

Expenditures of

Great Lakes Salmon & Trout

Stamp Revenues

Fiscal Years 1998 – 2001

Administrative Report #45



Mission Statement

*To protect and enhance our natural resources:
our air, land and water;
our wildlife, fish and forests
and the ecosystems that sustain all life.*

*To provide a healthy, sustainable environment
and a full range of outdoor opportunities.*

*To ensure the right of all people
to use and enjoy these resources
in their work and leisure.*

*To work with people
to understand each other's views
and to carry out the public will.*

*And in this partnership
consider the future
and generations to follow.*

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BACKGROUND OF THE GREAT LAKES SALMON AND TROUT STAMP PROGRAM

Creation of the Salmon and Trout Stamp Program

In the early 1980's, the loss of federal funding for non-native trout and salmon stocking prompted the creation of Wisconsin's Great Lakes Salmon and Trout Stamp Program. The Wisconsin Department of Natural Resources (DNR) faced the prospect of large reductions in the Great Lakes stocking program, including the elimination of coho salmon stocking. Concerned Great Lakes anglers initiated and promoted the legislation that created the Great Lakes Salmon and Trout Stamp (Salmon Stamp). Since 1982, every angler wishing to fish for salmon or trout in the Wisconsin waters of the Great Lakes must purchase a Great Lakes Salmon and Trout Stamp. Revenues from the sale of Salmon Stamps help support the DNR trout and salmon rearing and stocking program for the Great Lakes.

Guidelines for the use of Great Lakes Salmon and Trout Stamp revenues¹

Wisconsin state statute 29.191(5)(e) states "The Department shall expend the receipts from the sale of Great Lakes Trout and Salmon Stamps to supplement and enhance the existing trout and salmon rearing and stocking program for outlying waters and to administer this section."² These statutes clearly define that expenditures are (1) species limited to salmon and trout only, (2) geographically limited to the Wisconsin waters of Lakes Michigan and Superior and their tributaries, and (3) program limited to the rearing and stocking program. Projects funded by stamp monies must meet these three requirements or be related to the administration of these monies.

Species requirement

Salmon and Trout Stamp revenues may only be used for projects that pertain to salmonid species. These species include Pacific salmon (coho, chinook), trout (rainbow [steelhead], brown), and chars (brook trout, splake, and lake trout). Stamp money may not be used for projects specifically directed toward warm or cool water fishes such as percids, esocids, and centrarchids.

¹ *Excerpted from* Krueger, C. C. 1983. Expenditure Plan for Great Lakes Salmon and Trout Stamp Revenues. Administrative Report No. 18. Bureau of Fisheries Management, Department of Natural Resources, Madison, Wisconsin.

² Wisconsin Statutes and Annotations 1997-1999 (44th Edition). State of Wisconsin, Madison WI.

Geographical requirement

Projects that use stamp revenues must be geographically focused on the Great Lakes watershed. Specifically, the geographical scope of these projects may include tributaries accessible to Great Lakes salmon and trout, as well as Lakes Michigan and Superior themselves. Projects that pertain to trout waters other than the Great Lakes (e.g., Great Lakes tributaries inaccessible to Great Lakes salmon and trout, inland trout streams and lakes) may not use Salmon Stamp money.

Program requirement

Projects funded by Salmon and Trout Stamp money must also relate specifically to the Great Lakes stocking program. The stocking program includes a variety of activities and utilizes physical facilities which require equipment, maintenance, and labor.

Activities within the stocking program may be categorized as evaluation, research, and experimental activities or propagation activities (including facility developments).

Evaluation and research activities serve as a measure of success for the stocking program. Examples of evaluation and monitoring activities include lake-wide creel censuses, species and strain evaluations (tagging and marking studies), development of management plans (annual stocking plans, species plans, long-term plans), and annual propagation planning. Experimental activities test alternative methods of propagation and evaluation. Projects include evaluation of automatic feeders, innovative hatchery incubators, alternative fish foods, artificial reef substrates for egg incubation, new creel census methods, new fish marking methods, and gamete preservation techniques.

Propagation activities include hatchery operation costs (electricity, labor, fish food, waders, etc.), acquisition of fertilized eggs, egg incubation, fish rearing, and transportation of fish to stocking sites. Propagation activities also include the physical facilities that support the stocking program. Specifically, these facilities include raceways, rearing ponds, hatchery grounds, generators, pumps, water supply systems, vehicles, aerators, automatic fish feeders, land, engineering plans, and incubators. Salmon and Trout Stamp revenues may be used for maintenance, repair, or purchase of these facilities in order to fulfill the needs of the stocking program.

Sources of revenue for the Salmon Stamp account

All receipts from the sale of Salmon Stamps are placed in a Salmon Stamp account. Some revenues from the sales of patron licenses, two-day sport fishing licenses and collector stamps also contribute to the account. The price of each license to the consumer includes the base price of the license plus a fee that goes to the vendor. The vendor's fee is \$0.75 for the two-day license and the patron card; it is \$0.25 for the Salmon Stamp. Calculations and references in this report exclude vendor's fees.

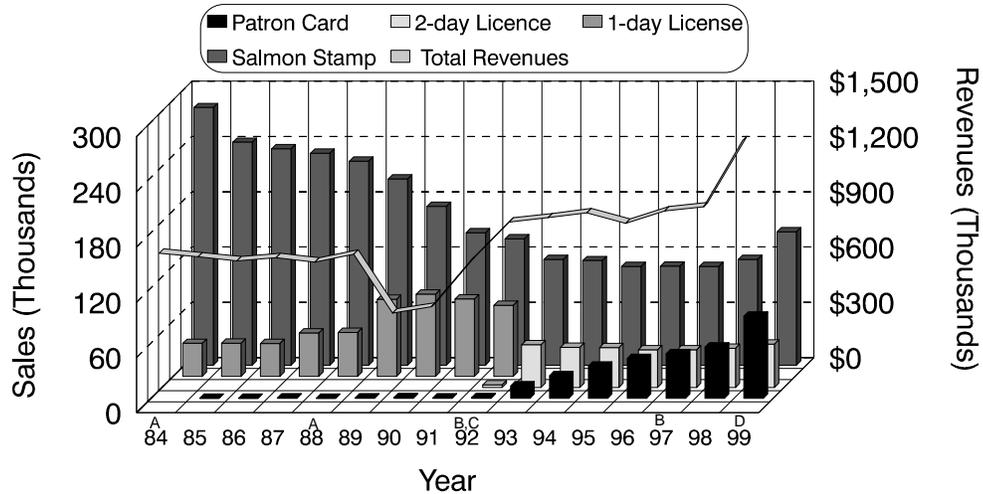
Funding for the Salmon Stamp account has changed over time. In 1984, the Wisconsin State Legislature approved a one-day fishing license for the Great Lakes, for a fee of six dollars. This inexpensive license allowed anglers to spend one day fishing for trout and salmon on the Great Lakes without being required to buy an annual Great Lakes Salmon and Trout Stamp. To prevent a sharp reduction in funding for the salmon and trout program, one-half of the revenues from the license supported Great Lakes salmon and trout projects. In 1988, the Legislature changed the one-day license by allowing inland fishing. Revenues from the new one-day license were split among Great Lakes salmon projects, inland trout habitat projects, and general fisheries work. In 1992, the Legislature replaced the one-day license with a two-day license for \$7.25, valid for the Great Lakes only. In 1997, the two-day license fee increased to \$9.25. By law, one-half of the revenues are placed in the Salmon Stamp account. Also in 1992, the Salmon Stamp fee was increased from \$3.00 to \$7.00. The Salmon Stamp account also receives funds from Patron License sales. For every Patron License sold, the Salmon Stamp account gets a share of the receipts (currently \$3.73 per Patron License).

In addition, collectors can purchase souvenir Salmon Stamps from previous years. All revenues from these sales contribute to the Salmon Stamp account.

The Salmon Stamp account pays for slightly less than 50% of the total Great Lakes trout and salmon program. Fishing license fees, general tax revenue, federal funding and donations also support the program.

A one-year spike in revenue collections occurred in FY 99 due to the DNR conversion to the Automated License Issuance System (ALIS).

License Sales Contributing to The Great Lakes Salmon and Trout Stamp Account Fiscal Years 1984 - 1999



- A - 1-day license fee \$6.00 in FY84 and increases to \$6.10 in FY88, valid for both inland and Great Lakes fishing beginning in FY88.
- B - 2-day License at \$7.25 (valid for Great Lakes only) replaces 1-day license in FY92 and in FY97 increases to \$9.25
- C - Salmon Stamp fee increase in FY92 (from \$3.25 to \$7.25) .
- D - A spike in sales occurred in FY99 due to implementation of ALIS

Benefits from the Salmon Stamp program

The Great Lakes Salmon and Trout Stamp has enabled the DNR to maintain and further develop the salmon and trout fisheries in Lakes Michigan and Superior and their tributaries.

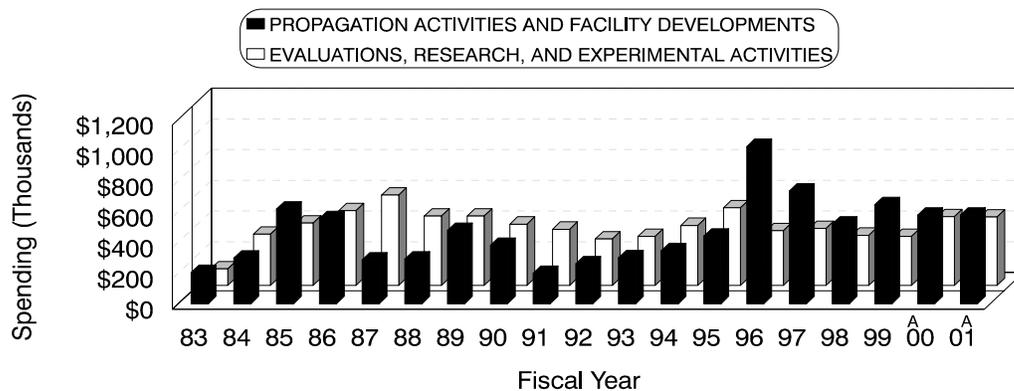
Since 1983, Salmon Stamp funds have:

- ✓ Provided over \$1.6 million for physical plant improvements at state hatcheries producing salmon and trout for the Great Lakes, including a new water supply line at the Bayfield Hatchery which produces over 1.1 million trout and salmon annually.
- ✓ Paid to produce and stock over 80 million coho & chinook salmon, brook & brown trout, splake, and steelhead.
- ✓ Allowed fish health personnel to work with other states to develop a preventative thiamine (vitamin B₁) treatment to control Early Mortality Syndrome (a condition resulting in massive losses of fry shortly after hatching).

- ✓ Paid for annual creel surveys that give Wisconsin the best data on salmon and trout harvest and catch rates in the entire Great Lakes region.
- ✓ Assisted in the development and operation of the Bois Brule River Lamprey Barrier, the Root River Steelhead Facility, the C.D. "Buzz" Besadny Anadromous Fisheries Facility, and the Strawberry Creek Weir. The Bois Brule River Lamprey Barrier provides an effective, non-chemical sea lamprey control method. The other facilities enhance stocking efforts by collecting eggs from feral salmon and trout. These facilities also collect essential data on fish returns, as all salmon and trout passing through the facilities can be counted.

Creel surveys, fish counts at weirs, and other means of analysis provide crucial data to the DNR fisheries biologists. The data are used to help adapt the fish stocking program to changes in fish populations so that fishing opportunities for salmon and trout anglers remain at their optimum. An excellent example of how Salmon Stamp-funded evaluations help to optimize the stocking program is the development and implementation of the Lake Michigan Steelhead Fishery Management Plan³. In the mid-1980's, creel census results indicated declining return rates associated with the use of the Mount Shasta strain of steelhead. This spurred an attempt to find better-performing strains of steelhead. The results of this search and subsequent evaluations led to the current stocking program of three steelhead strains (Skamania, Chambers Creek, and Ganaraska). Not only are the three strains excellent sport fish, the staggered timing of their spawning runs provide opportunities for stream anglers nine months of the year. In the recently updated and revised plan⁴, the Department proposes to develop one or more strains that will remain closer to shore during the summer than the present strains and provide additional fishing opportunities for near shore anglers.

Salmon Stamp Expenditures Fiscal Years 1983 - 1999



A - Projected spending shown for FY00 and FY01..

³Wisconsin Department of Natural Resources. 1988. Lake Michigan Steelhead Fishery Management Plan. Administrative Report No. 29. Bureau of Fisheries Management, Department of Natural Resources, Madison, Wisconsin.

⁴Wisconsin Department of Natural Resources. 1999. Lake Michigan Steelhead Fisheries Management Plan Administrative Report No. 44. Bureau of Fisheries Management, Department of Natural Resources, Madison Wisconsin.

READER'S GUIDE

This report summarizes public support for the Great Lakes salmon and trout fisheries program. It includes *planned* expenditures of Salmon Stamp (SS) revenues for fiscal years 1998, 1999, 2000 and 2001 as well as the total *actual* expenditures, from all sources for fiscal years 1998 and 1999. (The fiscal year runs from July 1 of one year through June 30 of the next.) In most cases, actual expenditures exceed Salmon Stamp contributions since other fishing license revenues also support this program. Expenditures are presented by project. Each project is categorized as Lake Michigan evaluation, research, and experimental activities; Lake Superior evaluation, research, and experimental activities; propagation activities (including physical facilities developments); or Great Lakes Salmon & Trout Stamp program administration (the cost of producing the Salmon Stamp and this report). Each category is further divided into three groups: (a) activities ending in FY98 and FY99, (b) activities continuing from FY99 through FY01, and activities beginning in FY00. Costs associated with travel, special services, supplies, program overhead, limited term employee (LTE) salaries and a few permanent salaries (which are directly funded by SS funds) are eligible categories for Salmon Stamp funding and are included in planned expenditures for each year. "Total Actual Expenditure" figures in Table 1 and the "Total Program Expenditures (all funding sources)" for individual project descriptions include all Salmon Stamp funds as well as other revenues supporting these programs. Generally, the difference is attributable to permanent salaries not covered by SS money. While permanent employee salaries paid by SS funds are described in this report for each category and LTE salaries are described by project, fringe benefits for both are summarized only in Table 1 on page ten. Beginning in the FY 2000-2001 biennium, funding for allocable expenses (a prorated amount of additional costs to the fisheries program for annual leave, compensatory time and routine office and administrative costs) will appear in the Salmon Stamp budget to reflect the amount of salmon stamp revenues that support these activities.



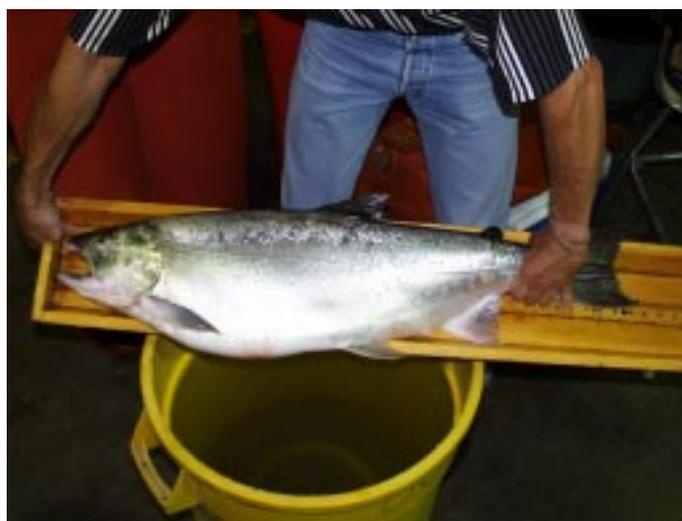
- Photo by Capt. Scott Gutschow

Providing Outdoor Recreation:

Our citizens and visitors enjoy outdoor recreation and have access to a full range of nature-based outdoor recreational opportunities

-- Goal 4 of the DNR Strategic Plan

A six-year plan encompassing planned expenditures for use of Salmon Stamp sale revenues in the years 1983-1988 was published in 1983⁵. Several summaries of expenditures of Salmon Stamp sale revenues have been published. The reports summarize the fiscal years 1983-1984⁶, 1985-1986⁷, 1987-1992⁸, 1993-1994⁹, 1995-1997¹⁰, and 1996-1999¹¹.



State record Coho Salmon (26 lb., 1.2 oz.) caught by John Gregory of Dallas ,Texas off Milwaukee in August 1999

⁵ Krueger, C. C. 1983. Expenditure Plan for Great Lakes Salmon and Trout Stamp Revenues, 1983-1988. Administrative Report No. 18. Bureau of Fisheries Management, Department of Natural Resources, Madison, Wisconsin.

⁶ Hansen, M. J. 1984. Expenditures of Great Lakes Salmon and Trout Stamp Revenues, 1983-1984. Administrative Report No. 22. Bureau of Fisheries Management, Department of Natural Resources, Madison, Wisconsin.

⁷ Welch, D. 1987. Expenditures of Great Lakes Salmon and Trout Stamp Revenues, 1985-1986. Administrative Report No. 26. Bureau of Fisheries Management, Department of Natural Resources, Madison, Wisconsin.

⁸ Horns, W. H., Zilker, D. A., & Perkins, L. November 1993. Expenditures of Great Lakes Trout and Salmon Revenues 1987-1992. Administrative Report No. 36. Bureau of Fisheries Management, Wisconsin Department of Natural Resources, Madison, Wisconsin.

⁹ Lentz, D. R. 1994. Expenditures of Great Lakes Trout and Salmon Stamp Revenues 1993-1994. Administrative Report No. 37. Bureau of Fisheries Management, Wisconsin Department of Natural Resources, Madison, Wisconsin.

¹⁰ Oldenburg, P. S. 1996. Expenditures of Great Lakes Salmon and Trout Stamp Revenues, Fiscal Years 1995-1997. Administrative Report No. 40. Bureau of Fisheries Management and Habitat Protection, Department of Natural Resources, Madison, Wisconsin.

¹¹ Keim, S. 1998. Expenditures of Great Lakes Salmon and Trout Stamp Revenues, Fiscal Years 1996-1999. Administrative Report No. 42. Bureau of Fisheries Management and Habitat Protection, Department of Natural Resources, Madison, Wisconsin.

For specific information on Great Lakes stocking numbers, two cumulative reports, updated annually, can be obtained from Bill Horns, Great Lakes Specialist, in Madison: *Wisconsin's Lake Michigan Salmonid Stocking Program* and *Wisconsin's Lake Superior Salmonid Stocking Summary*.

It is important to the Wisconsin Department of Natural Resources that you find this report useful. To better meet this goal, direct your suggestions for improving this report to:

Attn.: Bill Horns, Great Lakes Specialist

Wisconsin Department of Natural Resources
Bureau of Fisheries Management and Habitat Protection
P.O. Box 7921
101 South Webster Street
Madison, Wisconsin 53707
Phone: (608) 266-8782 or (608) 266-1877
E-mail: horns@dnr.state.wi.us

For more information on Great Lakes fishing and many other subjects, visit the DNR Website at:

<http://www.dnr.state.wi.us/>

Find the *Fish Wisconsin* page by clicking on

“Outdoor Activities”

and then

“Fishing”

Thank you for your interest and feedback.

CONTACT LIST

If you have any questions concerning this report, please contact the personnel listed by phone or e-mail with the specific project of interest.

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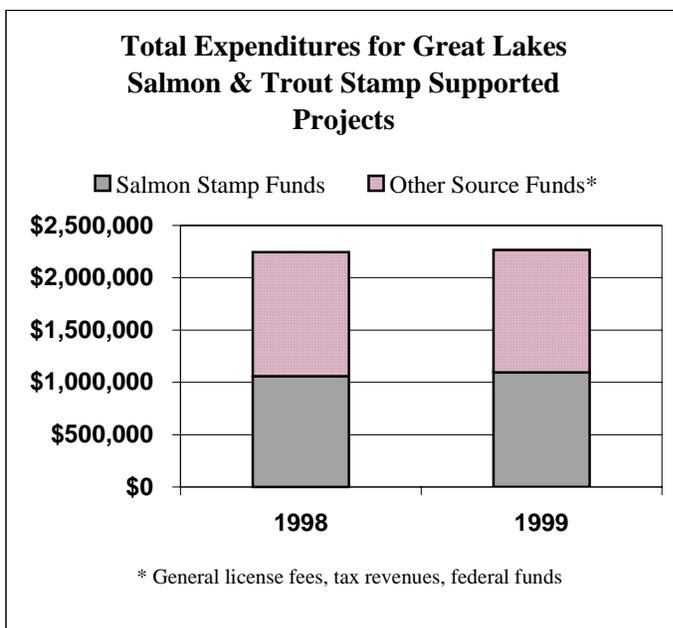
Table 1 Expenditures of Great Lakes Salmon and Trout Stamp revenues in fiscal years 1998-2001.

Planned Expenditures	FY98	FY99	FY00	FY01
Evaluation, Research, and Experimental Activities				
<i>Lake Michigan</i>				
Evaluation, Research, and Experimental Activities	\$224,135	\$226,875	\$212,111	\$211,581
Permanent Salaries	\$52,026	\$52,026	\$56,415	\$57,938
<i>Lake Superior</i>				
Evaluation, Research, and Experimental Activities	\$116,199	\$129,758	\$131,412	\$127,415
Permanent Salaries	\$39,803	\$39,803	\$46,707	\$47,968
Propagation Activities				
Operations	\$495,075	\$506,000	\$578,150	\$578,150
Permanent Salaries	\$24,165	\$24,165	\$26,349	\$27,061
Program Administration	\$12,780	\$6,500	\$13,000	\$6,000
Fringe Benefits	\$77,978	\$80,097	\$87,009	\$87,981
Allocable Expenses	\$0	\$0	\$80,952	\$80,952
Total Planned Expenditures of Great Lakes Salmon and Trout Revenues	\$1,043,067	\$1,066,891	\$1,232,105	\$1,225,043

Actual Expenditures of Great Lakes Salmon and Trout Revenues	\$1,058,312	\$1,092,677	N/A	N/A
Total Actual Expenditures for Great Lakes Salmon & Trout Stamp Supported Projects (All Funding Sources)	\$2,245,586	\$2,230,156	N/A	N/A

Table 2 Annual Great Lakes Salmon and Trout Stamp account activities, fiscal years 1998-2001.

	FY98	FY99	FY00	FY01
Beginning cash balance	\$546,790	\$588,402	\$955,242	\$823,037 ¹³
Revenues	\$1,099,923	\$1,459,517 ¹²	\$1,099,900 ¹³	\$1,099,900 ¹³
Total available funds	\$1,646,713	\$2,047,919	\$2,055,142 ¹³	\$1,922,937 ¹³
Total expenditures	\$1,058,311	\$1,092,677	\$1,232,105 ¹³	\$1,225,043 ¹³
Cash balance	\$588,402	\$955,242 ¹⁴	\$823,037 ^{13,14}	\$697,894 ^{13,14}



¹²A spike in revenue occurred in FY 99 because of DNR conversion to the Automated License Issuance System (ALIS). Under the new system, revenues reach the DNR immediately; under the previous collection system there was a delay in transmission of revenues to DNR.

¹³Estimated Figures

¹⁴Currently unforeseen capital improvements or emergency spending for salmon and trout production facilities may reduce cash balances for FY00 and FY01. Statewide capital improvement needs in the fish production system are under review.

LAKE MICHIGAN EVALUATION, RESEARCH, AND EXPERIMENTAL ACTIVITIES

Activities ending in FY98 and FY99

Charter Boat Report Technology

Planned SS Expenditure: \$2,400 in FY98 and, \$5,500 in FY99

Total Program Expenditures (all funding sources): \$0 in FY98 and FY99

Contact: Brad Eggold, Fisheries Biologist, Plymouth.

When combined with information about the sport harvest, timely information on the species composition of the charter industry catch is essential to decide how to best manage the Lake Michigan fishery. The charter fishing industry directs almost all of its fishing effort toward salmon and trout. Since 1992, the charter fishing industry caught 21 percent of the total Lake Michigan anadromous fish catch in Wisconsin waters while expending only seven percent of the total Wisconsin Lake Michigan fishing effort. This amazing 0.34 fish per hour catch rate makes this fishery highly successful and profitable. As a result, data on the charter fishing harvest is crucial to adapt regulations to best manage salmon and trout populations.

In 1996, the DNR obtained a \$5,000 grant from the Anadromous Fish Conservation Act to improve the charter boat reporting system on Lakes Michigan and Superior through the use of "transactional voice technology". Charter captains could report their harvest over the phone, loading the data directly into a database. An experimental system began in 1997 with 30 captains on Lakes Michigan and Superior. Salmon stamp funds paid for the necessary phone lines captains use to report their catch.

This project was intended to improve salmon and trout harvest reporting, increase the accuracy of the reporting system, decrease dramatically the amount of time and money needed to process charter data, and improve the enforcement of reporting regulations on the charter fishing industry.

Hearings were held on this project in early 1998. Unfortunately, charter captains attending these hearings were strongly opposed to this new charter reporting system. As a result of this opposition, the charter boat reporting technology was not pursued.

Assessment of PCB Assimilation in Sheboygan River Coho and Chinook

Planned SS Expenditure: \$900 in FY98

Total Program Expenditures (all funding sources): \$1,659 in FY98

Contact: Brad Eggold, Fisheries Biologist, Plymouth.

From 1987 to 1994 normal stocking as part of the yearly trout and salmon quotas was halted in the Sheboygan River because of elevated PCB levels. This project evaluated the effect of PCBs in the Sheboygan River system on PCB levels in salmon and trout. During fiscal year 1996, this evaluation included a comparison between concentrations of PCBs in returning adult fish that had been stocked in the Sheboygan and those that had been stocked in the Root and Pigeon Rivers. Data showed no significant difference in PCB concentrations in adult coho salmon and steelhead returning to the Sheboygan, Pigeon, and Root Rivers. These data prompted the lifting of the stocking ban in 1995.

Expenditures for this project covered the costs of marking fish that were stocked in the Sheboygan and Pigeon Rivers and collecting smolts, sub-adult, and adult steelhead and coho and chinook salmon for contaminant analysis. This project is now completed.



- Photo by Kevin Naze

Debbie Morrison holds her (27 lb., 2 oz.) Wisconsin record Steelhead caught July 27, 1997 in Lake Michigan near Kewaunee

Assessment of Brown Trout Movements

Planned SS Expenditure: \$6,030 in FY98 and \$3,230 in FY99

Total Program Expenditures (all funding sources): \$0 in FY98 and FY99

Contact: Brian Belonger, Fisheries Biologist, Peshtigo.

The goal of this project was to improve understanding of brown trout movements. During certain times of the year, brown trout are unavailable to anglers in Green Bay. It is unclear where the fish are during that time. The DNR planned to track ten brown trout fish using sonic transmitters. The results would help determine if brown trout were concentrating in areas not being fished by anglers or simply scattering. As a result, angling opportunities may improve because brown trout anglers will learn where to look for the fish. However, the time allocated to do this study was used to expand the study of Yellow Perch and thus it was not completed. (The Salmon Stamp funds planned for this project were used for other Salmon and Trout Stamp funded projects)

and not diverted to the Yellow Perch study.)

Activities continuing from FY99 through FY01

Assessment of Seeforellen Strain Brown Trout

Planned SS Expenditure: \$4,450 in FY98, \$4,450 in FY99, \$4,450 in FY00 and \$4,450 in FY01
Total Program Expenditures (all funding sources): \$10,418 in FY98 and \$7,107 in FY99

Contact: Brian Belonger, Fisheries Biologist, Peshtigo.

From 1991 to 1993, three strains of brown trout were stocked experimentally in Green Bay and Lake Michigan to increase the number of brown trout caught by anglers and to test the potential of a new strain for producing trophy-size fish. The three strains were domestic Wild Rose, feral Wild Rose, and Seeforellen.

DNR staff marked yearling brown trout (approximately 578,000 fish) with fin clips to identify ages of returning fish, to monitor their growth, and to determine the percentage of the spawning population of each age.

The relative annual survival of each strain varied. The trophy potential of seeforellen is very promising; they live longer, and most three- and four-year-old brown trout caught by anglers are members of this strain. Also, at older ages they are larger than the other strains. In 1996, the seeforellen strain broke the Wisconsin brown trout record twice, increasing the record by 2.6 pounds to 35.12 pounds.

Though this project was to be completed when brown trout from the 1991 through 1993 stockings were no longer found, it will now continue as a source of funding to allow collection of seeforellen for brood stock. Like their predecessors, the progeny have the advantage of larger growth and perform well against other strains. The current plan is to produce 25% of the brown trout stocked (about 250,000 fish) from this strain. Broodstock are being collected from the Menominee, Kewaunee and Root River trapping facilities. Fish stocked at those locations are marked with a fin clip to identify them as Seeforellen strain.

Lake Michigan Creel Survey

Planned SS Expenditures: \$92,000 in FY98, \$92,000 in FY99, \$106,500 in FY00 and \$106,500 in FY01
Total Program Expenditures (all funding sources): \$156,140 in FY98 and \$119,730 in FY99

Contact: Brad Eggold, Fisheries Biologist, Plymouth.

Creel surveys are conducted to monitor the sport harvest of salmon and trout from Lake Michigan. Creel clerks conduct the surveys from March through October to determine fishing pressure, harvest, harvest size, and harvest rates of salmon and trout. Creel clerks are stationed along the Lake Michigan shore and operate on a stratified, random schedule. They count anglers, cars, and boats to determine pressure. At the same time, they interview anglers to estimate the harvest as well as measure and weigh fish. Creel clerks conduct over 13,000 interviews each year. The clerks record additional data by collecting: fin clips, Floy tags, coded wire-tagged heads from harvested fish, stomach contents for diet studies, and scales for determining the age of fish.

When combined with information about the commercial and charter harvests, the creel data help to estimate total harvest. This aids in developing stocking strategies and in decisions on how to manage the Lake Michigan fishery. In addition, information from the creel surveys and index sampling helps to adapt regulations to best manage salmonid populations.

Analysis of Lake Michigan Sport Fishery and Creel Surveys

Planned SS Expenditure: \$13,000 in FY98, \$13,000 in FY99, \$13,800 in FY00 and \$13,800 in FY01
Total Program Expenditures (all funding sources): \$34,152 in FY98 and \$42,769 in FY99

Contact: Brad Eggold, Fisheries Biologist, Plymouth.

The goal of this project is ensure that the Lake Michigan sport fishery operates optimally, based on survey data from moored boats, charters, and from Lake Michigan creel surveys. These valuable data help to estimate fishing effort, catch rates, species composition and size of fish harvested. Data have been used to: 1) evaluate the effectiveness of stocking -- either fall fingerling accelerated-growth coho salmon or spring yearling coho salmon; 2) streamline the creel survey so the effort is directed at sites and times anglers are present; 3) analyze the yellow perch component of the fishery and provide recommendations on current seasons and bag limits for this important near-shore fishery; and 4) guide the geographic distribution of stocking.

In the future, this project will play the important role of evaluating coho salmon rearing techniques and the need for changing salmonid stocking levels and catch limits. The effects of regulation changes and the population dynamics of Lake Michigan will be closely monitored.

Lake Trout Restoration and Management

Planned SS Expenditure: \$29,000 in FY98, \$29,000 in FY99, \$20,251 in FY00 and \$20,251 in FY01
Total Program Expenditures (all funding sources): \$164,756 in FY98 and \$177,418 in FY99

Contact: Mike Toney, Lake Michigan Subteam Leader, Sturgeon Bay.

During 1998 and 1999, lake trout work was concentrated primarily on four project segments: 1) annually determining the amount of lamprey wounding and scarring on lake trout near Sturgeon Bay, Milwaukee, and in the Mid-lake Reef Complex; 2) assessing the continuing buildup of a mature spawning population consisting of several strains of lake trout in the Mid-lake Reef Complex; 3) comparing the relative survival of lake trout stocked at two different sizes as yearlings (10 vs 20/pound) near Sturgeon Bay; and 4) initiating a new spring, lake-wide survey at Wisconsin sites from Washington Island to Sheboygan. Lamprey wounding rates remain low but are showing some signs of increasing, especially in waters off Door County. In the historically productive Mid-lake Reef Complex, spawning surveys on the Sheboygan and East Reefs have documented a substantial spawning population consisting mostly of Marquette strain fish that have been stocked there annually since the early 1980's. Nine year classes of mature fish as old as 16 years of age have been found there. The experiment to determine which strain(s) are best adapted to life and reproduction in this area is still in the early phase since these year classes just started to mature during the last two years. The size-at-stocking experiment, begun in 1996 with the first of three successive-year-paired stockings, is also in its early phase but preliminary assessment data indicates little difference in survival between the two size groups. The objectives of the new spring lake-wide survey, jointly conducted by state, federal, and tribal agencies, is to establish trends in relative abundance, survival, growth, diet, and general health of lake trout and chinook. Agencies around the Lake want to detect the early signs of change in an effort to help avert catastrophes like the chinook die-off of the late 1980's. Surveys conducted during the past two years have not found any sign of natural lake trout surviving to the yearling stage in Wisconsin waters or elsewhere in Lake Michigan. Fish health specialists conducted various studies on lake trout samples collected through this project, including the possible link between lack of lake trout reproduction and Early Mortality Syndrome. Finally, the DNR continued to assist the U.S. Fish and Wildlife Service biologists with their federally funded project investigating the use of astro-turf egg incubators placed on the Jacksonport Deep Reef east of the Door Peninsula.

In 2000 and 2001, this project will contribute to the continuing joint state, federal, and tribal lake-wide

evaluation of lake trout stocked by the U.S. Fish and Wildlife Service. Staff from Sturgeon Bay and Milwaukee will continue to conduct joint assessments, using the research vessel Barney Devine and contracted commercial boats and gear, which will concentrate primarily on the four project segments discussed above. Samples of fish will be provided upon request to researchers nation-wide for special studies. Finally, fisheries staff from Wisconsin will join those from other agencies around Lake Michigan to critically examine lake trout rehabilitation efforts and results to date and produce a revised management plan.

Salmon and Trout Broodstock Management and Evaluation

Planned SS Expenditure: \$57,855 in FY98, \$54,695 in FY99, \$43,110 in FY00 and \$49,580 in FY01
Total Program Expenditures (all funding sources): \$90,673 in FY98 and \$102,676 in FY99

*Contact: Brad Eggold, Fisheries Biologist, Plymouth.
regarding coho, chinook and steelhead management at the Root River Steelhead Facility.
Steve Hogler, Fisheries Biologist, Manitowoc.
regarding steelhead management at Besadny Fisheries Facility.
Paul Peeters, Fisheries Biologist, Sturgeon Bay.
regarding coho and chinook management at Besadny and Strawberry Creek.*

Each year salmon and trout are stocked in many locations. Those stocked in Strawberry Creek, the Kewaunee River, and the Root River provide the basis for continuation of the salmon and trout program in Lake Michigan. When fish return to those rivers as adults attempting to spawn, fertilized eggs are collected for the hatcheries to raise. This project is an assessment of biological characteristics of the stocked fingerlings, yearlings, and the mature returning adults. Annual data collected include: length, weight, age, sex, fin clip, and the percent that survive to adulthood. Various lots of chinook, coho and steelhead are marked with fin clips or tags prior to stocking to evaluate the performance of different strains or to assess alternative rearing strategies and disease treatments. Long-term trends indicate whether the desired characteristics of size, health, time of spawning run, and survival are achieved.

The Strawberry Creek Weir is the primary site for the spawning of chinook salmon. The C. D. "Buzz" Besadny Anadromous Fisheries Facility, on the Kewaunee River, and the Root River Steelhead Facility are used for recovering adult coho salmon and steelhead, and serve as backup facilities for recovery of spawning chinook salmon. Annual reports are available for: 1) all species returning to the Root River Steelhead Facility (contact Brad Eggold), 2) coho and chinook salmon returning to the Besadny Facility and Strawberry Creek (contact Paul Peeters) and 3) steelhead returning to the Besadny Facility (contact Steve Hogler).

Feral Steelhead Broodstock Management Project

Planned SS Expenditure: \$11,000 in FY98, \$11,000 in FY99, \$10,000 in FY00 and \$10,000 in FY01
Total Program Expenditures (all funding sources): \$39,692 in FY98 and \$32,323 in FY99

Contact: Steve Hogler, Fisheries Biologist, Manitowoc.

This project is designed to: 1) assess the return of the three steelhead strains to the Besadny Facility, 2) collect biological data such as length, weight, and sex, and 3) mark adult fish to determine angler exploitation and movement throughout the Kewaunee River system as well as Lake Michigan. The data will be the basis for efficient management of the species providing anglers a continuation of a popular tributary stream and Lake Michigan fishery. Management of steelhead is part of the Lake Michigan Integrated Fisheries Plan, as well as the Steelhead Management Plan. Staff will assure that proper handling procedures are followed and the fish are released back into the river in the best possible condition



Propagation technician vaccinates for furunculosis

Sauk and Oak Creek Habitat Improvement Project

Planned SS Expenditure: \$7,500 in FY98, \$14,000 in FY99

Total Program Expenditures (all funding sources): \$6,591 in FY98 and \$12,650 in FY99

Contact: Brad Eggold, Fisheries Biologist, Plymouth.

Over the last ten years, Sauk Creek in Port Washington has become very wide and shallow. During periods of low water, many sections are difficult for trout and salmon to navigate. DNR personnel installed 25 luncker structures to provide cover and resting areas for trout and salmon, created a K-dam to provide a deeper plunge pool for fish migration, repaired 300 feet of eroding stream banks, and narrowed and deepened 2,000 feet of the stream to help migrating salmon and trout.

Through the efforts of the DNR, local sports clubs, and businesses, some steelhead, chinook and coho salmon were stocked in Sauk Creek in 1996 and will be stocked again in the future. This will improve the homing of the fish during spawning migrations and should provide better fishing. In addition, creel survey results from 1995 and 1996 indicate that fishing pressure has increased 200 percent and harvest and catch have increased 300 percent since improvements began.

In 1999, WDNR personnel repaired several luncker structures that had become non-functional, repaired the K-dam and re-channeled 600 to 1000 feet of degraded stream from the high school to the mouth. Efforts will continue to insure that Sauk Creek provides good habitat for stocked salmon and trout.

Since they were installed in 1990, the majority of the 27 luncker structures in Oak Creek have become non-functional due to heavy siltation and vandalism. Local anglers and fishing clubs have complained about the effects on the fishery. This project will keep the structures relatively clear of silt, provide routine maintenance, and stabilize the banks to improve fishing in the creek.

In 1998, WDNR personnel repaired 22 of the luncker structures by cleaning out the silt and rocks that had built up under the structures, applied new face rock, installed wooden posts to prevent the face rock from falling into the creek and fixed several eroding streambanks. These efforts should help the luncker structures provide cover and habitat for migrating salmon and trout.

The first goal is to improve the salmon and trout carrying capacity of Oak Creek by maintaining the existing luncker structures. The second goal is to stabilize the banks to control erosion and improve the water quality and clarity in Oak Creek and, ultimately, in Lake Michigan. The third goal is to maintain the luncker structures

in Sauk Creek.

Permanent Employee Salaries - Lake Michigan

Planned SS Expenditure: \$52,026 in FY98, \$52,026 in FY99, \$56,415 in FY00 and \$57,938 in FY01

Total Program Expenditures (all funding sources): \$54,055 in FY98 and \$55,309 in FY99

(Editor's Note: Total expenditures figures are offered here for reference. In actuality, permanent employee salaries are spread across the appropriate Lake Michigan projects listed above and are accounted for in the total program expenditure figures for those projects.)

Permanent employee salaries are for Fisheries Technicians at the Great Lakes Research Facility. They work on lake trout assessments, manage operations at the Root River Steelhead Facility, conduct surveys and evaluations, collect data, and manage databases.



**Nick Randazzo of Milwaukee shows his state record brook trout caught (6/8/99) in Port Washington.
The fish weighed 10 pounds 1 ounce and measured 26 1/8 inches**

Activities beginning in FY00

Oconto River Habitat Improvement Project

Planned SS Expenditure: \$12,000 in FY00

Contact: Brian Belonger, Fisheries Biologist, Peshtigo.

This is a pilot project on the lower Oconto River being done in partnership between the DNR and Trout Unlimited to improve habitat in an area devoid of holding habitat. The project includes placing 600 very large rocks, creating six current deflector islands, and digging a channel adjacent to each island. When completed, this work will greatly increase the diversity of habitat and provide holding areas seasonally for trout, salmon, smallmouth bass and a wide variety of fish and aquatic life. To date, Trout Unlimited, the Hornberg Fly Fishers, and the Oconto Sportsman's Club have committed \$13,000. toward this \$19,000 project. The level of partner funding will reduce the Salmon Stamp portion proportionately.

Nearshore Stocking of Rainbow Trout

Planned SS Expenditure: \$2,000 in FY00 and \$7,000 in FY01

Contact: Steve Hogler, Fisheries Biologist, Manitowoc.

Changes in the nearshore environment and strains of stocked trout and salmon have decreased the opportunity for anglers to catch these fish from piers and the shoreline of Lake Michigan. Forage concerns on Lake Michigan require a fish species that does not exclusively feed on alewife. Domestic rainbow trout are able to utilize all available forage and tolerate warmer nearshore temperatures better than other trout, making them an ideal choice for this type stocking program. This project is meant to determine a stocking plan to accomplish this goal.

With the assistance of Lake Michigan anglers at public meetings, two rainbow strains were selected to be stocked into Wisconsin's nearshore waters of Lake Michigan. The strains selected were the Arlee strain, currently stocked by Illinois into Lake Michigan and the London strain stocked into Lake Erie by Ohio. The program design consists of a three-year study with 10,000 fish of each strain being stocked at Kenosha, Milwaukee, Sheboygan, Manitowoc, Algoma, and Sister Bay starting in the spring of 2001. Evaluation of the results of the study will continue until 2006 before a final report will be issued. Because of forage concerns on Lake Michigan, an equal number of yearlings of another stocked nearshore species will have to be cut to accommodate the nearshore rainbow. After discussions with Lake Michigan anglers, it was decided to reduce the stocking of brook trout by 120,000 (the entire quota) for the duration of this study. This will be a temporary cut until the rainbow study can be evaluated.

LAKE SUPERIOR EVALUATION, RESEARCH, AND EXPERIMENTAL ACTIVITIES

Activities ending in FY98 and FY99

Iron River Watershed Habitat Improvement

Planned SS Expenditure: \$14,500 in FY98 and \$18,500 in FY99

Total Program Expenditures (all funding sources): \$16,553 in FY98 and \$35,701 in FY99

Contact: Dennis Scholl, Fisheries Biologist, Brule.

This is a trout stream habitat improvement project on the upper portion of the Iron River. The project involved constructing a series of current deflectors, channel constrictors, and boom covers to flush out a large accumulated sand bedload. Results so far are good, with gravel areas now exposed and deep holes scoured out.

This portion of the Iron River can become a Lake Superior anadromous fishery, depending on the future status of the Orienta dam and if provisions are made to provide for fish passage over the falls.

Activities continuing from FY99 through FY01

Brule River Lamprey Barrier Operation

Planned SS Expenditure: \$13,300 in FY98, \$14,652 in FY99, \$18,360 in FY00 and \$18,360 in FY01

Total Program Expenditures (all funding sources): \$27,855 in FY98 and \$20,928 in FY99

Contact: Dennis Pratt, Fisheries Biologist, Superior.

The sea lamprey, a parasitic species native to the Atlantic Ocean, invaded Lake Superior by the 1940's. Sea lampreys spawn and use the lake's tributary streams for reproduction and juvenile rearing purposes. Once mature, they enter the lake and begin killing fish. Each lamprey may kill 20 to 40 pounds of fish in this stage, and they represent the largest single threat to the Lake Superior fishery. Wisconsin DNR has built and maintains two sea lamprey barriers on tributaries of Lake Superior (Middle and Bois Brule Rivers). The Brule River sea lamprey barrier has trapped over 24,000 lampreys since 1986 and both barriers prevent them from reproducing in areas upstream. The Wisconsin barriers are an extremely important part of an international effort to reduce the impacts of sea lampreys on the Great Lakes fishery.

The Brule barrier supports the Lake Superior fishery in an additional way. Time-lapse video monitoring equipment counts all salmonids migrating upstream through the barrier's fishway, allowing accurate assessment of spawning runs. This information has helped the Department improve the management strategies of all Wisconsin's Lake Superior self-sustaining lake-run tributaries.

This past biennium we have used funds to upgrade some of the video equipment, redesign and repair the lamprey gate, repair erosion to the west bank of the Middle river barrier and upgrade a seasonally treacherous portion of the Brule access road.

Creel Survey and Index Sampling

Planned SS Expenditure: \$40,280 in FY98, \$41,432 in FY99, \$59,880 in FY00 and \$59,880 in FY01
Total Program Expenditures (all funding sources): \$121,864 in FY98 and \$102,609 in FY99

Contact: Steve Schram, Lake Superior Fisheries Biologist, Bayfield.

Annual creel surveys are conducted to monitor the sport harvest of salmon and trout from Lake Superior. Creel clerks randomly survey anglers at boat landings throughout the year. When combined with information about the commercial and charter harvests, the creel data help to estimate population size, to develop stocking strategies, and to decide how to manage the Lake Superior fishery. In addition, information from the creel surveys and index sampling helps to adapt regulations to best manage salmon and trout populations. These surveys also measure the success of other Lake Superior fishery management projects, including the Brule River lamprey barrier and the lake trout rehabilitation program.

In the year 2000, much more intense creel surveys will be conducted. Creel will be checked at all ports rather than the sample of ports that has been done in the past. Additional species will also be included in the survey. The Year 2000 survey will then serve as baseline data for gauging future studies. This process is in response to mandates agreed to with Native American Tribes involved with the DNR in fisheries management.



A technician uses a template to measure the length of an anadromous fish returning through the Brule River Lamprey Barrier. All fish returning through the barrier are video taped, counted and measured.

Lake Trout Restoration and Management

Planned SS Expenditure: \$37,500 in FY98, \$42,000 in FY99, \$45,860 in FY00 and \$41,860 in FY01
Total Program Expenditures (all funding sources): \$122,538 in FY98 and \$131,955 in FY99

Contact: Steve Schram, Lake Superior Fisheries Biologist, Bayfield.

Lake trout restoration and management addresses the two critical factors regulating lake trout populations: harvest levels and sea lamprey-related fish mortality. The controls on harvest include constraints on commercial and sport fishing. Lake trout populations have responded well to these regulations. Sea lamprey-related fish mortality remains an obstacle to rehabilitation, and lamprey controls must continue.

Expenses under this project cover costs associated with the spring and fall lake trout assessments. This project evaluates the long-term trends in the lake trout population including distribution, abundance, growth and mortality rates. Also, in an effort to improve natural reproduction, almost 16 million lake trout eggs were placed in "astro-turf bundles" on Devils Island Shoal as an alternate stocking strategy. A published report on the results of this study will be forthcoming.

DNR fisheries biologists use an accurate technique for determining the age of fish. By examining otoliths, bones from the inner ear, one can determine the age of fish. Lake trout are now known to live much longer than previously thought. This information allows a more accurate analysis of lake trout population age structures and can help the DNR adjust catch regulations and stocking strategies.

Lake trout restoration and management efforts have resulted in a tremendous comeback for lake trout, and stocking in the Apostle Islands area has been discontinued. One excellent indicator of the health of the Lake Superior lake trout population is the increasing number of native lake trout caught as a percentage of total lake trout caught. For instance, in the Ashland-Bayfield area, 33.9 percent of all lake trout caught in 1985 were native lake trout. By 1994, the level had risen to 82.1 percent.

Despite the recent successes, complete restoration has not been achieved. Efforts to monitor harvest, lamprey-related mortality, age, and survival must continue to keep the Lake Superior lake trout population healthy and offer good angling opportunities.

Management Plan for Lake Superior Tributaries

Planned SS Expenditure: \$9,330 in FY98, \$11,783 in FY99, \$5,352 in FY00 and \$5,352 in FY01
Total Program Expenditures (all funding sources): \$57,784 in FY98 and \$39,855 in FY99

Contact: Dennis Pratt, Fisheries Biologist, Superior.

This project focuses on protecting, restoring, and enhancing the unique, self-sustaining lake-run salmon and trout fishery along the Lake Superior shoreline. The coldwater tributaries flowing into Lake Superior are unique trout resources in Wisconsin. They are the spawning and nursery areas for lake-run rainbow and brown trout as well as coho and chinook salmon. The majority of these fisheries is self-sustaining and, if managed properly, can provide stable lake and stream fisheries without expensive stocking.

During the next phase of this project, DNR staff will take steps toward the restoration of tributary fisheries. Many specific activities will contribute to this effort:

- Categorize each tributary stream section on the basis of its production of each salmon and trout species.
- Identify barriers to fish habitat development, such as lack of spawning areas and excess debris.
- Prioritize goals and objectives to protect and restore each tributary fishery.
- Develop a list of each tributary's problems and tactics to overcome them.
- Use this information to develop a basin-wide watershed management plan.

One important tributary that may be restored in the future is the Iron River. When Northern States Power Company removes its abandoned Orienta dam, the Iron River's previous connection with the Lake Superior fishery can be restored. Three important steps are essential to its restoration. First, a new lamprey barrier will prevent lamprey access to the upstream watershed. Second, additional fish blocks in two tributaries to the Iron River will keep salmon and trout from Lake Superior a safe distance from the Iron River National Fish Hatchery. Finally, efficient fish passage over the lamprey barrier and tributary restoration can begin.

Brook Trout Management Plan for Wisconsin's Lake Superior Basin

Planned SS Expenditure: \$1,289 in FY98, \$1,391 in FY99, \$1,960 in FY00 and \$1,960 in FY01
Total Program Expenditures (all funding sources): \$8,203 in FY98 and \$12,604 in FY99

Contact: Dennis Pratt, Fisheries Biologist, Superior.

Brook trout were the only known salmonid species originally inhabiting coldwater tributaries flowing into Wisconsin's Lake Superior. Early visitors reported abundant stream populations and a unique group of brook trout they called rock trout, which were caught along the rocky shoreline of the Bayfield Peninsula and seasonally in streams, when they ascended to spawn. Many different factors led to brook trout decline in the late 1800's and early 1900's. Today, brook trout populations are very small in comparison to the years prior to the late 1800's. During the last biennium this project has funded Wisconsin's activities on the brook trout subcommittee of the Great Lakes Fishery Commission leading to the development of lake-wide rehabilitation plan to improve brook trout abundance. During this current biennium, funds will be used to develop Wisconsin's strategies that might be implemented to attempt restoration of brook trout in Wisconsin's portion of the Lake Superior drainage.

Permanent Employee Salaries - Lake Superior

Planned SS Expenditure: \$39,803 in FY98, \$39,803 in FY99, \$46,707 in FY00 and \$47,968 in FY01

Total Program Expenditures (all funding sources): \$41,597 in FY98 and \$ 45,791 in FY99

(Editor's Note: Total expenditures figures are offered here for reference. In actuality, permanent employee salaries are spread across the appropriate Lake Superior projects listed above and are accounted for in the total program expenditure figures for those projects.)

Permanent employee salaries are for a Fisheries Biologist and a Fisheries Technician on Lake Superior. The Fisheries Biologist conducts evaluations and research to support the fish stocking program for the Lake Superior watershed. The primary responsibilities of the Fisheries Technician are to conduct creel surveys and to monitor the harvest of lake trout by commercial fishers.

Activities beginning in FY00

None



Fish being weighed before being placed in trucks for distribution

PROPAGATION ACTIVITIES

Activities ending in FY98 and FY99

Nevin Hatchery Renovation

Planned SS Expenditure: \$0 in FY98
Total Program Expenditures (all funding sources): \$2,808 in FY98

Contact: Rod Patrick, South Central Regional Operations, Fitchburg.

The Nevin Hatchery is the oldest state fish hatchery in Wisconsin. It has undergone substantial development and redesign to enhance its fish rearing capabilities. These modifications forced the hatchery to reduce production by approximately 50 percent. Funding to complete the renovation became unavailable. During this biennium a new, reduced-cost design for the renovation of the hatchery was developed. It will lead to the hatchery reaching its previous production goals while maintaining quality.

Activities continuing from FY97 through FY99

Basic Hatchery Services

Planned SS Expenditure: \$34,975 in FY98, \$35,900 in FY99, \$35,650 in FY00 and \$35,650 in FY01
Total Program Expenditures (all funding sources): \$247,365 in FY98 and \$273,326 in FY99

*Contact: Larry Nelson, Hatchery Superintendent, Bayfield Hatchery, Bayfield.
Randy Link, Hatchery Superintendent, Kettle Moraine Springs Hatchery, Adell.
Gary Holzbauer, Hatchery Superintendent, Thunder River Rearing Station, Crivitz.
Alfred Kaas, Hatchery Superintendent, Lake Mills Hatchery, Lake Mills.*

Funds expended in this project area are for basic operating services at Bayfield, Kettle Moraine Springs, Thunder River and Lake Mills Hatcheries. These expenses include: facilities and grounds maintenance; operational expenses such as telephones, electricity and heat; staff travel costs; supplies; computer equipment and costs associated with conducting public educational events and tours.



New raceway covers at Kettle Moraine Springs Hatchery. White covers in foreground paid with Salmon

Stamp funds. Dark covers in the rear donated by Great Lakes Sport Fishing Clubs.

Coldwater Production

Planned SS Expenditure: \$359,100 in FY98, \$369,100 in FY99, \$428,700 in FY00 and \$428,700 in FY01
Total Program Expenditures (all funding sources): \$933,881 in FY98 and \$926,908 in FY99

*Contact: Larry Nelson, Hatchery Superintendent, Bayfield Hatchery, Bayfield.
Randy Link, Hatchery Superintendent, Kettle Moraine Springs Hatchery, Adell.
Alfred Kaas, Hatchery Superintendent, Lake Mills Hatchery, Lake Mills.
Doran Arrowood, Hatchery Superintendent, Langlade Rearing Station, White Lake.
Gary Holzbauer, Hatchery Superintendent, Thunder River Rearing Station, Crivitz.
Jim Martin, Hatchery Foreman, Westfield Hatchery, Westfield.
Steve Fajfer, Hatchery Superintendent, Wild Rose Hatchery, Wild Rose.*

This project covers production costs at six hatcheries. Because activities vary by hatchery, a short discussion concerning each follows.

Bayfield Hatchery

Annually, Bayfield Hatchery produces up to 1.5 million fingerling and yearling trout and salmon for Lakes Michigan and Superior. These funds cover all of the hatchery's spawning, hatching, rearing and stocking costs. The majority of this funding will cover hatchery operation expenses that are directly related to Great Lakes fish propagation and stocking, such as electricity costs, fish food, vehicle operation and maintenance, building operation and maintenance, and supplies and equipment. Also included is debt service on construction on a water pipeline completed in the previous biennium.

Kettle Moraine Springs Hatchery

Kettle Moraine Springs Hatchery is part of the DNR's very successful steelhead stocking program. It produces three strains of steelhead: approximately 181,000 each of Skamania and Chambers Creek and 161,000 of Ganaraska per year. Salmon Stamp funds cover operation expenses that are directly related to fish propagation and stocking, such as: electricity costs, fish food, vehicle operation and maintenance, building repairs and maintenance, and supplies and equipment. These funds pay for the production of steelhead and the incubation and hatching of coho eggs to be reared at Lake Mills Hatchery. The hatchery's own distribution truck stocks fish along the Lake Michigan shore.

During the past biennium, the predator-proofing system for the outdoor steelhead production areas has been enhanced using Salmon Stamp funds as well as funds donated by Great Lakes Sport Fishing Clubs and private individuals. A well reconstruction project was completed allowing additional well water to be pumped for fish rearing purposes. Future projects include development of a waste water settling pond, reroofing a hatchery building, and the installation of an ozone disinfection system.

This project also covers expenditures for spawning, broodstock capture, and rearing of salmon and trout at sites away from the hatchery. Typically, this includes staff assistance during the capture and spawning of broodstock at the Besadny Facility and at the Root River Steelhead Facility, for rearing and imprinting of fish at the Kenosha Cooperative Rearing Pond, and operation of an egg incubation facility.

Donations from Great Lakes Sport Fishing Clubs, especially Ozaukee, Sheboygan and Milwaukee, have significantly enhanced program activities. These include an oxygenator, an emergency power generator, and raceway covers as well as many other items.

Lake Mills Hatchery

Salmon and Trout Stamp revenue will again be used to support the coldwater rearing program for coho salmon at Lake Mills Hatchery during the coming biennium. Expenditures cover the cost of fish food; electricity for wells, freezers, and other needs; and facility and equipment maintenance needs related to salmon production. The hatchery produces 89,000 fingerlings that are transferred to other hatcheries for rearing. Also, 100,000 fall fingerlings and 120,000 spring yearlings are stocked directly from the hatchery

Langlade Rearing Station

The primary assignment of the Langlade State Fish Rearing Station is to rear and stock brown trout. Each spring, Langlade receives small fingerlings from St. Croix Fish Hatchery and raises them until they are large enough to stock in Lake Michigan. Salmon Stamp funds help pay for the rearing and stocking of approximately 50,000 fingerling and 70,000 yearling brown trout. To prevent widespread disease, the fish are vaccinated; as a result, less than one percent are lost to disease each year. Salmon Stamp funds cover the costs of fish production, such as: fish food, electricity, pond and raceway maintenance, equipment purchase and maintenance, and stocking costs. Funds were used to purchase automatic feeders during the past biennium. Plans for the next two years include the installation of riprap rock walls to stabilize ponds and improve wiring to aerators.

Thunder River Rearing Station

Each year, the Thunder River Rearing Station raises 240,000 brown trout to be stocked in Lake Michigan and Green Bay. These fish are hatched at Wild Rose Fish Hatchery and then transported to Thunder River. Also, in the coming biennium, 79,000 coho per year will be hatched in Lake Mills and reared at Thunder River. Salmon Stamp funds pay for fish food, air pumps to provide adequate oxygen and to reduce ice cover, and electricity. During the past biennium, Salmon Stamp funds covered maintenance and repair of buildings and a fish distribution tank. In the next two years, an ongoing project to renovate rearing ponds will continue. Gravel will be placed at the bottom of the ponds and gradients will be smoothed out to improve drainage. This scenic rearing station is a favorite tour spot for school groups as well as general public.

Westfield Hatchery

The Salmon Stamp program provides funds for the annual hatching and rearing of 500,000 chinook fingerlings at the Westfield Hatchery. In addition, the hatchery uses the money to rear approximately 55,000 coho salmon hatched from eggs at the Lake Mills Hatchery. These expenses include electricity costs, fish food, facility operation and maintenance, supplies and equipment. Because an artesian well is the only water source for the hatchery, rainfall is monitored carefully using a new electronic rain gauge. Funds were used during the past biennium for well development and aeration.

Wild Rose Hatchery

The Wild Rose Hatchery, the DNR's largest coldwater fish hatchery, hatches and rears brown trout and chinook salmon to be stocked along the Lake Michigan shore. Salmon Stamp funds pay for labor costs associated with hatchery production. This project funds the collection of fertilized eggs from wild seeforellen brown trout captured in the Menominee River. Recently, several efforts have been aimed at reducing mortality and improving fish health. In the spring, an oxygen injection system remedies low-oxygen and high-nitrogen conditions. Since 1996, fish have been vaccinated against furunculosis; results have been very good. Sand filters keep out sand and silt to prevent gill problems and reduce egg mortality during the incubation period. The Wild Rose Hatchery successfully produces 1.3 million chinook salmon smolts and 350,000 fall fingerling and 400,000 spring yearling brown trout each year. The hatchery's efforts produce great results; fish reared at Wild Rose broke the Wisconsin brown trout record twice in 1996.

The Wild Rose Hatchery was established in 1908. Most of the raceway and pond walls were built in the 1930's, and the present water supply and wastewater collection systems were built in the 1950's. Periodic

maintenance has not kept pace with deterioration. The current facilities cannot meet new state standards for wells, groundwater protection, and wastewater discharge. An aquacultural engineering consultant will redesign the raceways and rearing ponds, water collection system, and the wastewater treatment system. The first phase of a groundwater survey was completed. A new high-capacity well will be needed sometime in the future to support fish production at the hatchery



Tom Van Effen of Wild Rose Hatchery places brown trout eggs in hatching trays.

Coldwater Distribution

Planned SS Expenditure: \$8,200 in FY98, \$5,000 in FY99, \$5,500 in FY00 and \$5,500 in FY01
Total Program Expenditures (all funding sources): \$26,249 in FY98 and \$26,862 in FY99

*Contact: Alfred Kaas, Hatchery Superintendent, Lake Mills Hatchery, Lake Mills.
Richard Rebicek, Southeast Regional Operations, Eagle.
Gary Holzbauer, Hatchery Superintendent, Thunder River Rearing Station, Crivitz.
Jim Martin, Hatchery Foreman, Westfield Hatchery, Westfield.*

This project covers the cost of transporting fish to be stocked in Great Lakes waters from the three hatcheries above as well as supporting transportation stocking costs of the Southeast Regional Operations Center.



Fish reared at the Thunder River Hatchery being stocked in Lake Michigan waters.

Operate Anadromous Fisheries Facilities

Planned SS Expenditure: \$92,800 in FY98, \$96,000 in FY99, \$108,300 in FY00 and \$108,300 in FY01
Total Program Expenditures (all funding sources): \$151,615 in FY98 and \$195,709 in FY99

*Contact: Mike Baumgartner, Fish Propagation Technician, C. D. "Buzz" Besadny Anadromous Fisheries Facility, Kewaunee.
Richard Rebicek, Southeast Regional Operations, Eagle.*

Salmon Stamp funds directly support weirs on Lake Michigan.

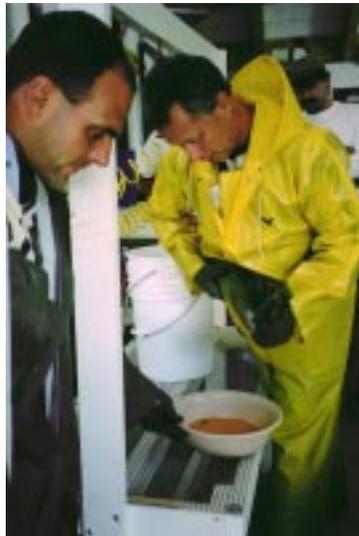
Besadny Anadromous Fisheries Facility

Each year approximately three and one half million high-quality eggs from spawning trout and salmon are collected at the Besadny facility by trapping adult anadromous fish. Hatcheries rear eggs until the fish are large enough to be stocked back into Lake Michigan. The Besadny facility operates in spring and late summer for steelhead and throughout the fall for other trout and salmon. The Strawberry Creek weir operates in fall for chinook salmon collection. These facilities are essential to Wisconsin's successful fish stocking program. Public education is also an important part of facility operations; informational displays and signs guide visitors. Salmon stamp funds contribute to the maintenance and operations costs of the facility. In the coming biennium, additional signs will be developed to improve the self-guided tour for visitors.

Root River Steelhead Facility

The Root River Steelhead Facility traps adult trout and salmon for collection and fertilization of eggs. Hatcheries rear the eggs until the fish are large enough to be stocked back into Lake Michigan. All of the steelhead eggs collected at Root River are reared at Kettle Moraine Springs Hatchery; all of the coho salmon eggs are hatched at Kettle Moraine Springs Hatchery and then reared at Westfield Hatchery, Thunder River Rearing Station, and Lake Mills Hatchery. The weir also captures broodfish for use at Kettle Moraine Springs Hatchery. In addition to fish collection activities, Salmon Stamp funds also cover the costs of maintaining the facility and nighttime security. This facility is essential to Wisconsin's successful fish stocking program. It is an excellent location for collecting data about Lake Michigan salmon and trout populations. Public education is also an important part of facility operations; new informational displays will guide visitors.

**Harvesting eggs at
the Root River Weir**



Permanent Employee Salaries - Propagation Activities

Planned SS Expenditure: \$24,215 in FY98, 23,684 in FY99, \$26,349 in FY00 and \$27,061 in FY01

Total Program Expenditures (all funding sources): \$ \$25,071 in FY98 and \$25,832 in FY99

(Editor's Note: Total expenditures figures are offered here for reference. In actuality, permanent employee salaries are spread across the appropriate propagation projects listed above and are accounted for in the total program expenditure figures for those projects.)

Permanent employee salaries are for a Fisheries Technician at the Kettle Moraine Springs Hatchery whose primary duties are incubating coho eggs and propagating and rearing steelhead.

Great Lakes Salmon & Trout Stamp Program Administration

Activities ending in FY98 and FY99

None.

Activities continuing from FY99 through FY01

Administer the Salmon and Trout Stamp Program

Planned SS Expenditure: \$6,500 in FY98, \$6,500 in FY99, \$6,000 in FY00 and \$6,000 in FY01
Total Program Expenditures (all funding sources): \$6,983 in FY98 and \$4,992 in FY99

Contact: Bill Horns, Great Lakes Specialist, Madison.

This project covers costs associated with the judging and printing of the Great Lakes Salmon and Trout Stamp.

Salmon Stamp Expenditure Report And Plan

Planned SS Expenditure: \$6,280 in FY98, \$0 in FY99, \$7,000 in FY00 and \$0 in FY01
Total Program Expenditures (all funding sources): \$13,071 in FY98 and \$0 in FY99

Contact: Bill Horns, Great Lakes Specialist, Madison.

These expenses cover the costs of limited term employees to perform research, gather data, and write and assemble this Salmon Stamp Expenditure Report.

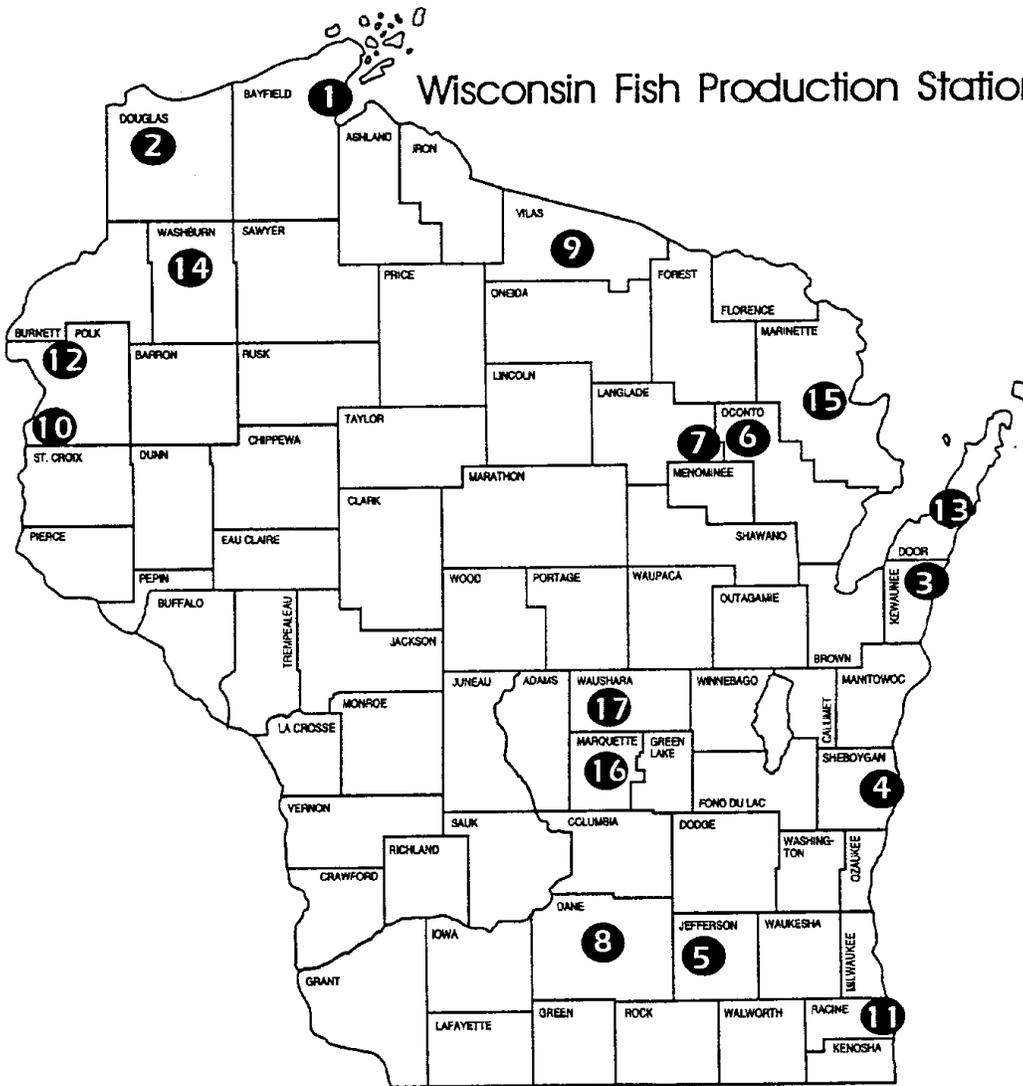
Activities beginning in FY00

None.

Permanent Employee Salaries

None.

Wisconsin Fish Production Stations



<u>Facilities</u>	<u>Phone</u>	<u>Type of Fish Production</u>
1 Bayfield	(715) 779-5430	Coldwater
2 Brule	(715) 372-4820	Coldwater
3 Besadny Spawning Facility	(920) 388-2105	Coldwater
4 Kettle Moraine Springs	(920) 528-8825	Coldwater
5 Lake Mills	(920) 648-8012	Coldwater, Cool/warmwater
6 Lakewood	(715) 276-6066	Coldwater
7 Langlade	(715) 882-8757	Coldwater
8 Nevin	(608) 275-3246	Coldwater
9 Oehmcke	(715) 356-5211	Cool/warmwater
10 Osceola	(715) 294-2525	Coldwater
11 Root River Spawning Facility	(414) 638-0134	Coldwater
12 St. Croix Falls	(715) 483-3535	Coldwater
13 Strawberry Creek Weir	(920) 746-2860	Coldwater
14 Thompson	(715) 635-4147	Cool/warmwater
15 Thunder River	(715) 757-3541	Coldwater
16 Westfield	(608) 296-2343	Coldwater
17 Wild Rose	(920) 622-3527	Coldwater, Cool/warmwater