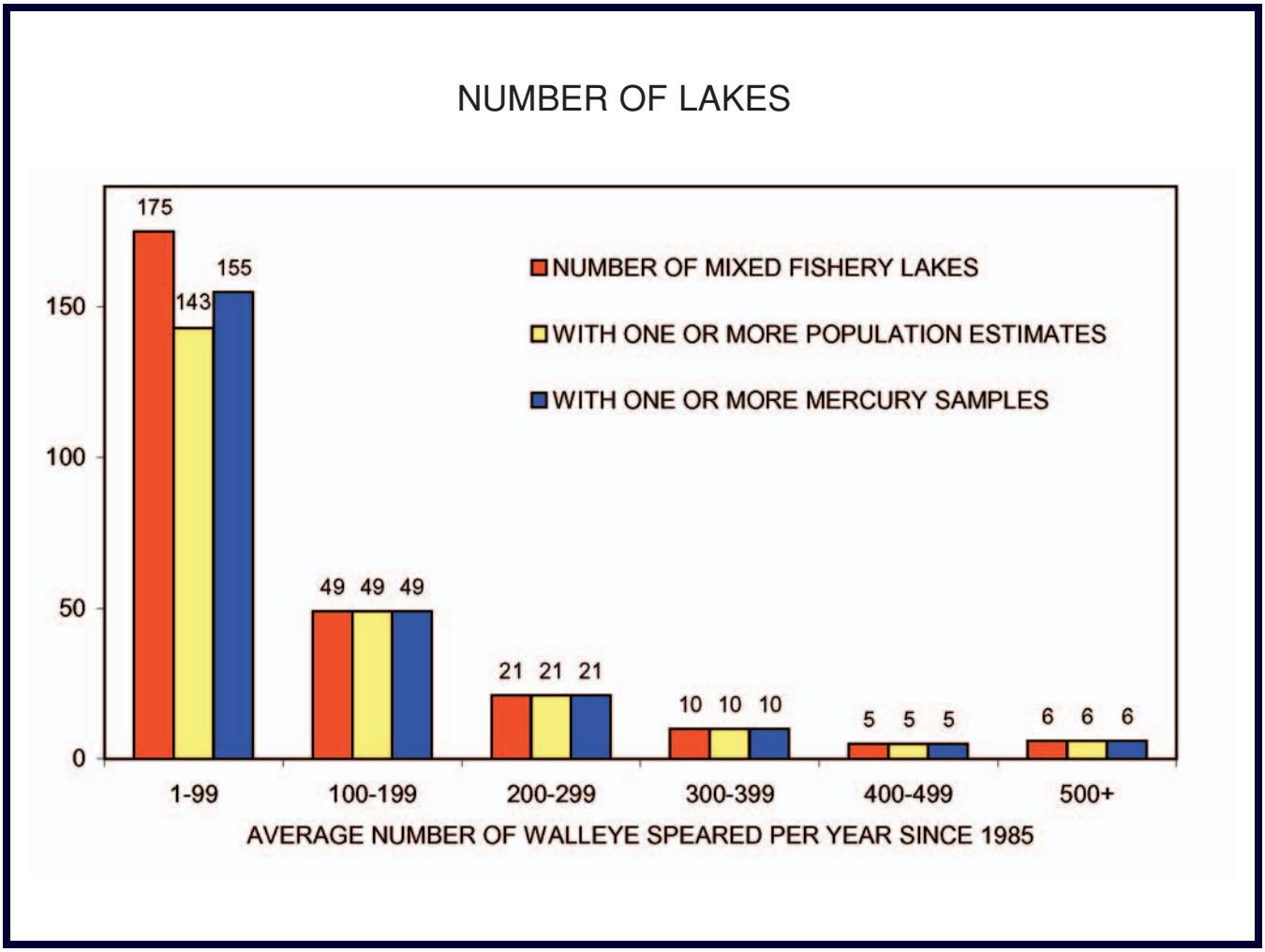


Figure 2. Of the 266 lakes that have been speared since 1985, this graph shows the number where an adult walleye population estimate or mercury testing has occurred.

Because only Escanaba Lake in Vilas County had more than two consecutive year estimates, annual estimates were begun in 1990 in four other lakes to study long–term trends in the number of adult walleye (Figure 3). These four lakes are all over 500 acres. To determine whether walleye abundance patterns and other information are different for smaller lakes, annual population estimates in another five lakes (two of which are on an alternating schedule), all under 500 acres, were begun in 1995.

For the ten lakes where trend information is developing, population estimates have generally exhibited both relatively large increases and large decreases from one year to the next. For the four large mixed fishery lakes, the estimates remained relatively stable (less than a 20% shift either way) in thirty-two cases, increased by 20% or more in sixteen cases, and decreased by 20% or more in nineteen cases. For Escanaba Lake, estimates of abundance have been relatively stable in three instances, increased in five cases, and decreased by more than 20% in nine cases. For the small mixed fishery lakes, population estimates remained relatively stable in eighteen cases, increased in thirteen cases, and decreased in nine cases.

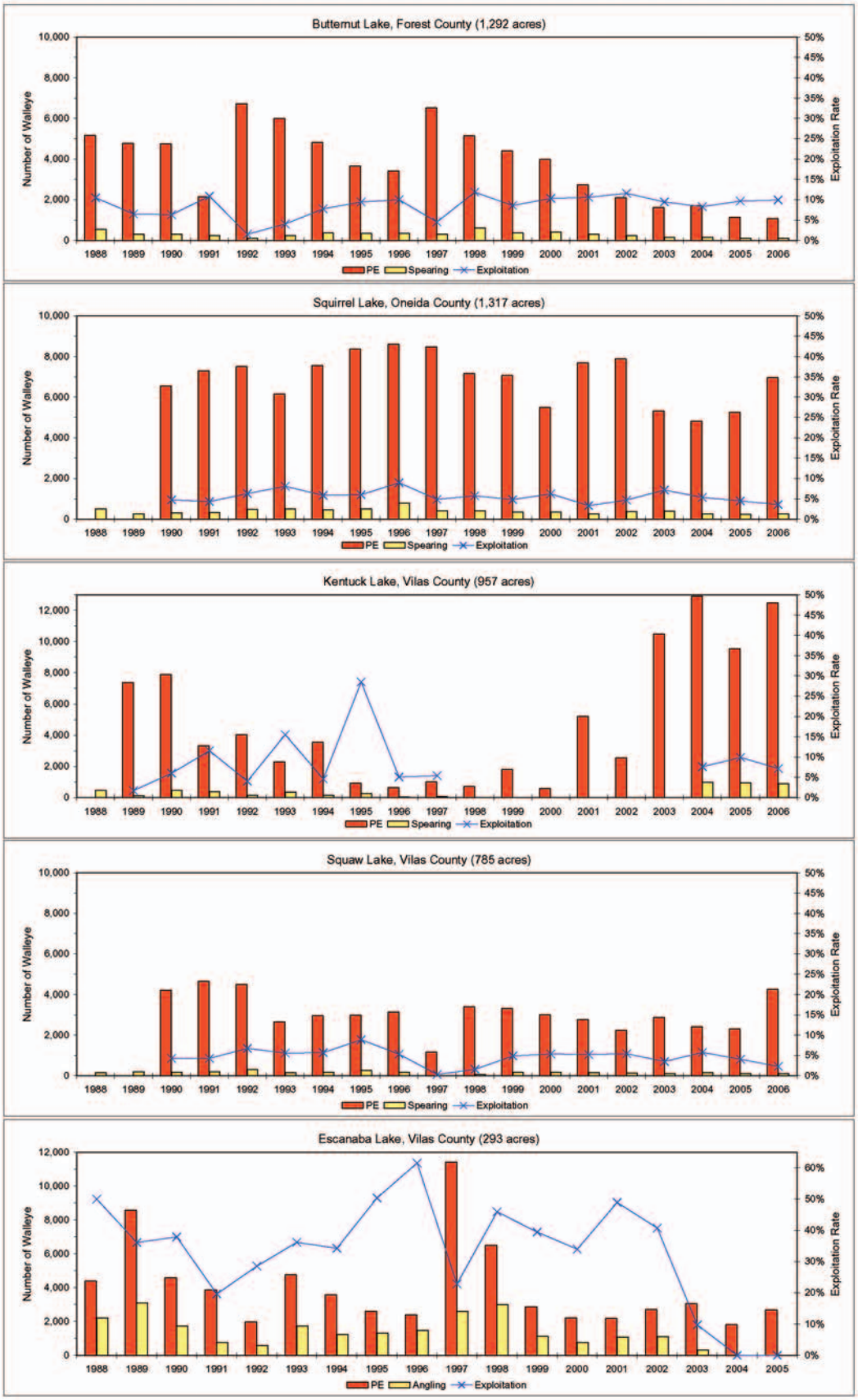


Figure 3. Number of adult walleye, number speared or angled, and exploitation rate for four large long-term study lakes with spearing and Escanaba Lake where no spearing occurs and unregulated angling was allowed until 2004.

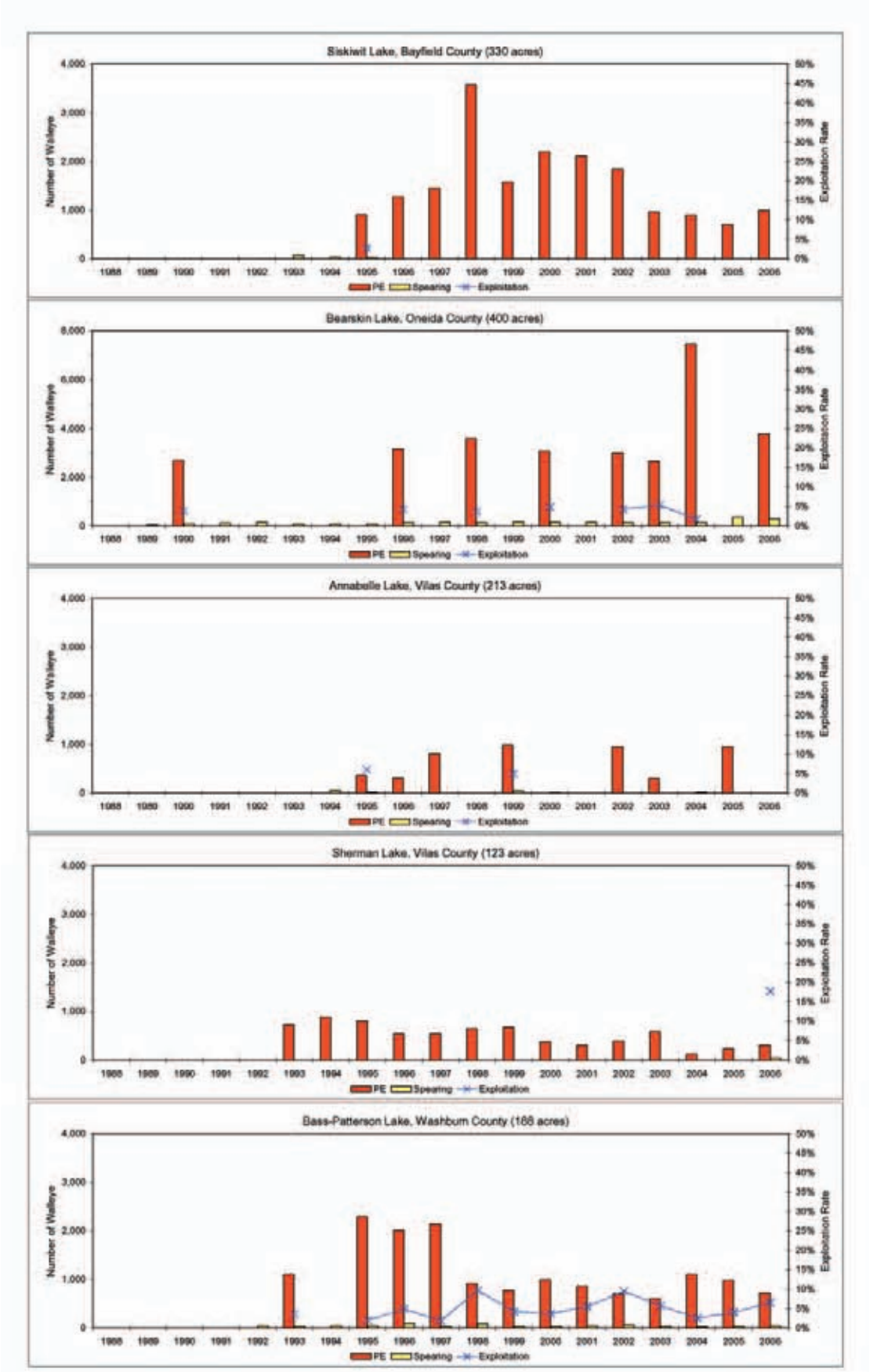


Figure 3 continued. Number of adult walleye, number speared, and exploitation rate for five small long-term study lakes.

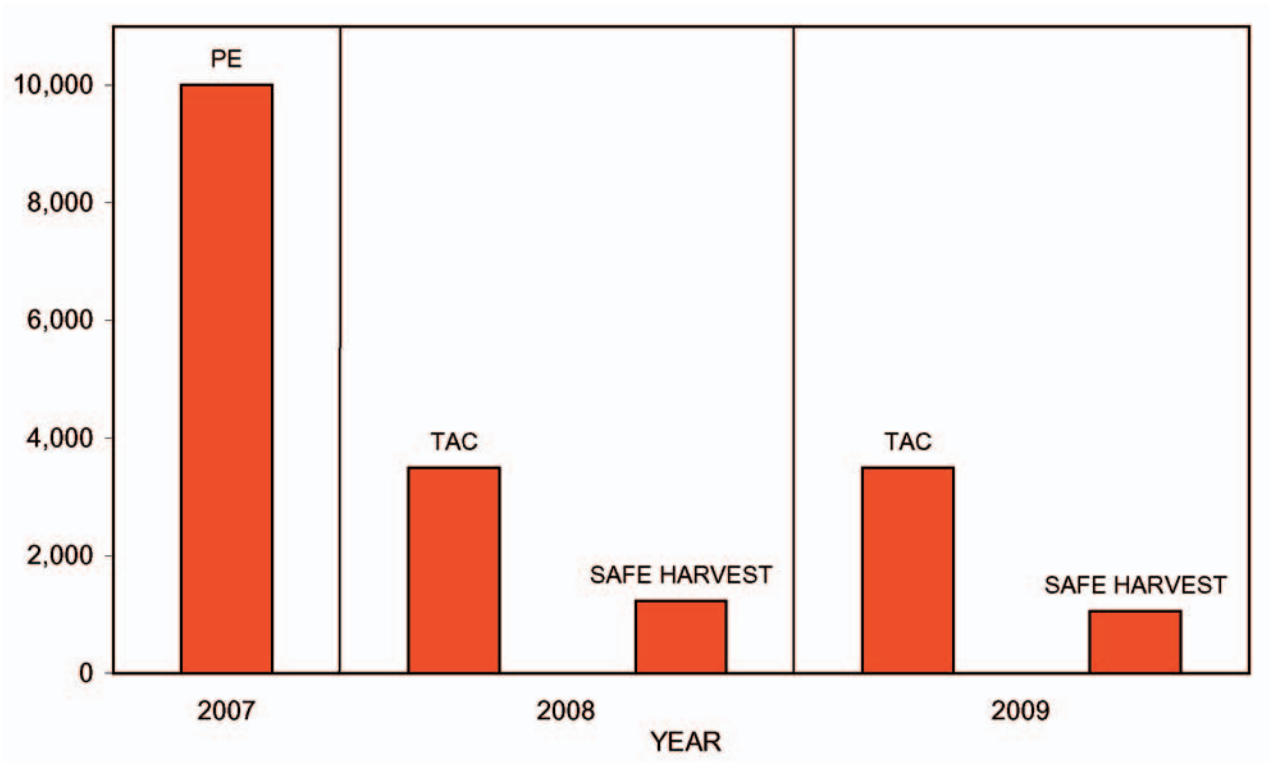


Figure 4. Hypothetical population estimate for Lake A and the resulting TAC and Safe Harvest values in the next two years.

Estimating Safe Harvest – Population Estimates Mark–recapture estimates are used to calculate the number of harvestable walleye for the two years following an estimate (Figure 4). For example, assuming that an estimate for Lake A in 2007 was 10,000 adult walleye, then in 2008 the harvestable surplus or total allowable catch (TAC) would be 35% of that number (i.e. 3,500 adults). However, because a year has passed and because the population may have changed over that year, an adjustment or safety factor is applied. This safety factor is based on a projected "worst case" scenario for Escanaba Lake based on declines observed from one year to the next. The safety factor for a one year old estimate is 35%, and for a two year old estimate is 30%.

Estimating Safe Harvest – Safe Harvest Models Beyond two years, mark–recapture population estimates are no longer directly used. However, they are indirectly used because each estimate is entered into one of three "regression models." These models are simply plots of individual population estimates (y axis) versus the area of the lake where the estimate occurred (x axis) (Figure 5). Separate models have been created for walleye lakes based on whether the walleye population is dependent on: 1) natural reproduction with normal year classes produced (NR model); 2) natural reproduction with irregular and weak year classes (NR2 model); or 3) stocking (ST model).

As the number of population estimates has increased over the past seventeen years, so too has the number of estimates used to develop the three models. Currently there are 195 lakes (699 estimates) in the NR model, 138 lakes (228 estimates) in the ST model, and 29 lakes (36 estimates) in the NR2 model. In general, for lakes of the same size, walleye populations dependent on natural reproduction (NR) have more fish than lakes dependent on stocking (ST) and both have more adult walleye than in lakes with weak and irregular natural reproduction (NR2) (Figure 6). Also, as the size of the lake (acres) increases, so does the absolute number of adult walleye. Average density (number of adult walleye per acre) is around 4.1 for NR lakes, 1.9 for ST lakes, and 0.6 for NR2 lakes.

Estimates Based on Models A total of 732 lakes have a harvestable walleye population. Of these, 415 lakes are in the NR (natural reproducing) model, 199 are in the ST (stocked) model, and 118 are in the NR2 (natural reproduction with weak/irregular year classes) model. A sum of the estimated population in each of the 732 lakes gives an estimated total adult walleye resource at around one million (Figure 7). With total allowable catch (TAC) at 35% of this figure, around 350,000 adult walleye can be harvested annually. The safe harvest is around 30–35% of the TAC. Total safe harvest has ranged from 90,000–120,000 since 1989. Safe harvest is set so that if 100% of the safe harvest were taken, then the chance of actually exceeding the TAC would be 1 in 40.

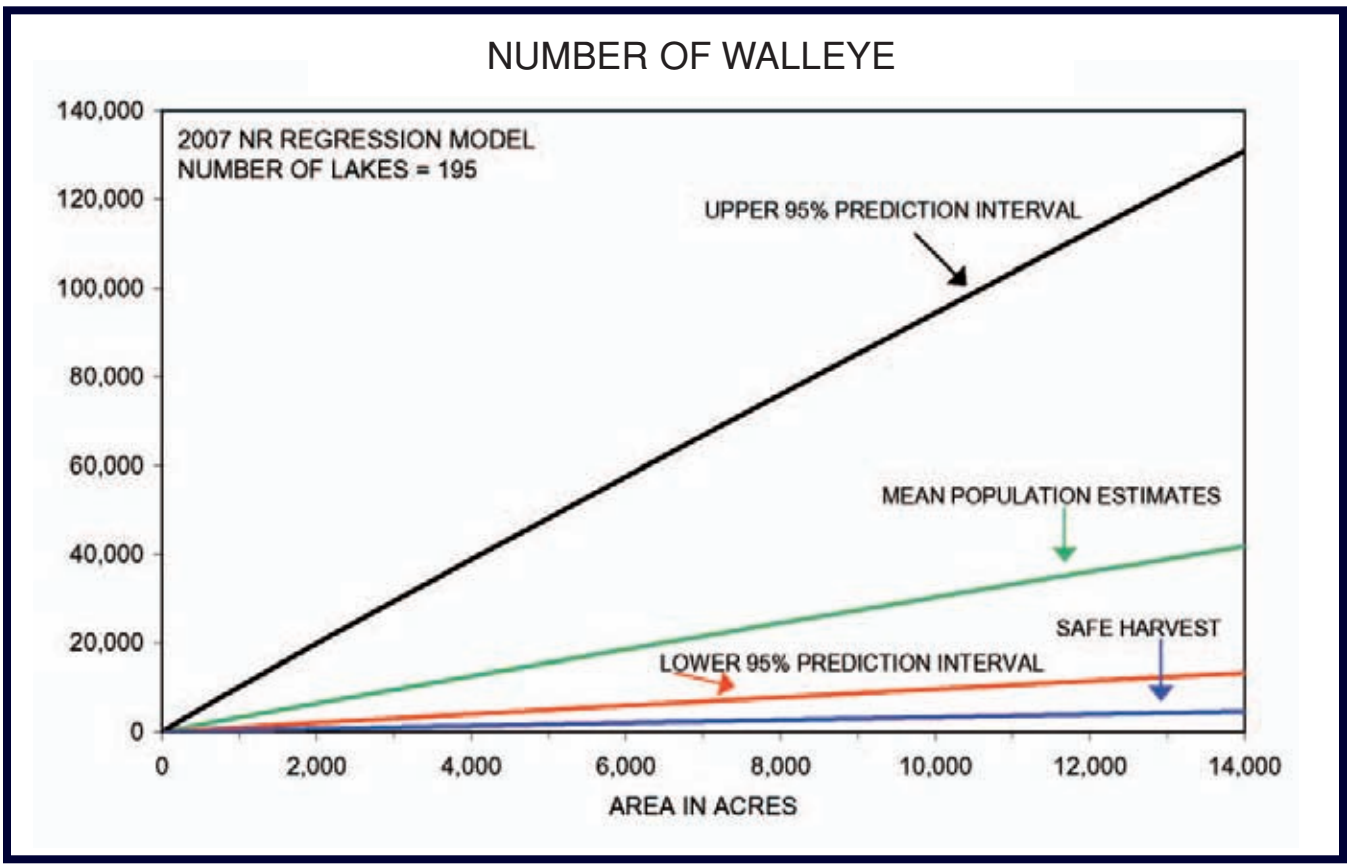


Figure 5. Graph of population estimates and lake area for the NR model.

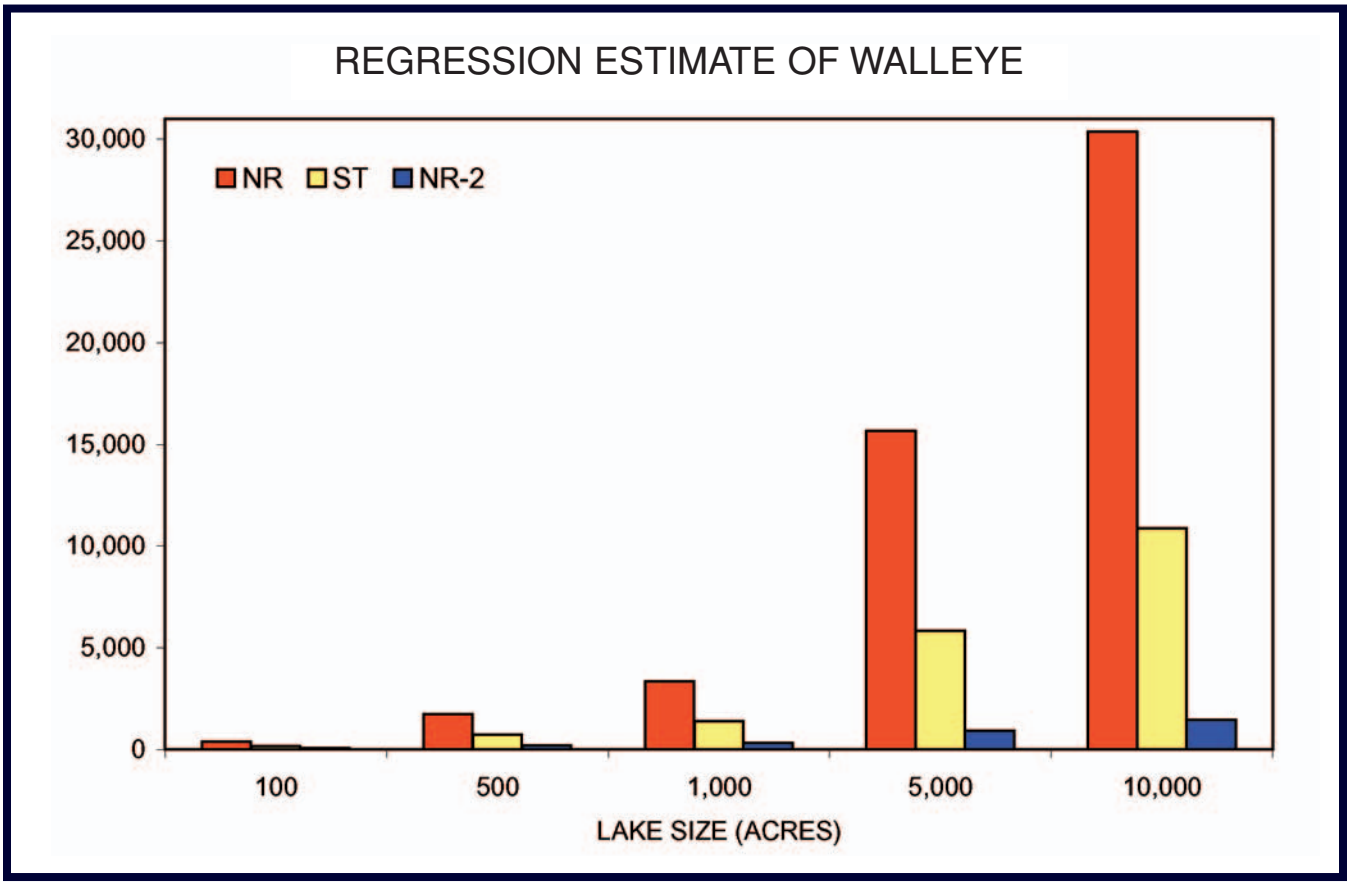


Figure 6. Estimated population for five different sized lakes based on whether the lake is coded as NR (naturally reproducing), ST (stocked), or NR2 (naturally reproducing with weak year classes).

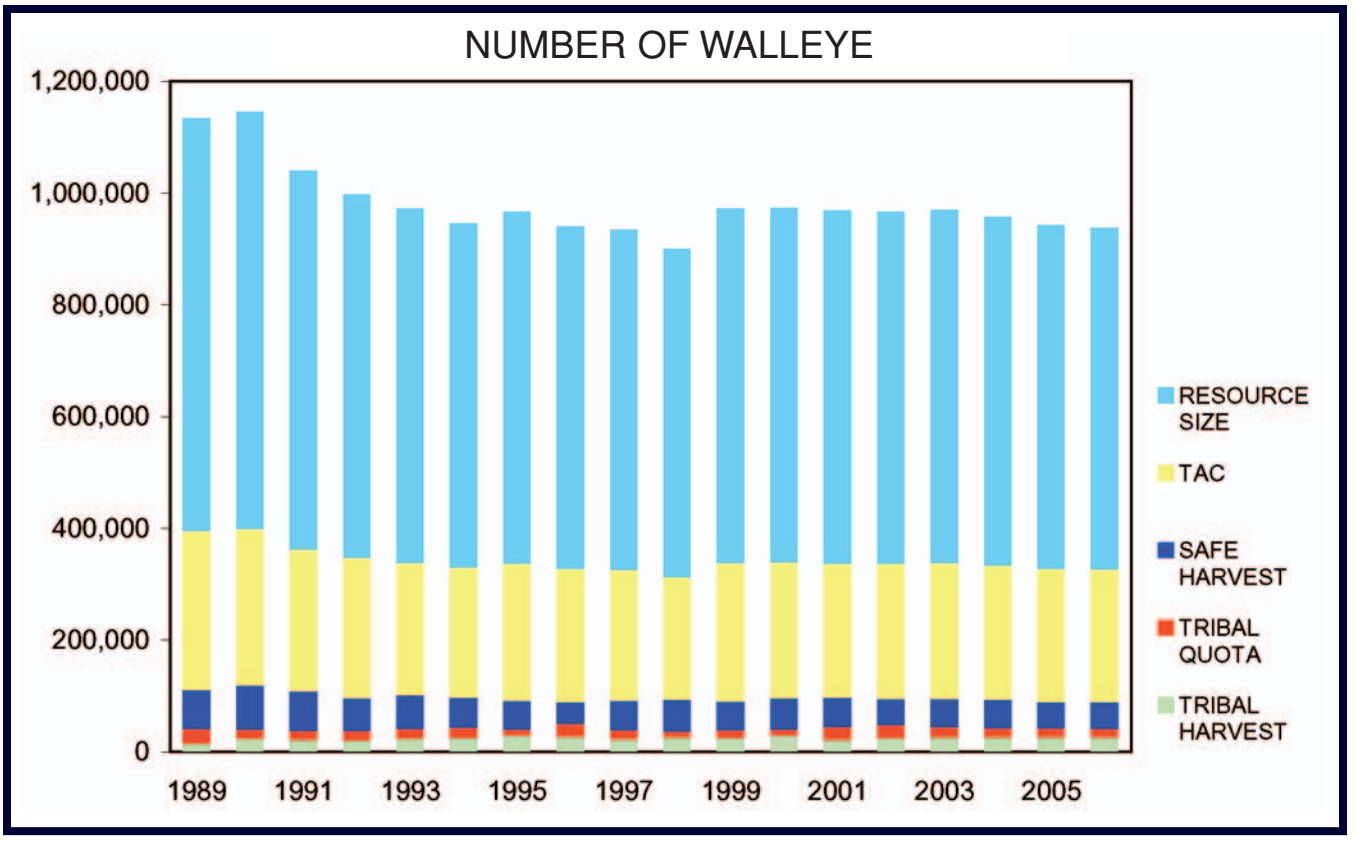


Figure 7. Estimated overall size of the ceded territory walleye resource using models, plus TAC and safe harvest levels from 1989-2006. Also shown are the tribal quotas selected and the number harvested during open-water spearing and netting during this same period.

Tribal Declarations Each year the six Wisconsin Chippewa Tribes declare by March 15 a percentage of the safe harvest to be taken from various lakes during the upcoming year. Since 1989 the number of walleye being declared, or tribal quota, has ranged from 38,000-51,000 (Figure 7) in 178-293 lakes. Tribal declarations have not been at 100% of the safe harvest because, according to state biologists, the walleye bag limit for hook-and-line anglers would be dropped to zero (Table 1). Instead, the tribes have usually selected a percentage that allows for a 2-3 angling daily bag limit. If the entire tribal declaration is not harvested in the spring and enough fish are available, the state may choose to raise angling daily bag limits. The bag limit for lakes without a tribal declaration remains at 5 per day.

Besides considering the effect of the state's response to tribal declarations, the tribes must consider the effect of the "pulse fishing" rule. This rule states that if the tribal harvest is 60% or more of the safe harvest for two consecutive years, then the third year the lake must be closed to tribal harvest using efficient methods. The 60% figure for defining "pulse fishing" was initially agreed to by state and tribal representatives with the understanding that the percentage would be evaluated after two years, in 1991. Such an evaluation was attempted but biologists could not reach agreement and thus, the percentage remains at 60%.

REDUCED DAILY BAG LIMITS FOR WALLEYE FISHING

Percentage of Safe Harvest to be Speared, Trapped or Netted

Daily Bag Limit	Current Pop. Est.	Pop. Est. Made 1-2 Years Ago	Pop. Est. Made 3 or More Years Ago Or Regression Model
4	1-7	1-14	1-20
3	8-18	15-39	21-54
2	19-36	40-76	55-84
1	37-68	77-94	85-94
0	69 or more	95 or more	95 or more

Table 1. State bag limit response to tribal declarations.

Tribal Harvest The primary off–reservation tribal fishery is the spring spearing of walleye. This fishery is highly regulated and controlled with individual lake quotas, a nightly permitting system, a requirement that only specified boat landings be used, and the stationing of tribal

Creel clerks count and measure each fish at spearfishing landings. This provides the tribes with an accurate data base on the spearfishing harvest.

creel clerks and wardens at every landing each night during the spring season to count all fish taken. Quotas are adjusted daily based on the previous night's harvest to ensure that they are not exceeded. With such a system, a wealth of information for describing the tribal fishery and the impact of that fishery on individual walleye populations has been collected.

For the seventeen year period 1989–2006, a total of 460,424 walleye have been speared, including less than 500 that were netted. The majority have been males (84%), and a lesser percent females (9%) or unknown sex (7%). Average length for the 395,864 walleye measured was 15.4 inches. Since 1989, the number of walleye taken has ranged from 16,054 to 30,367 and averaged 25,579 annually (Figure 8). The number of other gamefish taken during this seventeen year period was 4,419 muskellunge, 3,236 bass, and 571 northern pike. Average lengths for measured fish were as follows: 37.5 inches for the 4,403 muskellunge measured, 15.6 inches for the 3,150 bass measured, and 27.3 inches for the 527 pike measured. During the past seventeen years the number of spearers has ranged from 271 to 514 and averaged 411 with the number of lakes speared ranging from 102 to 177 and averaging 150.

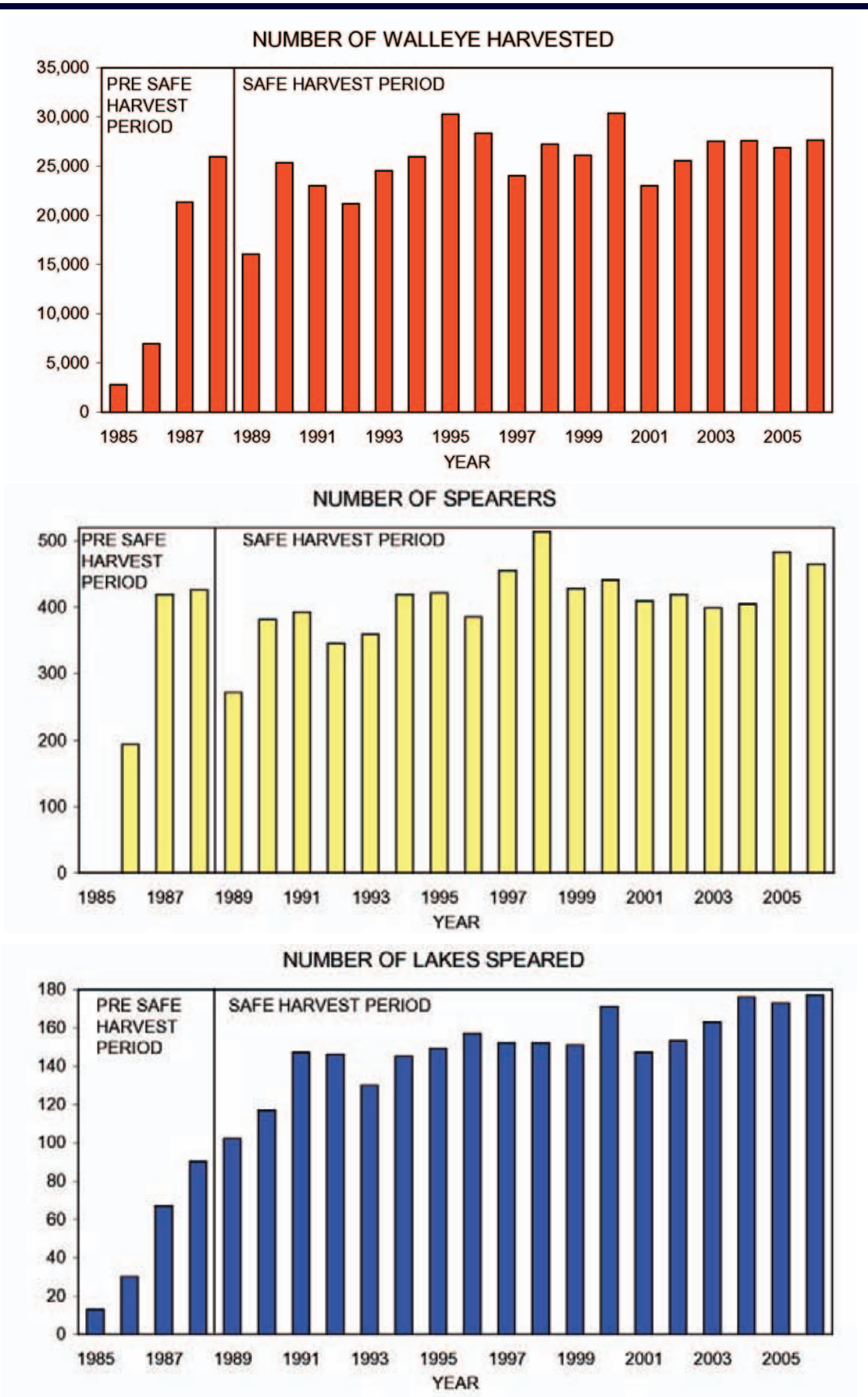


Figure 8. Number of walleye harvested, number of spearers, and number of lakes speared from 1985-2006. Use of safe harvest levels was initiated in 1989.

State Harvest Since 1990, the Wisconsin DNR has monitored angler harvest in the ceded territory through roughly 20 to 25 creel surveys each year. Creel surveys conducted from 1980-1989 projected an average angler harvest of 624,000 walleye in the ceded territory for all lakes classified as having walleye at the time (355,183 acres in 859 lakes) (Table 2). Since 1990, creel surveys project an average angler harvest of 261,000 walleye per year. Starting in 1990, a 15 inch minimum size limit was enacted statewide on walleye waters, with some lakes allowed an exemption because of either slow growth or high contaminants in the larger sized fish. Angler catch (including walleye released back to the water in addition to fish harvested) averaged 912,000 walleye per year between 1980-1989. For the period 1990-2005, the average annual catch increased to 1,048,000.

Robert Jackson, Bureau of Indian Affairs biologist and Joint Assessment Steering Committee chairman, presents a fishing rod to Green Bay Packer Donald Driver, who hauled in the largest fish during the 2003 Partners in Fishing Event. ***(Photo by Charlie Otto Rasmussen)***

Angler Exploitation Rates- Ceded Territory Walleye Creels					
Season	Mean Rate of Exploitation	Minimum Rate	Maximum Rate	Projected Catch	Projected Harvest
1980-89				912,000	624,000
1990-91	11.0%	1.6%	25.9%	1,560,000	380,000
1991-92	9.9%	0.8%	35.0%	1,460,000	312,000
1992-93	7.1%	1.6%	26.1%	1,060,000	363,000
1993-94	7.0%	1.6%	17.5%	1,210,000	199,000
1994-95	9.9%	0.5%	22.8%	591,000	177,000
1995-96	10.6%	1.4%	34.2%	936,000	187,000
1996-97	7.4%	1.3%	20.4%	2,206,000	240,000
1997-98	11.9%	1.6%	23.2%	1.348,000	346,000
1998-99	6.2%	0.0%	15.0%	761,000	214,000
1999-2000	7.5%	0.0%	20.9%	997,000	309,000
2000-01	7.4%	0.0%	24.1%	933,000	336,000
2001-02	5.9%	1.2%	12.2%	695,000	219,000
2002-03	6.5%	0.0%	31.3%	544,000	134,000
2003-04	9.4%	0.0%	21.9%	1,195,000	263,000
2004-05	11.3%	0.0%	39.4%	500,000	219,000
2005-06	14.4%	0.0%	60.0%	764,000	285,000

Table 2

Exploitation – Spearing Because spearing is completely monitored, it is possible to calculate spearing exploitation rates for any lake with both spearing and an adult walleye population estimate. During the seventeen year period 1989–2006, exploitation rates have been calculated in 455 such cases (Figure 9). For lakes with good natural reproduction of walleye (371 cases), annual exploitation rate has averaged 6.2% (range: 0.03%–49%). For lakes dependent on stocking (83 cases), annual exploitation has averaged 4.9% (range: 0.03%–27%).

In the four long–term study lakes over 500 acres and dependent on natural reproduction, spearing exploitation has ranged from 2% to 12% in Butternut Lake, Forest County; from 3% to 9% in Squirrel Lake, Oneida County; from 0% to 29% in Kentuck Lake, Vilas County; and from 0.3% to 9% in Squaw Lake, Vilas County.

Exploitation – Angling

Angling exploitation rates have been calculated using creel survey data from 309 lakes and lake chains surveyed between 1990 and 2005. In general, exploitation rates on adult walleye populations have declined as a result of the sliding bag limit system in response to tribal declarations and the 15 inch size limit. Exploitation by anglers on adult walleye populations has averaged around 9% based on the data that has been collected between 1990 and 2005. Exploitation rates on walleye populations have ranged from 1-2% to 26% in most years. Those lakes exempt from the 15 inch size limit experienced exploitation rates between 10-20% in most years.

In the one long term study lake, Escanaba Lake, Vilas County, with annual angling exploitation data, the percent of the adult population taken during the sixteen year period 1988-2003 ranged from 10-62% and averaged 37%.

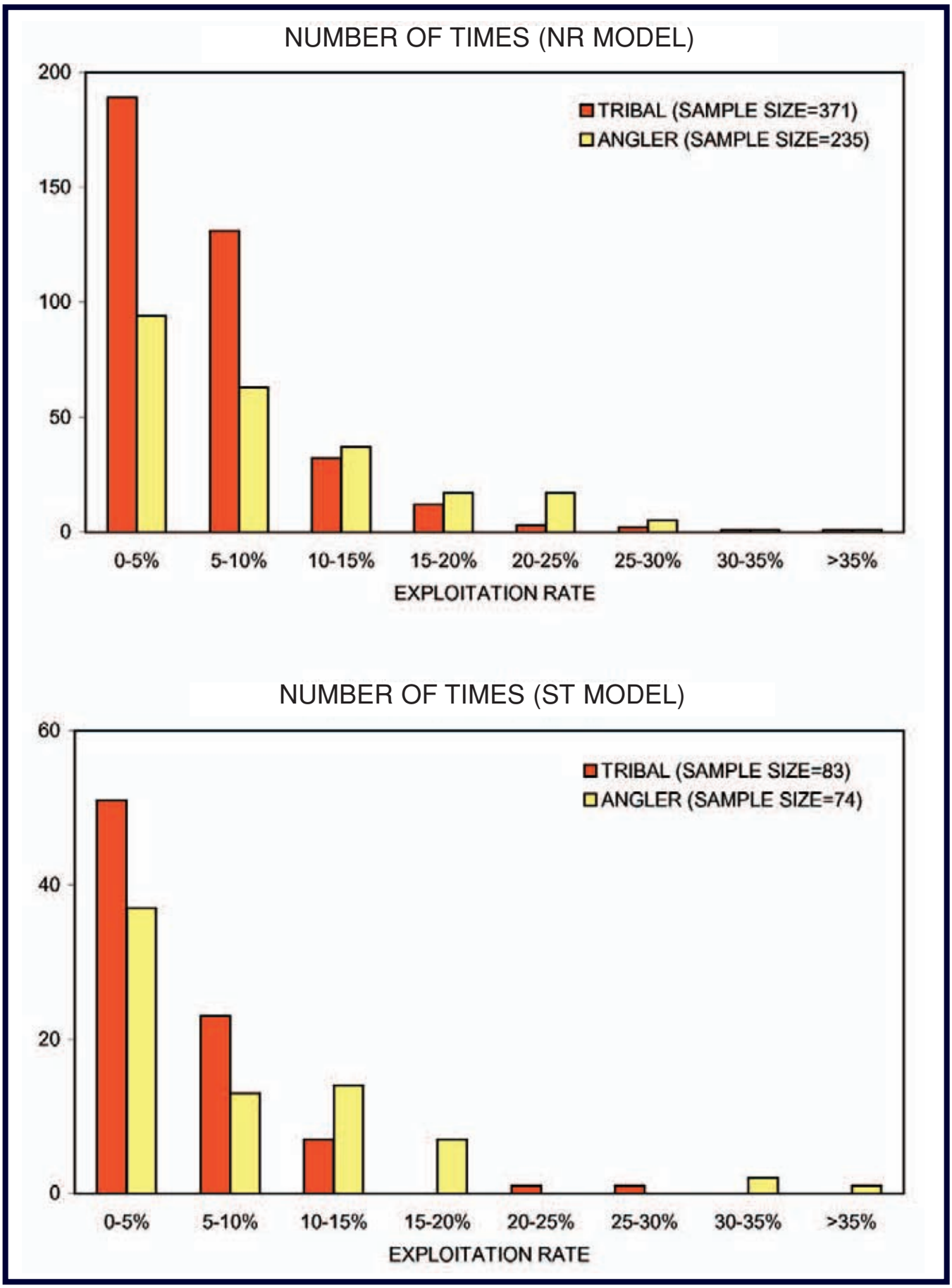


Figure 9. Distribution of spearing and angling exploitation rates for NR (naturally reproducing) and ST (stocked) lakes from 1989 to 2006.

Juvenile Surveys A population of walleye changes from year to year due to births and deaths from both natural causes and harvest. The relative number of walleye born in spring that survive to fall can be determined by electrofishing surveys. Typically, the entire shoreline of a lake is surveyed in one night during late summer and fall and both fingerling (age 0) and yearling (age 1) walleye are collected. The number of fall surveys conducted annually has grown to well over 200 (Figure 10).

Walleye Year Classes The number of fingerling walleye that survive varies from lake to lake and from year to year within a lake (Figure 11). For the 2,629 surveys conducted in lakes with normal natural reproduction since 1985, the median fingerling catch rate was 15 per mile of shoreline surveyed. Using this value of 15 as a gauge, the four large long-term study lakes show that average to very strong fingerling year classes were established during 13 of 21 years in Butternut Lake, during 18 of 20 years in Squirrel Lake, during only 8 of 20 years in Kentuck Lake, and during 13 of 18 years in Squaw Lake.

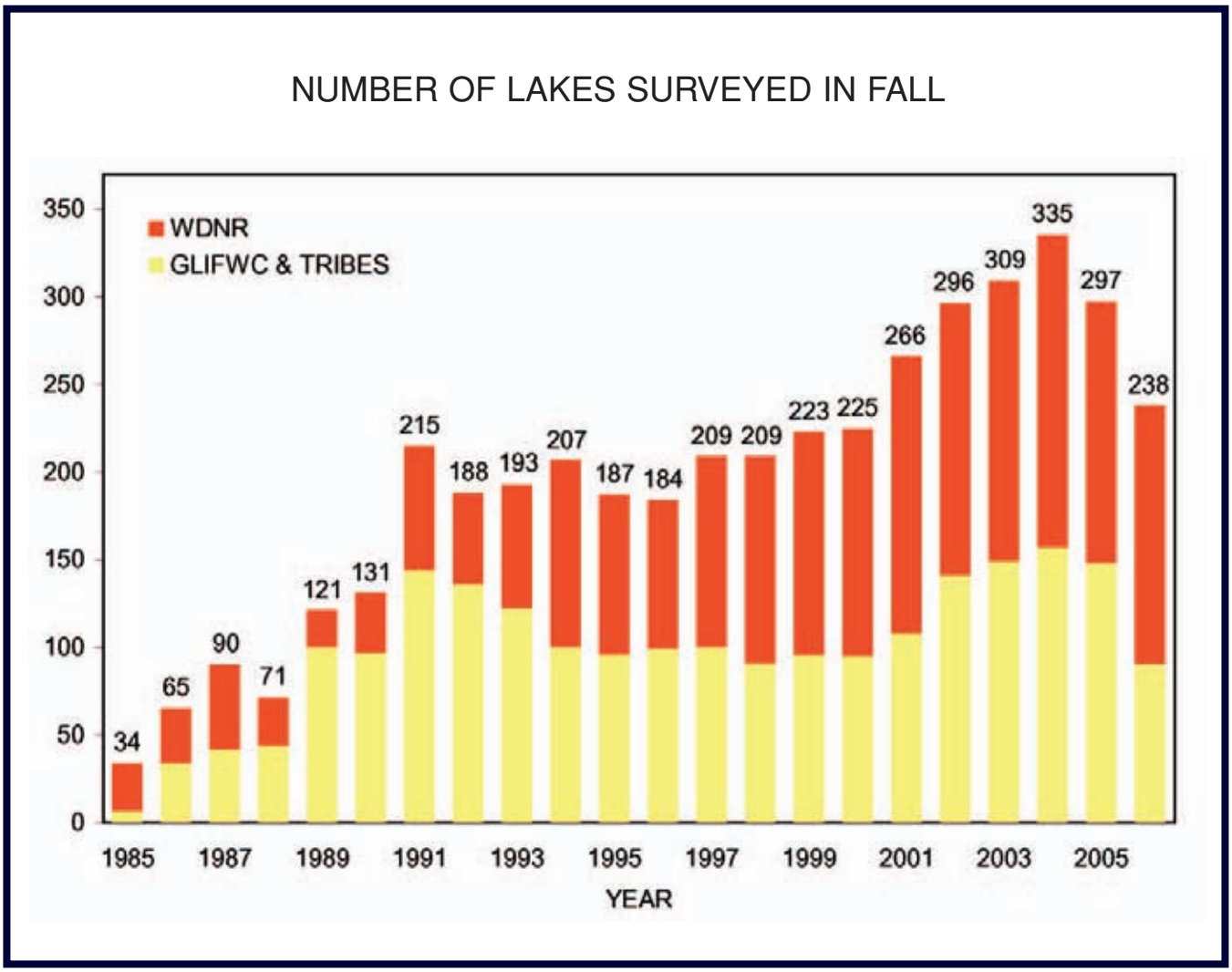


Figure 10. Number of fall electrofishing surveys for juvenile walleye conducted annually between 1985-2006.

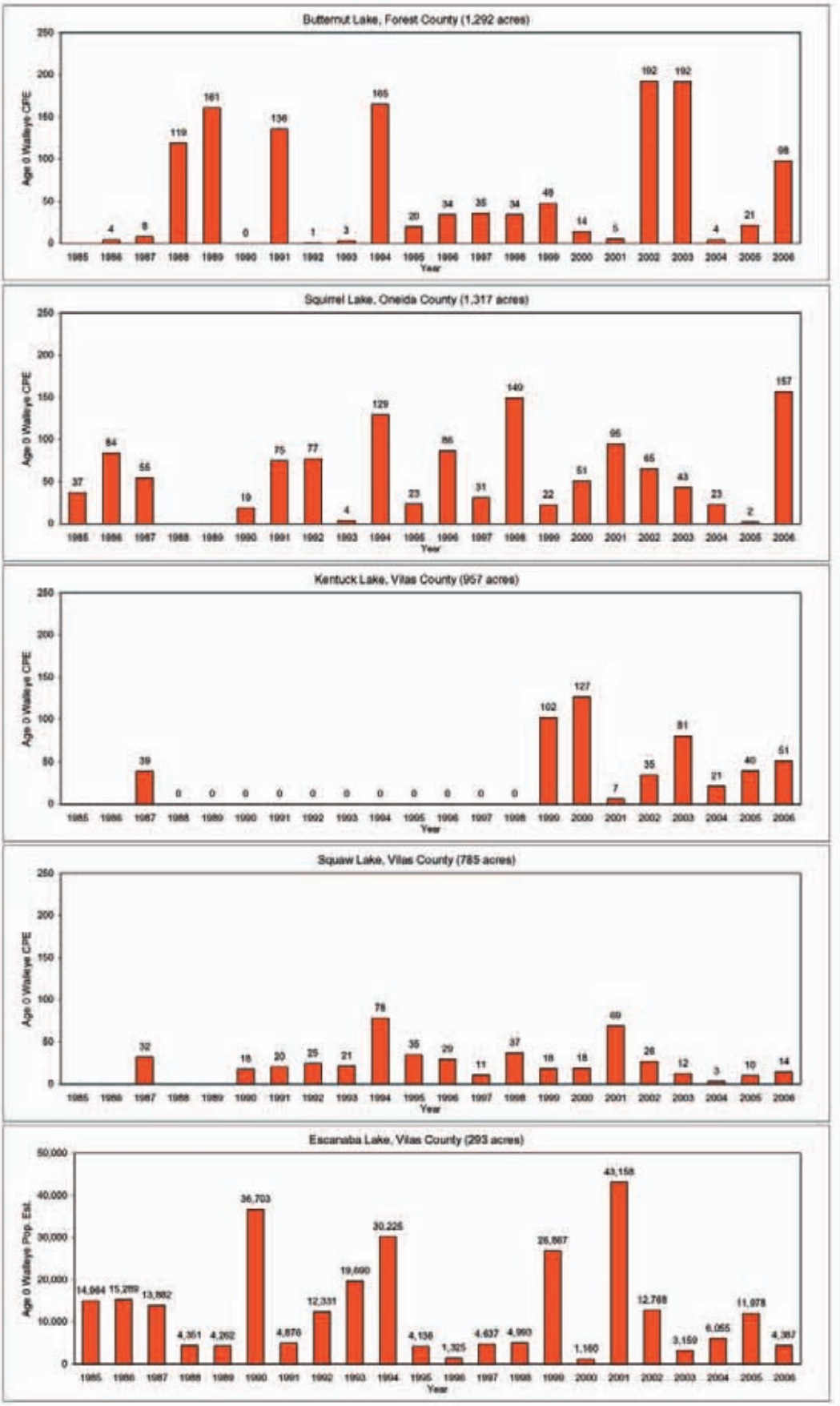


Figure 11. Catch per effort (CPE = age 0 walleye per mile of shoreline surveyed) during fall surveys of the four large long-term study lakes and Escanaba Lake from 1985-2006. A zero indicates a survey was done but no walleye were collected. A blank indicates no survey was done.

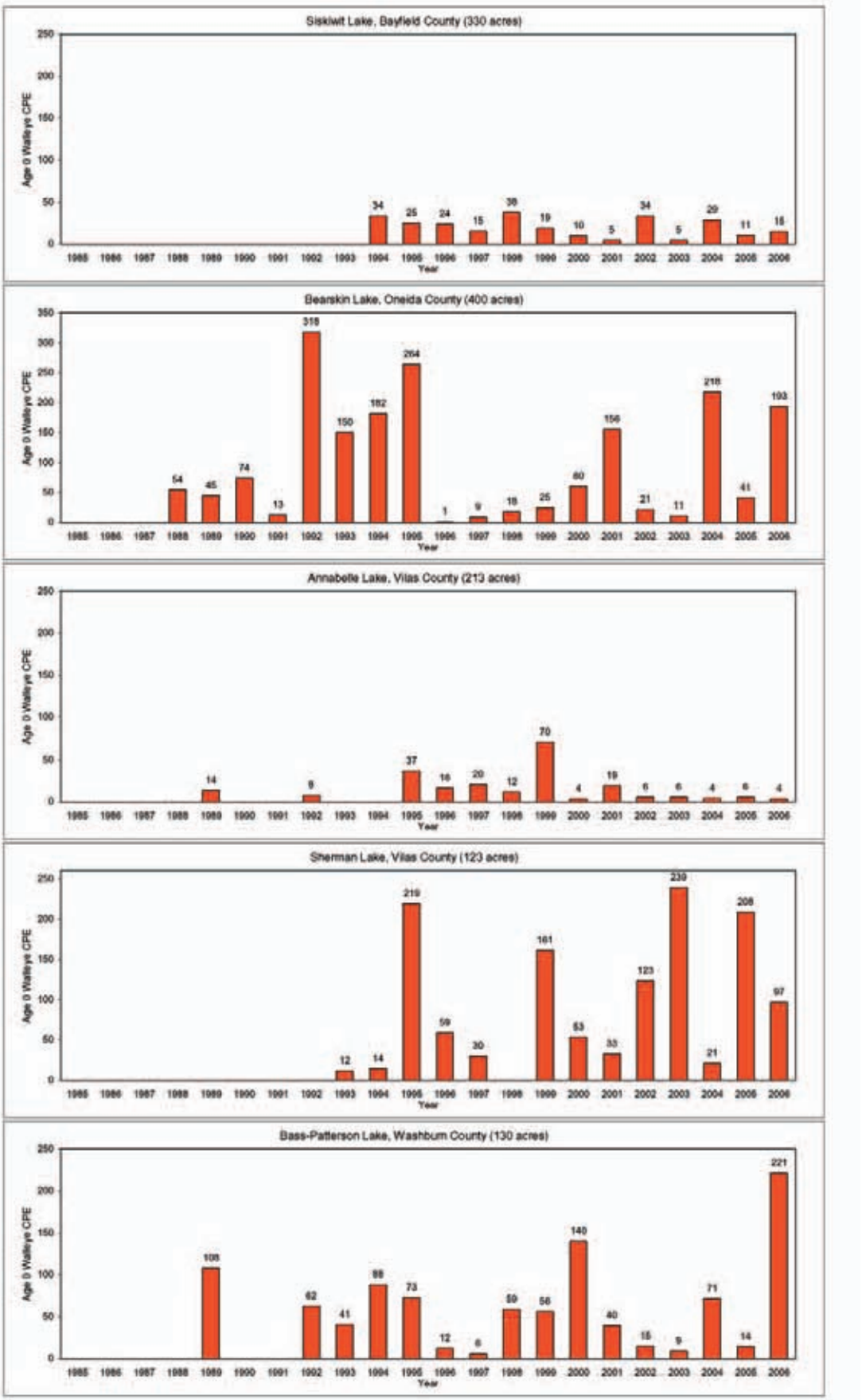


Figure 11 continued. Catch per effort (CPE = age 0 walleye per mile of shoreline surveyed) during fall surveys of the five small long term study lakes from 1985-2006. A zero indicates a survey was done but no walleye were collected. A blank indicates no survey was done.

With the large number of fall surveys being conducted across the entire ceded territory, the pattern for relative strength of walleye year classes over time can be seen. For NR lakes, strong fingerling year classes were formed in 1986, 1987, 1994, 1995, and 2001 (Figure 12), with catch rates averaging 36 per mile for these five years. Fingerling year classes formed in 1989, 1990, 1992, 1993, and 2003 were weaker, with catch rates averaging 7 per mile for these five years. For the rest of the years, catch rates ranged from 10 to 22 per mile and averaged 16.

For ST lakes year class strength of both fingerling and yearling walleye has been relatively stable at a low level. These data for juvenile fish support the fact that fewer adult walleye are found in populations dependent on stocking compared to lakes with naturally reproducing populations.

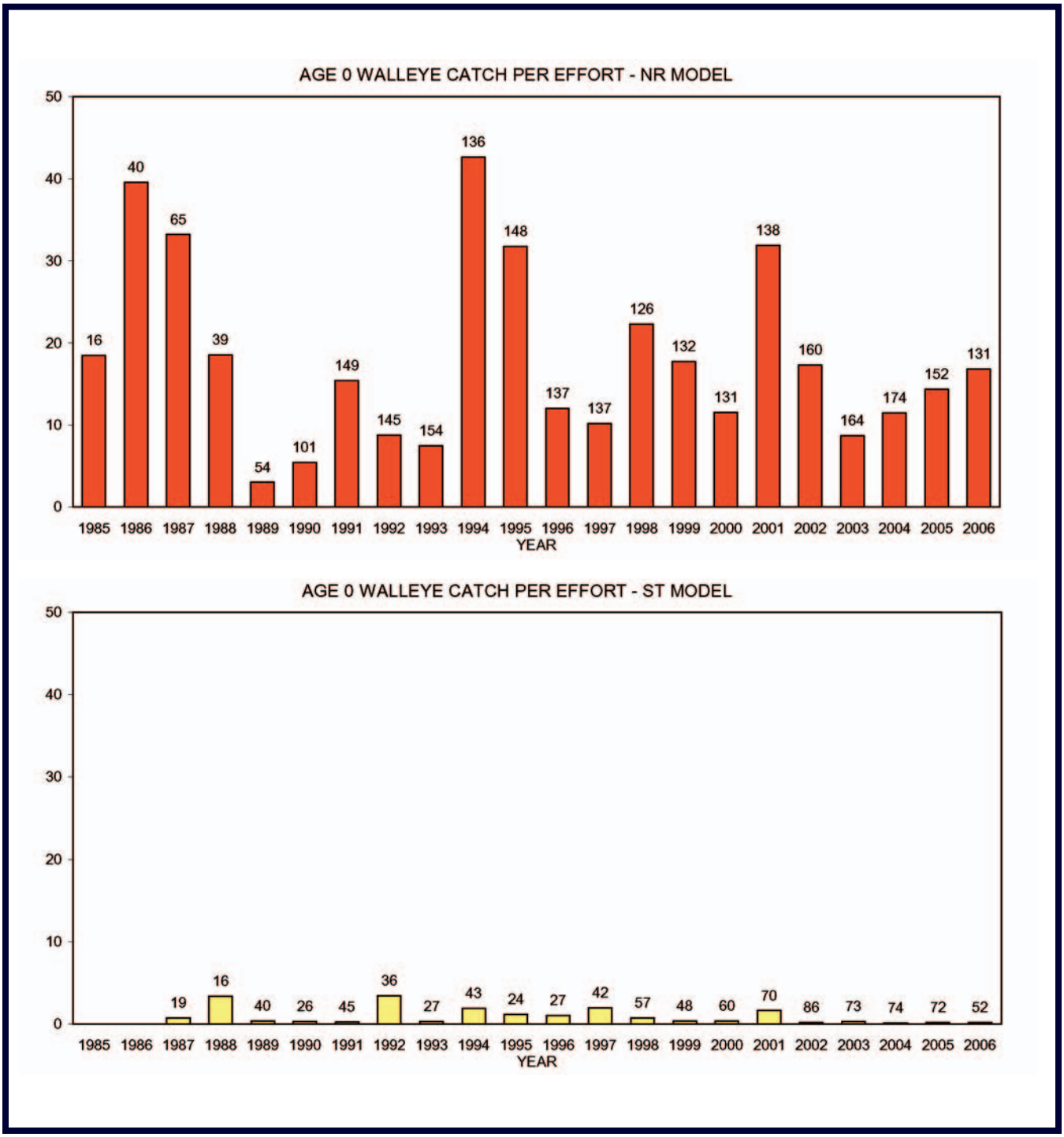


Figure 12. Median annual catch per effort (CPE = fingerlings per mile of shoreline surveyed) during fall surveys of NR and ST lakes. Number of lakes sampled per year indicated above bar.

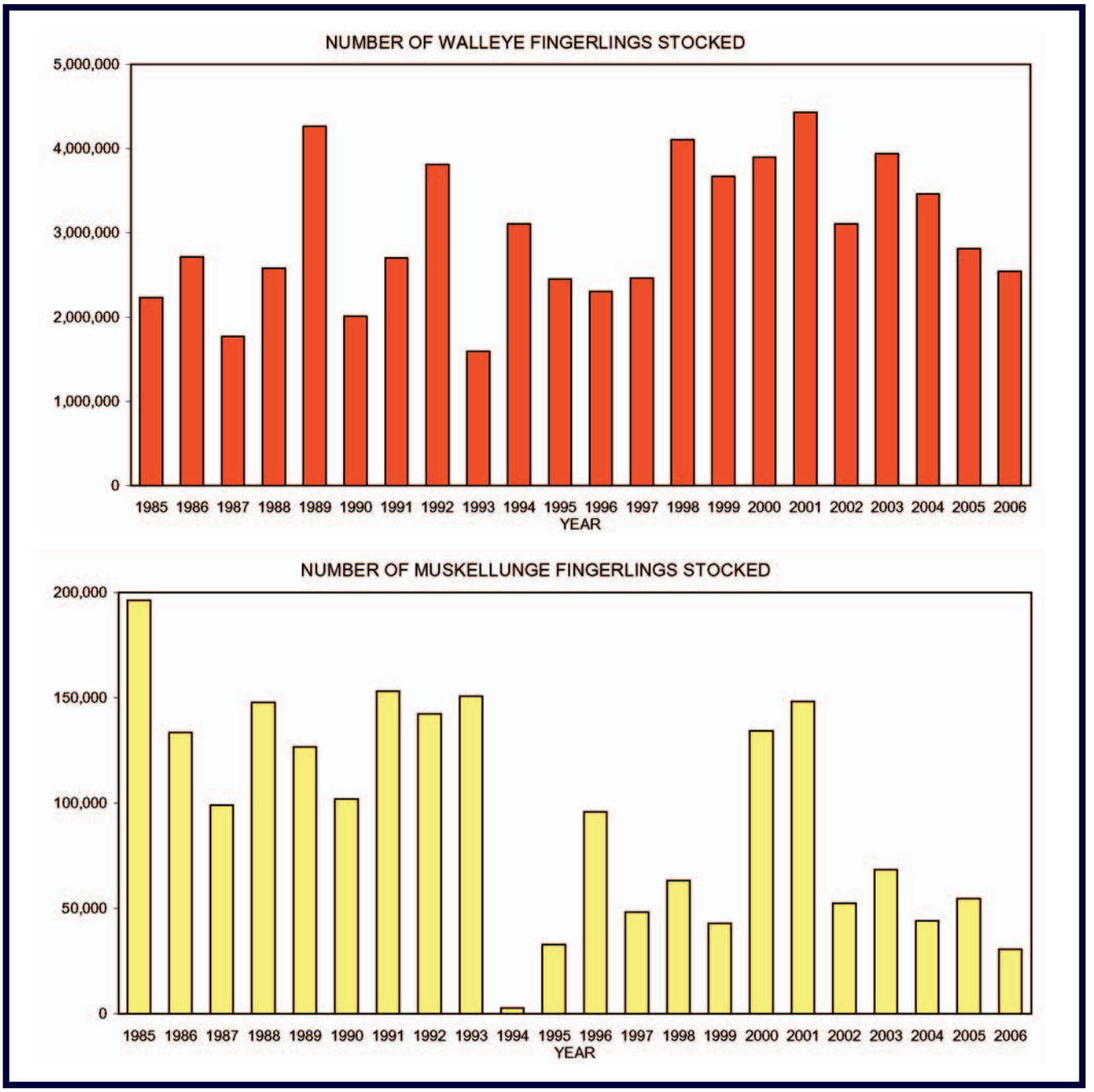


Figure 13. Number of fingerling walleye and muskellunge stocked in ceded territory waters from 1985-2006.

Database Development – Fish Stocking and Mercury Testing

Besides coordinating work plans and sharing survey information about adult and juvenile walleye populations, GLIFWC and WDNR staff have developed various databases to summarize and analyze the information. In addition to these, other datasets such as those for spearing, angling, fish stocking, and mercury testing have been maintained. Figure 13 shows the number of fingerling walleye and muskellunge stocked in various waters throughout the ceded territory by state, tribal and federal hatcheries from 1985–2006. The stocking record database contains a listing of all stages (e.g. fry, fingerling, yearling, adult) and all species stocked in each lake since 1970.

Both the WDNR and GLIFWC test extensively for mercury contamination in fish each year, taking a large number of samples. Information from sampling has been entered into a database in order to develop mercury advisories, which have been translated into maps to help people make the best use of the information (Figure 14).

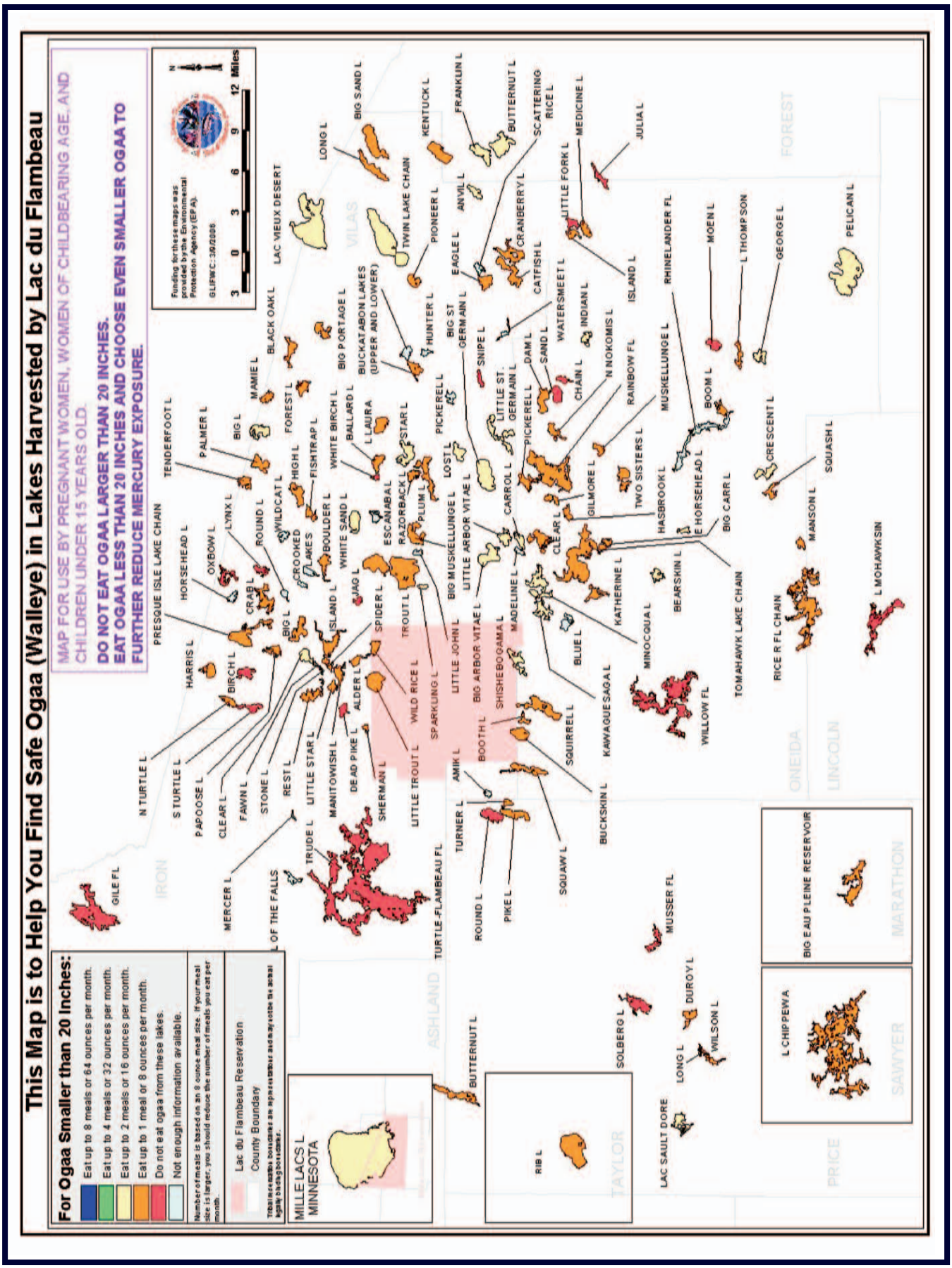


Figure 14. GLIFWC map showing information on mercury contamination of walleye (ogaa) in lakes harvested by Lac du Flambeau. A companion map is available for use by women not planning to have children and by men.

Conclusion

Commitment and cooperation have enabled the Joint Assessment Steering Committee to develop this ongoing database on the walleye fishery in the long-term study lakes. This valuable information helps form a picture which will enable fishery managers to better understand the dynamics of the fishery and the impact of human activity. The status of the fishery has not changed significantly. However, it is important to observe the slow-moving trends which may indicate significant problems in process.

Activities which the Committee needs to continue or develop in the coming years include:

- continued observation of trends in both adult and juvenile walleye populations
- continued monitoring of mercury levels in the fishery to assess health risks in the mixed fishery waters and develop trend information
- extensive fall recruitment surveys to develop trend data for individual lakes in the ceded territory
- conduct annual creel surveys in the long-term study lakes to provide a picture of the impact of angling over time
- use of the information for development of models to better estimate harvestable surplus or total allowable catch that apply to the mixed fishery
- inventory, description, and classification of habitat in order to protect it in the future

The inter-agency sharing of expertise, equipment, finances, and workload has been the key to the development of this database on the walleye fishery in Wisconsin's ceded territory. Wisconsin's gift of abundant lakes makes the labor-intensive task of assessment enormous and too costly for one entity to accomplish alone. For this reason the cooperative effort between state, tribal and federal agencies has truly been the key to casting more light on Wisconsin's walleye resource and providing the information necessary to keep it as healthy and wonderful as it has always been.

The Joint Assessment Steering Committee, composed of tribal, federal and state fisheries managers, meets annually to enjoy fishing during the Partners in Fishing Event, organized by Bob Jackson, Bureau of Indian Affairs biologist and Mark Rose, president of Discover Wisconsin Television. In 2006 they were joined by former Green Bay Packer Gilbert Brown and Wisconsin Department of Natural Resources Secretary Scott Hassett. ***(Photo by Sue Erickson)***

Appendices

Description of the Ceded Territory

The northern portion of Wisconsin was ceded by the Lake Superior Chippewa Tribes to the United States in treaties in 1837 and 1842. The area encompasses 22,400 square miles. The ceded territory now includes all or parts of 30 Wisconsin counties.

Six Chippewa reservations are located within the ceded territory. The reservations and their approximate size are: Bad River (125,000 acres), Lac Courte Oreilles (70,000 acres), Lac du Flambeau (70,000 acres), Mole Lake (2,000 acres), Red Cliff (14,000 acres), and St. Croix (2,000 acres). The larger reservations are "checkerboarded" with privately owned lands. The St. Croix Reservation consists of scattered parcels of land in three counties.

The fishery resources of the reservations are quite diverse. The Lac du Flambeau Reservation has 158 lakes totaling 20,000 acres and 15 rivers and creeks that flow for 34 miles. The Lac Courte Oreilles Reservation encompasses portions of 3 major lakes: the Chippewa Flowage, Lac Courte Oreilles, and Grindstone Lake. The Bad River Reservation has two major streams that flow into Lake Superior and support anadromous runs of walleye, sturgeon, trout, and salmon. One of the most significant wetlands on Lake Superior is on the Bad River Reservation. The Red Cliff Reservation has a few small streams that flow into Lake Superior which are being restored with coaster brook trout. The parcels of land that make up the St. Croix Reservation adjoin several lakes. The Mole Lake Reservation has one small lake and a connecting stream.

Although northern Wisconsin is characterized as rural and isolated, the population of several counties in the region have increased significantly within the last three decades. The population of the State of Wisconsin increased from 4,417,821 in 1970 to 5,363,675 in 2000, an increase of 21.41%. In comparison, the population of Sawyer, Burnett, Polk, and Washburn counties in northwestern Wisconsin increased from 56,213 in 1970 to 89,225 in 2000, an increase of 58.73%. The population of Oneida and Vilas counties in northeastern Wisconsin increased from 35,385 in 1970 to 57,809, an increase of 63.37%. These counties, known for their abundance of high quality fresh water lakes, experienced population growth at a rate much higher than that of the state as a whole.

The populations of Wisconsin's six Chippewa reservations have experienced even more rapid growth. Chippewa tribal members residing on or near reservations increased from 2,917 in 1970 to 14,709 in 1999, an increase of 404%. There are no indications that this trend will change in the near future given the return of many families that were moved to cities under BIA relocation programs from the 1940's to the 1960's and the large number of tribal members of child bearing age.

The impact of population growth on Wisconsin's fishery resource is difficult to assess because of the lack of historical habitat inventories. The fact that the human population has increased significantly raises questions about how this growth has affected water quality and aquatic habitats, and how these impacts will be monitored in future years.

Rights to Fish/Treaty Rights

To understand the Chippewa treaty rights that are at issue in Northern Wisconsin, one must understand the nature of Indian tribes and tribal authority. Tribes are distinct political and legal entities recognized by the United States of America in its Constitution, in numerous federal laws and executive orders and by the federal judiciary Tribes occupy a unique position within the United States Constitutional system. They possess sovereign powers, yet, like the states, they are subject to the dominion of the federal

government. At the same time, they are different than the states.

Indian tribes were independent and sovereign nations in their own right before the arrival of Europeans in North America. In fact, the relationship between Indian tribes and European nations was that of one government to another under principles of international law that endure today. Just as the United States has always recognized Great Britain as a sovereign nation, the European nations recognized Indian tribes as sovereign nations in earlier times.

Historically, tribes possessed all of the rights and powers inherent in any sovereign nation. Thus, tribes enjoyed the complete right of self-government, to make their own rules and laws, and to be governed by them, in all areas of tribal life.

Today, tribes no longer possess all attributes of sovereignty because of how they fit into the United States constitutional system. The Constitution recognizes, defines, and allocates power among the governments of the United States, the several States, and Indian tribes. Each type of government has those powers that the Constitution allows.

Tribes no longer are independent nations that are separate from and independent of the United States. Indian tribes have been integrated into the United States system of government under the domain of the United States and they enjoy a quasi-sovereign status that is different from that of the several States.

Generally, today tribes possess those attributes of full sovereignty they once enjoyed that were not relinquished voluntarily by treaty, that Congress has not taken away, or that are not inconsistent with the unique status of tribes as "domestic dependent nations."

Treaties

The United States Constitution also gives the federal government exclusive authority to enter into treaties. As the United States expanded westward and encountered tribes, it was the federal government, not the states, that entered into numerous treaties with Indian tribes. Over 300 treaties were signed with tribes covering many subjects, including peace, removal, land cession, and the establishment of Indian reservations.

These treaties are part of the supreme law of the land, and are binding upon the states and superior to any state law. Treaties remain part of the law of the land unless and until they are modified or terminated by Congress.

"Treaty rights" quite simply are the benefits guaranteed to the parties of a treaty. They are like contract rights. Each party to a contract has certain rights under the contract. One party must honor the benefits that the agreement ensures for the other party. Like rights that endure under the terms of a contract, treaty rights must be honored regardless of when a treaty was made unless Congress chooses to modify or terminate the treaty.

From a tribal perspective, treaty rights are those rights that a tribe has kept and not given up in a treaty. Through treaties, Indian tribes gave up some aspects of their sovereignty while holding onto others. Properly speaking, treaties between tribes and the federal government involve the granting of certain rights to the United States by the tribes, not the granting of rights or privileges from the United States to the tribes.

Off-reservation treaty rights to hunt, fish, and gather are among the rights reserved by the Chippewa tribes. These rights were not given up in the Treaties of 1837 and 1842, nor in any subsequent treaties. This reservation of rights is similar to an casement or the retention of mineral rights by a seller of real estate.

Numerous court decisions have ruled that treaties are to be liberally construed in favor of Indian signatories. Language used in treaties should not be construed to the Indians' disadvantage. Ambiguous wordings in a treaty are to be resolved in favor of the Indians, especially if a term may have more than one meaning. Finally, treaties are to be construed as they would have been understood by the Indians when the treaty was signed.

These same principles are found in contract law. When a dispute arises, a contract will be construed against the party that drafted it. Ambiguous provisions of contracts whose terms heavily favor the party that occupied the superior bargaining position often will be construed to the benefit of the other party or as the other party understood them.

Chippewa Off-Reservation Rights in Wisconsin

In 1983, in what is commonly referred to as the Voigt case, the United States Court of Appeals for the Seventh Circuit determined that the Chippewa tribes had reserved off-reservation hunting, fishing, and gathering rights in the territories ceded by the tribes in the Treaty of 1837 and the Treaty of 1842. The off-reservation hunting, fishing, and gathering rights affirmed in the Voigt case are part of the sovereign rights that the Chippewa have always had and that have never been voluntarily given up or extinguished by the federal government.

The treaty provisions at issue in the Voigt case were as follows: *1) "The Privilege of hunting, fishing, and gathering the wild rice, upon the lands, the rivers and the lakes included in the territory ceded, is guaranteed to the Indians, during the pleasure of the President of the United States. "(Treaty of 1837). 2) "The Indians stipulate for the right of hunting on the ceded territory, with the other usual privileges of occupancy, until required to be removed by the President of the United States" (Treaty of 1842).*

The ceded territory involved in the Voigt case essentially consists of the northern one-third of Wisconsin. The 1837 ceded territory consists of approximately the southwestern one-half of that area. The 1842 ceded territory consists of approximately the northeastern one half of that area, including the southern shore of Lake Superior. The 1842 ceded territory also includes portions of Lake Superior itself. However, Lake Superior is not involved in the Voigt case by agreement of the parties.

The Voigt Case

The Voigt Case began in the United States District Court, Western District of Wisconsin, in 1973. It has been the subject of six trials at the District Court level, three appeals to the Seventh Circuit Court of Appeals and one Petition for Review to the United States Supreme Court. Suit was filed by the Lac Courte Oreilles Band of Lake Superior Chippewa Indians against the State of Wisconsin and a number of state officials challenging the power of the State to regulate the off-reservation harvest by tribal members. The Tribe claimed that laws interfered with tribal hunting, fishing, and gathering and was therefore in violation of the guarantees provided in the Treaties of 1837 and 1842.

In 1978, the Federal District Court granted summary judgment in favor of the State of Wisconsin and dismissed the action. It held that all rights under the treaties had been revoked by the Treaty of 1854. The Seventh Circuit Court of Appeals reversed the District Court ruling, holding that the rights reserved by the Treaties of 1837 and 1842 had not been revoked or terminated and continue to exist. The appellate court returned the case to the District Court for further proceedings to determine the scope of the treaty rights, the extent to which the State may regulate the exercise of those rights and what damages, if any, tribes may recover as a result of the State's infringement of the treaty rights.

The State of Wisconsin petitioned the United States Supreme Court to review the Seventh Circuit Court's decision. The Supreme Court chose not to review the case. After the decision of the Seventh Circuit Court of Appeals, the five other Chippewa Bands located in Wisconsin joined in the lawsuit (Bad River, Lac du Flambeau, Mole Lake, Red Cliff, and St. Croix) and the six plaintiff tribes proceeded with the case in the District Court.

The District Court then divided the proceedings into three phases:

Phase 1: Declaratory Phase- determination of the nature and scope of the treaty rights;

Phase II: Regulatory Phase- determination of the permissible scope of state regulation; and

Phase Ill: Damages Phase-amount of damages, if any, to which the tribes are entitled for infringement on treaty rights.

Phase 1 proceedings to determine the nature and scope of the treaty rights were held in December 1985, before Judge James Doyle. Judge Doyle ruled that all resources in the ceded territory could be harvested by tribal members using all modern methods of harvest. Judge Doyle further ruled that the resources could be personally consumed or be traded or sold to anyone using the modern day market economy. Finally, the judge held that the tribes are entitled to as much of the resources as will ensure them a modest living.

Upon Judge Doyle's death in 1987, the case was assigned to Judge Barbara Crabb. The State sought to appeal Judge Doyle's ruling. However, Judge Crabb denied this request and proceeded with the case at the District Court level. On August 21, 1987, Judge Crabb reaffirmed the standard principles enunciated in other treaty rights cases from throughout the country. She held that the State may regulate in the interests of conservation provided that such regulations are reasonable and necessary for the conservation of a particular species or resource in a particular area, that they do not discriminate against Indians, and that they are the least restrictive alternative available. Judge Crabb also ruled that the State may impose such regulations as are reasonable and necessary to protect public health and safety However, she held that the tribes possess the authority to regulate their members and that effective tribal self-regulation precludes state regulation.

By agreement of all parties and of the court, Phase 11 was divided into "subphases" intended to address certain discrete regulatory questions or resources. The subphase proceedings that focused on walleye and muskellunge harvests were held in October, 1988. Many of the issues originally scheduled for trial at this subphase were resolved by mutual agreement. On March 3, 1989, Judge Crabb held that, as long as the tribes adopt regulations incorporating the biologically necessary conditions established by the State at trial, the tribes are self-regulating as to walleye and muskellunge. She ordered the State not to interfere with the tribes' regulation of the treaty walleye and muskellunge harvest, except as the tribes have otherwise agreed.

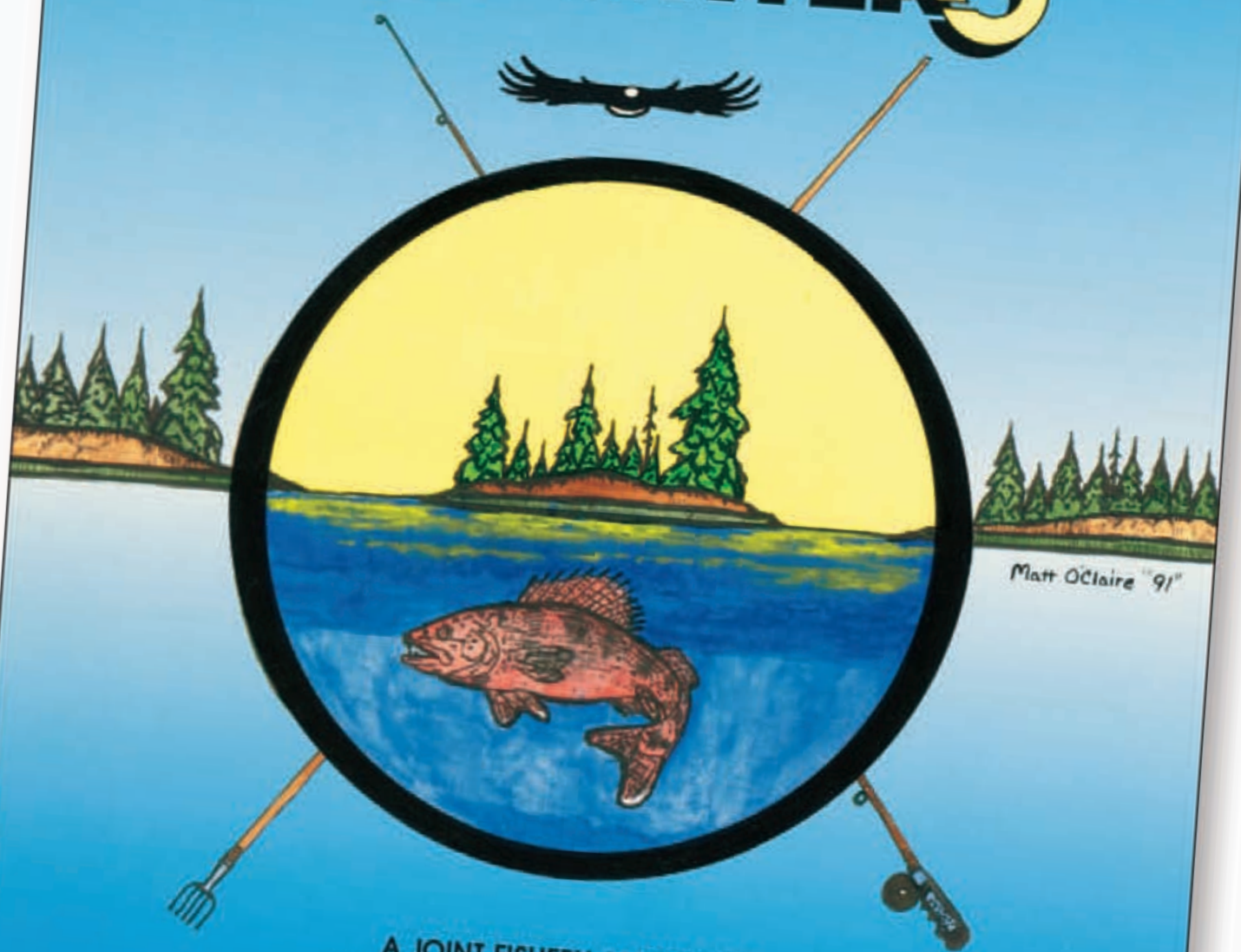
On May 9,1990, Judge Crabb issued a decision resulting from the deer subphase and from various other issues presented for her resolution. Consistent with her decision on walleye/muskellunge harvests, Judge Crabb enjoined the enforcement of state law provided that the tribes enact a system of regulations consistent with her decision. The tribes have done so. The most significant aspect of the May 9, 1990, deer decision is Judge Crabb's ruling that the tribal allocation of treaty resources is a maximum of 50% of the resource available for harvest.

As to fish species other than walleye and muskellunge, the tribes and the State have agreed that quotas are not necessary at this time. However, if the harvest increases significantly, a quota system for the species involved will be implemented.

On February 21, 1991, Judge Crabb issued her long awaited timber decision. She ruled that the Chippewa tribes did not reserve a treaty right to harvest timber commercially. However, the tribes do have a treaty right to gather miscellaneous forest products, such as maple sap, birch bark, and fire wood, subject to nondiscriminatory state and county regulations.

The timber decision was the final step at the District Court level. In 1991 the case finally concluded when neither the tribes nor the State appealed any of the above decisions.

CASTING LIGHT UPON THE WATERS



A JOINT FISHERY ASSESSMENT
OF THE WISCONSIN CEDED TERRITORY