

# **Appendix I**

## **Michigan Department of Natural Resources**

Historical Review and Management  
Prescription for Lake Leelanau Fishery



FISHERY MANAGEMENT PRESCRIPTION

Watershed Undesignated  
Sub-Watershed Lake Leelanau

Water NORTH LAKE LEELANAU

**PRESCRIPTION IDENTIFICATION**

Unit Central Lake Michigan  
Number 739  
Date 01/17/2001

**WATER IDENTIFICATION**

Primary County Leelanau

Prepared By Mark Tonello  
Valid From 02/15/2001  
Expires 02/15/2007  
Status Approved  
Replaces No. 69305  
Dated 12/15/1993

T / R / S 30N 12W 10  
Area (Ac) 2950.0  
Riparian Ownership STATE  
Last Yr. Surveyed 2000

**I. PROBLEM/OPPORTUNITY LIST**

- 1. There is little or no natural reproduction of lake trout in North Lake Leelanau.

**II. ACTION LIST AND SCHEDULE**

- A. Stock 20,000 (6.8/acre) yearling lake trout annually.

Begin Date	End Date	EA Excl	GL Issue	Mark/Tag
01/01/2001	06/01/2006	Y	N	N

**III. EXPECTED RESULTS, BENEFITS, AND LONGEVITY**

North Lake Leelanau was surveyed in 2000, and good numbers of lake trout were observed. No brown trout were observed in the survey, and although we have received reports of some incidental catches of large brown trout, we aren't sure of the effort that is actually directed at brown trout. Angler reports regarding lake trout have been very positive. North Lake Leelanau has an excellent forage base consisting of smelt and cisco. This forage base should continue to support the stocked lake trout.

**IV. ALTERNATIVE ACTIONS AND REASONS NOT SELECTED**

- B. Cease stocking lake trout.  
Reason Not Selected:  
Lake trout fishery would collapse.

**V. RESOURCE REQUIREMENTS - Fish Stocking, Capital Outlay, Other**

Activity	Cost (All Years)
Capital Outlay	\$0.
Fish Stocking	\$87,600.
Other	\$0.

**VI. ENVIRONMENTAL CONSIDERATIONS**

1. Threatened/Endangered Species	N	8. Toxicant	N	14. Flood Plain	N
2. Designated Wild or Scenic Area	N	9. Species Introduction	N	15. Wetland	N
3. Historical	N	10. Land Manager Approval Needed	N	16. Bottomland/Shoreland	N
4. Socio-Economic Considerations	N	11. Farm and Forest Land	N	17. Discharge	N
5. Public Opposition or Concern	N	12. Federal Land	N	18. Energy	N
6. Health & Safety	N	13. Habitat Alteration	N	19. Cumulative Impacts	N
7. Construction or Modification	N				



### FISHERY MANAGEMENT PRESCRIPTION

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Sub-Watershed **Lake Leelanau**

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Primary County  
**Leelanau**

#### VII. ENVIRONMENTAL ASSESSMENT

Prescription is Categorically Excluded (Y/N?): **Y**  
Public Involved and Supportive (Y/N?): **N**

#### VIII. COORDINATION OR OUTSIDE ASSISTANCE NEEDED (Specify and Describe)

None needed.

#### IX. ATTACHMENTS

Stocking Request Number	512
E.A.R. (Y/N)	N/A
Public Involvement Plan (Y/N)	N/A
Maps (Y/N)	N/A
Plans (Y/N)	N/A
Other (List)	N/A

#### XI. APPROVALS

Approval Level	Approved By	Approval Date
FMU Approval	Tom Rozich	02/15/2001



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#### PRESCRIPTION COMMENTS

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Statewide Comments      II. ACTION LIST AND SCHEDULE      DNRRES\_GRISCHK  
01/19/2001 10:17:00

Picky, picky...please add "yearling" to both items A. and B.

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Writer Comments      II. ACTION LIST AND SCHEDULE      DNRRES\_TONELLO  
01/22/2001 15:48:00

Added "yearlings" to text.

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Writer Comments      II. ACTION LIST AND SCHEDULE      DNRRES\_TONELLO  
01/29/2001 16:58:00

After consultation with Ralph and Tom, we have decided to cut the BNT stockings. If we get a large public outcry, then we will begin stocking them again. We are fairly sure they are surviving well, but we don't think they are pursued by the public all that much. This will test that. I have changed the appropriate parts of the Prescription to reflect this.

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Statewide Comments      II. ACTION LIST AND SCHEDULE      DNRRES\_GRISCHK  
01/31/2001 09:59:00

This one's all set.

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Statewide Comments      III. EXPECTED RESULTS, BENEFITS, AND LONGEVITY      DNRRES\_GRISCHK  
01/19/2001 10:19:00

There is no mention of whitefish in this discussion. The previous prescription suggested a Year 2000 survey to determine the success of whitefish planting. Do you have any information on the whitefish fishery?

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Writer Comments      III. EXPECTED RESULTS, BENEFITS, AND LONGEVITY      DNRRES\_TONELLO  
01/22/2001 15:56:00

Good point Todd. Actually those stocked whitefish are doing quite well (1995; 27,192 sf). I don't know if the anglers have caught on yet, but we caught 28 LWF from 12-19" in the gillnets. It will be interesting to see if they become a self-sustaining population. Age and growth has not been done yet, so I don't know if they were from different age classes or not. I did not request more because I know we do not have an active LWF hatchery program at present, and I'm not sure the demand is there. However, this proves that it can be done. I'd like to write it up as a Tech. Report or something, but...

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FMU Review Comments      III. EXPECTED RESULTS, BENEFITS, AND LONGEVITY      DNRRES\_BRAUNSC  
01/24/2001 15:30:00

This is a fairly expensive stocking program with very little evaluation. I'd like to see the survey results (and any angler information) evaluated in more detail before it is simply extended for 6 more years at a cost of \$200,000. Could it simply be extended one year and the latest survey analyzed before it comes up for renewal next winter? Maybe some money and fish could be saved by alternate year stockings if the lake trout are surviving. Things like this should be considered depending on what the evaluation turns up.

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Writer Comments      III. EXPECTED RESULTS, BENEFITS, AND LONGEVITY      DNRRES\_TONELLO  
01/29/2001 17:03:00

See above comments.



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#### PRESCRIPTION COMMENTS

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FMU Review Comments **V. RESOURCE REQUIREMENTS - FISH STOCKING, CAPITAL OUTLAY, OTHER** DNRRES\_BRAUNSC  
01/30/2001 09:36:00  
I think the fish costs should be \$87,600 (20,000 yr @ \$.73ea x six years). Rest looks ok. Recommend approval.

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Writer Comments **V. RESOURCE REQUIREMENTS - FISH STOCKING, CAPITAL OUTLAY, OTHER** DNRRES\_TONELLO  
01/30/2001 09:47:00  
You were right, Jeff. I changed it. Thanks!



Michigan Dept. of  
Natural Resources

### Fish Stocking Request

Produced: January 10, 2002

Request No.: 512

Resp. FMU: Central Lake Michigan

Status: Approved

Prescription: 739

Created: 01/17/2001 10:53

Purpose: Maintenance

Program: Inland

Water	Site	Site No.	T.	R.	S.	Spe (St)	Age	Mark	Handling	Lvl.	2001	2002	2003	2004	2005	2006
North Lake Leelanau	EAST LELAND TOWNSHIP PARK	45-05-00	31N	12W	35	LAT	YR			1	10,000	10,000	10,000	10,000	10,000	10,000
										2	20,000	20,000	20,000	20,000	20,000	20,000
										3	22,000	22,000	22,000	22,000	22,000	22,000

## North Lake Leelanau

- 2,950 acres or 4.6 square miles
- Maximum depth is 121 ft.
- It is 55% the surface area of South Lake Leelanau.
- **Planting History**
- Lake trout
  - Lake trout planted from 1948 through 1957 at 1,000-9,000 legals per year.
  - Lake trout plants suspended during late 1950s and early 1960s to reestablish Great Lake.
  - Lake trout plants in 1964-65 (legal size), then nearly continuous from 1970 to present.
  - Plantings since 1970 have been 15,000 to 30,000 yearlings per year.
  - Some years' lake trout not planted since not available.
- Rainbow trout
  - Plantings have been intermittent from 1949 through 1973. One plant in 1991 (substitute).
  - Numbers stocked has been 5,000 to 20,000 yearlings annually.
  - Success has generally been poor. Sometimes they are substituted for another trout species that is not available.
- Brown trout
  - Plantings from 1958-65, and 1974-98.
  - Numbers planted from 1958-65 were legal sized fished and averaged about 2,000 per year.
  - Numbers planted per year from 1974 ranged from 5,000-40,000 yearlings.
  - Currently planting the Seeforellen strain of brown trout. Other strains were Wild Rose.
  - Brown trout plants in general appear satisfactory.
- Splake
  - They have been planted a few years as a substitute for lake trout.
  - Success has been mixed.
- Lake whitefish
  - An experimental plant of fingerling whitefish was made in 1995.
  - Eggs from Lake Michigan stock in East Grand Traverse Bay. Spawned in fall of '94.
  - Success??

### 1967 survey

- Experimental mesh gill nets
- Lake trout and brown trout have gill lice.
- Lake known to have larger brown trout than the south lake.
- Other species collected were; perch, cisco, suckers, pumpkinseed, rock bass.

### 1978 survey

- Purpose to evaluate brown trout planting.
- Great Lakes gill nets (1/2" to 6" stretch measure, 50 ft. panels of each).
- Lake trout – avg. 26.4 inches and growing very well.
- Brown trout – avg. 18.6 inches and good growth.
- Yellow perch – avg. 6.5 inches but poor growth.
- Smallmouth bass – avg. 13.9 inches and poor growth.
- Also collected; smelt, sucker, rock bass, pike, cisco and rainbow trout.
- Thermocline 27-36 ft.
- Dissolved oxygen good (9-7 ppm) from surface to bottom.
- Secchi disk was 9 ft.

### 1988 survey

- Purpose to evaluate the lake trout, brown trout and splake plants. Also general inventory.
- Netting from 6/27-7/1/88 and 7/13-14/88.
- Great Lakes gill nets, large mesh fyke nets and small mesh fyke nets.
- Lake trout.
  - Lake trout planted in 1980 (LP) and 1981 (RP).

- 87% of the fish collected from these 2 age groups were marked.
- Planted fish surviving and needed to maintain the fishery.
- Averaged 26.1 inches
- Most have tapeworms.
- Splake
  - Cross between lake trout and brook trout.
  - Avg. 12.5 inches
  - Fish were from the 2 previous plants.
- Brown trout
  - Averaged 20.8 inches
  - Five age groups present.
- Smallmouth bass
  - Averaged 12.0 inches
  - Slow growth
  - Small lamprey scars
  - Some blackspot
- Yellow Perch
  - Averaged 6.9 inches
  - 27% larger than 7 inches.
  - Slow growing.
- Rock bass -- parasitic leech on fish
- Common white sucker -- Some cataracts on eyes.
- Other species collected were; largemouth bass, bluegill, pumpkinseed, cisco, smelt, brown bullhead, burbot, bowfin, longnose gar, common shiner, emerald shiner, spottail shiner, bluntnose minnow.

#### 1995

- Experimental planting of 27,182 lake whitefish fingerlings.
- Eggs from adults spawned in the fall of '94 from east arm Grand Traverse Bay.
- Success??

#### 1999

- Survey
- Purpose is to evaluate the brown trout, lake trout and lake whitefish plants.

Information presented to Lake Leelanau Association

R. Hay  
6/22/98

File as: North Lake Leelanau history



## South Lake Leelanau

- 5,370 acres or 8.4 square miles
- Maximum depth is 62 ft.
- Average depth is only 23 ft.
- 8 miles long
- 25 miles around shoreline.
- **Planting History**
- Lake trout
  - Only 1 planting and that were 1,000 adults in 1947.
  - Not lake trout water, not enough cold deep well oxygenated water.
- Rainbow trout
  - Plants in 1950-51(2,500 and 5,000 yearlings), 1965 (25,000 fingerlings) and 1970 (355 adults)
  - Poor returns.
- Brown trout
  - Annual plants of legal size fish (2,000-5,000) from 1955-1964.
  - Annual plants of yearling size fish (7,000-20,000) from 1968-91.
  - Discontinued in 1992 in favor of walleye.
- Walleye
  - First plant of 8,439 fingerlings in 1975 from local rearing ponds.
  - Second plant of fingerlings in 1986 (50). Rearing ponds not dependable.
  - Large fry plants in 1989 (6.1 million), 1992 (6.5 million), 1995 (6.5 million) and 1998 (5.0 million).
  - Fry hatched at Platte River Hatchery and transported to lake.
  - Fry plants made at a rate of about 1,000 per acre and every 3 years.
  - Objective is to establish self-sustaining population of walleye.
  - Rearing later in presentation.
- Bluegill
  - 5,050 adults in 1996 by Lake Association.

### 1978 survey

- Purpose to evaluate brown trout plants
- Great Lakes gill nets.
- Walleye
  - Walleye growing very good.
  - Most appeared to be from '75 plant of 8,400 fingerlings from local rearing ponds.
  - Provemont (6,400) and Solon (2,000).
  - Fair number of walleye.
  - Few small walleye
  - Walleye fishing improving.
- Brown trout
  - Fair number
  - Growing well.
  - Good fishing reports especially in the spring.

### 1988 survey

- Purpose to evaluate brown trout plants and general inventory.
- Great Lakes gill nets, largemouth fyke nets, and smallmouth fyke nets.
- Walleye
  - Fair number
  - Good growth
- Brown trout
  - Fair number
- Smallmouth bass

- Good numbers
- 25% legal size
- Slow growing
- Bluegill
  - Good numbers
  - 91% larger than 6 inches
- Rock bass
  - Very abundant
- Cisco
  - Common
- Yellow perch
  - Common
  - 40% larger than 7 inches
  - Very slow growing

### **1992 survey**

- Great Lakes gill nets, large and small mesh fyke nets.
- Purpose to evaluate growth of walleye only.
- The 33 walleye collected averaged 16.4 inches with 58% legal size.
- The 1989 year class (age-3) of walleye averaged 13.9 inches and were growing slightly below the state average.
- The 1989 fry plant must have survived well since anglers reported catching numerous fish just under the legal size.
- The 1988 year class (age-4) walleye were growing significantly better than the state average.
- Walleye feeding on small yellow perch and had plenty of body fat.
- A few of the walleye had "blackspot".
- Perch growing significantly slower than the state average.
- Other species collected were; rock bass, smallmouth bass, largemouth bass, northern pike, bluegill, pumpkinseed and brown trout.

### **1993 survey**

- Great Lakes gill nets and largemesh fyke nets.
- Purpose to evaluate growth of walleye only.
- 1989 year class (age 4) still dominate and growth about state average.
- Also collected pike, largemouth bass, rock bass, yellow perch, gar, brown trout, common white sucker, bowfin, bullheads and smallmouth bass (30 collected in one day).

### **1994 survey**

- Great Lakes gill nets, large and small mesh fyke nets.
- Purpose to evaluate growth of walleye and general inventory.
- Walleye
  - The 36 walleye averaged 16.7 inches and ranged in length from 6-23 inches.
  - Nearly 70% of the walleye were legal size (15 inches).
  - Growth was slightly below state average.
  - The 1989 year class dominated the catch and may be the result of the fry plant.
- Smallmouth bass
  - The 45 bass averaged 14.1 inches and ranged in length from 3-20 inches.
  - Nearly 60% were legal size (14 inches).
  - Growth was slightly better than the state average.
- Northern pike
  - The 26 pike averaged 21.8 inches and ranged in length from 13-27 inches.
  - About 1/3 were legal size (24 inches).
- Rock bass
  - The 511 collected averaged 8.3 inches and ranged in length from 2-11 inches.
  - 87% were larger than 6 inches.

- Their growth was significantly below the state average.
- Other species collected
  - Longnose gar, white sucker, largemouth bass, yellow perch, pumpkinseed, bluegill, cisco, brown trout, spottail shiner, bullhead, and bowfin.

### **Walleye fry hatching operation**

- Platte River Hatchery
- Eggs collected from adults in the Muskegon River below Croton Dam
- 1998 operation
- 6.5 million eggs delivered to the Platte on April 3.
- Eggs placed in hatching jars
- Flowing water in jars, from bottom to top.
- Treat eggs with formalin at concentration of 1:600 to prevent fungus from developing.
- Water temperature during incubation ranged from 48-52 °F
- Eggs starting hatching on 4/18/98
- Approximately ½ were hatched by 4/21/98
- Hatching fry swim up and into trough with flowing water.
- Fry attracted to light at night and swim into circular tank with flowing water.
- Fry netted with small mesh net and placed into milk cans.
- Planted fry on 4/22, 24, 25/98 in S Lake Leelanau.
- Assistance from volunteers who took fry out to deeper waters aboard pontoon boats..
- Fry transported in milk cans with oxygen bubbled into the water.
- Approximately 500,000 fry per can.
- Total plant was 5.0 million for a hatch of 77%.
- Good year for hatching, good eye-up and low fry mortality.

R. Hay  
8/26/98

File as: South Lake Leelanau history