

HERPS POPULATION ESTIMATES form, R-8001 (reduced to fit on this page).

MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
FISHERIES DIVISION

Water \_\_\_\_\_

HERPS POPULATION ESTIMATES

County \_\_\_\_\_ T. \_\_\_\_ R. \_\_\_\_ Sec. \_\_\_\_

Sheet \_\_\_\_ of \_\_\_\_ Sheets

Site \_\_\_\_\_ Date: Mark \_\_\_\_\_ Recapture \_\_\_\_\_

Gear:  Traps  Seine  Gill Net  Electro  Other  Visual Acres \_\_\_\_\_

<b>Turtles:</b>									
Snapper					Leopard				
Softshell					Mink				
Spotted***					Wood				
Wood***									
E. Box***					<b>Snakes:</b>				
Blandings***					Kirtlands**				
Map					Copperbelly**				
Painted					N. Water				
Slider					Queen				
Musk					Brown				
					Red-Bellied				
<b>Lizards:</b>					E. Garter				
5-Lined Skink					Butler's Garter				
6-Lined Race Runner					Ribbon				
					Ringneck				
<b>Salamanders:</b>					E. Hognose				
Tiger					Blue Racer				
Spotted					Black Rat				
Blue Spotted					Fox *				
Marbled					E. Milk				
Small-Mouthed					E. Smooth Green				
4-Toed					E. Massasauga***				
Mudpuppy									
Central Newt									
Red-Spotted Newt									
Red-Backed									
West. Lesser Siren									
<b>Frogs-Toads:</b>									
E.American Toad									
Fowlers Toad									
Blanchard's Cricket									
Gray Tree									
Spring Peeper									
Chorus									
Bullfrog									
Green									
Pickerel									

\*Threatened      \*\* Endangered      \*\*\*Special Concern

Prepared by: \_\_\_\_\_ Date \_\_\_\_\_

Copies to: ( ) Lansing; ( ) Region; ( ) District; ( ) Research



LAKE PHYSICAL DESCRIPTION form, R-8057 (reduced to fit on this page).

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES**  
**Fisheries Division**

R8057  
Rev. 3/82

Lake \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Sec. \_\_\_\_\_ **LAKE PHYSICAL DESCRIPTION**  
 County \_\_\_\_\_  
 Id. \_\_\_\_\_ Prepared by \_\_\_\_\_ Date \_\_\_\_\_

1. Lake: Area (ha) \_\_\_\_\_ Perimeter (km) \_\_\_\_\_ Shape factor  $\downarrow$  \_\_\_\_\_ Ref. \_\_\_\_\_
2. Watershed: Area (km) \_\_\_\_\_ Perimeter (km) \_\_\_\_\_ Shape factor  $\downarrow$  \_\_\_\_\_ Lake area  $\div$  watershed area \_\_\_\_\_ Ref. \_\_\_\_\_
3. Maximum depth (m) \_\_\_\_\_ Mean depth (m) \_\_\_\_\_ Volume (1000's of m<sup>3</sup>) \_\_\_\_\_ Ref. \_\_\_\_\_
4. Heating degree days (base 55°F) \_\_\_\_\_
5. Flushing rate (years) \_\_\_\_\_ Ref. \_\_\_\_\_
6. Drainage type (✓): Seepage \_\_\_\_\_ Intermittent outlet \_\_\_\_\_ Permanent outlet \_\_\_\_\_
7. Inlets: Names \_\_\_\_\_  
 Mean annual discharge (m<sup>3</sup>/sec) \_\_\_\_\_ Ref. \_\_\_\_\_
8. Outlet: Name \_\_\_\_\_  
 Mean annual discharge (m<sup>3</sup>/sec) \_\_\_\_\_  
 Name of main drainage system \_\_\_\_\_
9. Lake type (✓): Natural \_\_\_\_\_ Natural with dam \_\_\_\_\_ Impoundment \_\_\_\_\_
10. Dam: Height (m) \_\_\_\_\_ Boat lock (✓): No \_\_\_\_\_ Yes \_\_\_\_\_ Functional fish ladder (✓): No \_\_\_\_\_ Yes \_\_\_\_\_  
 Effect on upstream fish movement (✓): None \_\_\_\_\_ Hinders \_\_\_\_\_ Completely blocks \_\_\_\_\_  
 Comments: \_\_\_\_\_
11. Annual fluctuation in water level (✓): 0-0.5m \_\_\_\_\_ 0.5-1m \_\_\_\_\_ 1-2m \_\_\_\_\_ more than 2m \_\_\_\_\_
12. Maximum long-term fluctuation in water level (m) \_\_\_\_\_
13. Soils in 0-2m (%): Organic \_\_\_\_\_ Muck \_\_\_\_\_ Clay \_\_\_\_\_ Marl \_\_\_\_\_ Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Rubble \_\_\_\_\_ Bedrock \_\_\_\_\_
14. Soils in 2m+, (%): Organic \_\_\_\_\_ Muck \_\_\_\_\_ Clay \_\_\_\_\_ Marl \_\_\_\_\_ Sand \_\_\_\_\_ Gravel \_\_\_\_\_ Rubble \_\_\_\_\_ Bedrock \_\_\_\_\_
15. Shoreline (% by type): Bog \_\_\_\_\_ Swamp \_\_\_\_\_ Marsh \_\_\_\_\_ Upland \_\_\_\_\_
16. Lake use (✓): Private \_\_\_\_\_ Semiprivate \_\_\_\_\_ Public \_\_\_\_\_
17. Approximate number of: Cottages and houses \_\_\_\_\_ Resorts \_\_\_\_\_ Boat liveryes \_\_\_\_\_
18. Surrounding land use (%): Undeveloped \_\_\_\_\_ Agricultural \_\_\_\_\_ Urban \_\_\_\_\_
19. Describe topography, soil, vegetation: \_\_\_\_\_

$\downarrow$ Shape factor formerly called shore development factor. Equals perimeter  $\div$  3.5449  $\sqrt{\text{area}}$ .

COPIES TO: Lansing ( ), Region ( ), District ( ), I.F.R. ( )

References for items 1, 2, 3, 5, 7, 8

Ref. code:

1. Marsh, William M. and Thomas E. Borton. 1974. Michigan Inland Lakes and their Watersheds (an atlas). Michigan Dept. Natural Resources, Water Resources Comm., 166p. (Data for lakes larger than 100 acres. Based on USGS topographic maps and may be in error if shoreline alteration has taken place since mapping.)
2. Fisheries Division lake maps (cite date of mapping).
3. Miller, J. B. and T. Thompson, 1970. Compilation of data for Michigan lakes. U.S. Dept. Interior Geol. Surv., in cooperation with Mich. Dept. Nat. Resources.
4. Anonymous. 1975. A compendium of lake and reservoir data collected by the National Eutrophication Survey in the Northeast and North-central United States. U.S. Environ. Protection Agency, National Eutrophication Survey Working Paper No. 474.
5. Humphys, C. R. and R. F. Green. 1962. Michigan lake inventory bulletins 1-83. Mich. State Univ., Dept. Resource Devel., East Lansing, Michigan.
6. Fisheries Division files (e.g., lake volume analysis).
7. Land Resource Programs files.
8. Water Management Division files.
9. Water Quality Division files.
10. U. S. Forest Service files.
11. Derived by the preparer of this form.

Other publications and sources (number and cite below). (e.g., P. W. Laarman, Fisheries Research, has estimated many mean depths.)

Reference for item 4

Van Den Brink, C., N. D. Strommen, and A. L. Kenworthy. 1971. Growing degree days in Michigan. Mich. State Univ. Agr. Exp. Sta., Res. Rep. No. 131, 48 p.

Continuations (use item numbers):

FISH COLLECTION form, R-8058 (reduced to fit on this page).

MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
Fisheries Division

FISH COLLECTION

Water \_\_\_\_\_

County \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Sec. \_\_\_\_\_ Date \_\_\_\_\_

I.D. \_\_\_\_\_ Sheet 1 of \_\_\_\_\_

Summary of: ( ) All sites ( ) Coll. site No. \_\_\_\_\_ ( ) Index site No. \_\_\_\_\_ ( ) All gear ( ) Gear \_\_\_\_\_

Sample site(s): Number of \_\_\_\_\_ Depth Range \_\_\_\_\_ Temperature range \_\_\_\_\_

Location(s) (describe or map below): \_\_\_\_\_

Cover (abundance, type): \_\_\_\_\_

Fish foods: \_\_\_\_\_

Water clarity, level, etc.: \_\_\_\_\_ Cond.: \_\_\_\_\_ Electro. eff.: \_\_\_\_\_

Weather: Present \_\_\_\_\_ Preceding \_\_\_\_\_

Temperature: Air \_\_\_\_\_ Water surface \_\_\_\_\_ Time of day \_\_\_\_\_

Stream: Length \_\_\_\_\_ Avg. width \_\_\_\_\_ Avg. depth \_\_\_\_\_

Velocity: Ave. \_\_\_\_\_ Surface \_\_\_\_\_ Discharge \_\_\_\_\_

Bottom type: \_\_\_\_\_

Gear Description: \_\_\_\_\_

Effort: Net lifts \_\_\_\_\_ Net nights \_\_\_\_\_ Area covered \_\_\_\_\_ Hours shocked \_\_\_\_\_

Purpose of collection: \_\_\_\_\_

Data collected (✓): ( ) CATCH SUMMARY ( ) LENGTH-FREQUENCY ( ) LENGTH-BIOMASS ( ) LENGTH-WEIGHT REGRESSION  
( ) GROWTH ( ) MARK & RECAPTURE ESTIMATES ( ) AGE-FREQUENCY & SURVIVAL

Analysis, map, remarks, fishing reports:

FOLD  
HERE

Analysis by \_\_\_\_\_ Sec. \_\_\_\_\_

Collection by \_\_\_\_\_ Sec. \_\_\_\_\_ Identification by \_\_\_\_\_ Sec. \_\_\_\_\_

COPIES TO: ( ) LANSING ( ) REGION ( ) DISTRICT ( ) I.F.R.

FISH COLLECTION form, R-8058 reverse side (reduced to fit on this page).

CATCH SUMMARY BY GEAR				Gear = _____ or as indicated.												
Species																
Gear																
Length↕																
Avg. Wt.																
Total	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.		
%↕																
CPE																
% L-A↕																
LENGTH-FREQUENCY & LENGTH-BIOMASS SAMPLE	Inches↕															
	1															
	2															
	3															
	4															
	5															
	6															
	7															
	8															
	9															
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	29															
	30															
	31															
	32															
	33															
	34															
											<b>ALL SPECIES TOTAL</b>					
											Gear		No.		Lb.	
	35															
	36															
	37															
38																
39																
40																
Sample total																

↕ Record average length or range in length of fish.  
 ↕ Total % = percent contribution of the species to the total catch in the gear.  
 ↕ L-A = Legal- or acceptable- size game fish: bluegill, sunfish, rock bass-6"+ ; crappie, perch, bullhead-7"+ ; bass-12"+ ; walleye-15"+ ; pike-20"+ muskie-30"+ ; trout-7"+ in U.P. streams, 8"+ in L.P. streams, 10"+ in lakes.  
 \*OR:  
 ↕ Inch groups: 1=1.0-1.9, 2=2.0-2.9, etc.

FISH COLLECTION (CON'T) form, R-8058-1 (reduced to fit on this page).

MICHIGAN DEPARTMENT OF NATURAL RESOURCES  
Fisheries Division

FISH COLLECTION (CON'T.)

Water \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Sec. \_\_\_\_\_ Date \_\_\_\_\_

County \_\_\_\_\_ I.D. \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_

Summary of: ( ) All sites ( ) Coll. site No. \_\_\_\_\_ ( ) Index site No. \_\_\_\_\_ ( ) All gear ( ) Gear \_\_\_\_\_

Species														
	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.
Gear														
Length														
Avg. Wt														
Total														
%														
CPE														
% L-A														
Inches														
1														
2														
3														
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32														
33														
34														
35														
36														
37														
38														
Sample total														

FISH COLLECTION (CON'T) form, R-8058-1 reverse side (reduced to fit on this page).

CATCH SUMMARY BY GEAR				Gear = _____ or as indicated.												
Species																
Gear																
Length↕																
Avg. Wt.																
Total	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.		
% ↕																
CPE																
% L-A↕																
LENGTH-FREQUENCY & LENGTH-BIOMASS SAMPLE	Inches↕															
	1															
	2															
	3															
	4															
	5															
	6															
	7															
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	30															
	31															
	32															
	33															
	34															
											<b>ALL SPECIES TOTAL</b>					
											Gear		No.		Lb.	
	35															
	36															
	37															
38																
39																
40																
Sample total																

↕ Record average length or range in length of fish.  
 ↕ Total % = percent contribution of the species to the total catch in the gear.  
 ↕ L-A = Legal- or acceptable- size game fish: bluegill, sunfish, rock bass-6"+ ; crappie, perch, bullhead-7"+ ; bass-12"+ ; walleye-15"+ ; pike-20"+ muskie-30"+ ; trout-7"+ in U.P. streams, 8"+ in L.P. streams, 10"+ in lakes.  
 \*OR:  
 ↕ Inch groups: 1=1.0-1.9, 2=2.0-2.9, etc.

LENGTH-WEIGHT FIELD DATA form, R-8059 (reduced to fit on this page).

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES**  
**Fisheries Division**

Water \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Sec. \_\_\_\_\_ LENGTH-WEIGHT FIELD DATA  
 County \_\_\_\_\_ Gear \_\_\_\_\_ Date \_\_\_\_\_

Record species, individual weights, and total and average weight per inch group.

.0	_____	.0	_____	.0	_____	.0	_____	.0	_____
.1	_____	.1	_____	.1	_____	.1	_____	.1	_____
.2	_____	.2	_____	.2	_____	.2	_____	.2	_____
.3	_____	.3	_____	.3	_____	.3	_____	.3	_____
.4	_____	.4	_____	.4	_____	.4	_____	.4	_____
.5	_____	.5	_____	.5	_____	.5	_____	.5	_____
.6	_____	.6	_____	.6	_____	.6	_____	.6	_____
.7	_____	.7	_____	.7	_____	.7	_____	.7	_____
.8	_____	.8	_____	.8	_____	.8	_____	.8	_____
.9	_____	.9	_____	.9	_____	.9	_____	.9	_____

.0	_____	.0	_____	.0	_____	.0	_____	.0	_____
.1	_____	.1	_____	.1	_____	.1	_____	.1	_____
.2	_____	.2	_____	.2	_____	.2	_____	.2	_____
.3	_____	.3	_____	.3	_____	.3	_____	.3	_____
.4	_____	.4	_____	.4	_____	.4	_____	.4	_____
.5	_____	.5	_____	.5	_____	.5	_____	.5	_____
.6	_____	.6	_____	.6	_____	.6	_____	.6	_____
.7	_____	.7	_____	.7	_____	.7	_____	.7	_____
.8	_____	.8	_____	.8	_____	.8	_____	.8	_____
.9	_____	.9	_____	.9	_____	.9	_____	.9	_____

Fish length (Define inch groups)

.0	_____	.0	_____	.0	_____	.0	_____	.0	_____
.1	_____	.1	_____	.1	_____	.1	_____	.1	_____
.2	_____	.2	_____	.2	_____	.2	_____	.2	_____
.3	_____	.3	_____	.3	_____	.3	_____	.3	_____
.4	_____	.4	_____	.4	_____	.4	_____	.4	_____
.5	_____	.5	_____	.5	_____	.5	_____	.5	_____
.6	_____	.6	_____	.6	_____	.6	_____	.6	_____
.7	_____	.7	_____	.7	_____	.7	_____	.7	_____
.8	_____	.8	_____	.8	_____	.8	_____	.8	_____
.9	_____	.9	_____	.9	_____	.9	_____	.9	_____

.0	_____	.0	_____	.0	_____	.0	_____	.0	_____
.1	_____	.1	_____	.1	_____	.1	_____	.1	_____
.2	_____	.2	_____	.2	_____	.2	_____	.2	_____
.3	_____	.3	_____	.3	_____	.3	_____	.3	_____
.4	_____	.4	_____	.4	_____	.4	_____	.4	_____
.5	_____	.5	_____	.5	_____	.5	_____	.5	_____
.6	_____	.6	_____	.6	_____	.6	_____	.6	_____
.7	_____	.7	_____	.7	_____	.7	_____	.7	_____
.8	_____	.8	_____	.8	_____	.8	_____	.8	_____
.9	_____	.9	_____	.9	_____	.9	_____	.9	_____



LENGTH-WEIGHT FIELD DATA form, R-8059 reverse side (reduced to fit on this page).

Fish length (Define inch groups)

---

.0	.0	.0	.0	.0
.1	.1	.1	.1	.1
.2	.2	.2	.2	.2
.3	.3	.3	.3	.3
.4	.4	.4	.4	.4
.5	.5	.5	.5	.5
.6	.6	.6	.6	.6
.7	.7	.7	.7	.7
.8	.8	.8	.8	.8
.9	.9	.9	.9	.9

---

.0	.0	.0	.0	.0
.1	.1	.1	.1	.1
.2	.2	.2	.2	.2
.3	.3	.3	.3	.3
.4	.4	.4	.4	.4
.5	.5	.5	.5	.5
.6	.6	.6	.6	.6
.7	.7	.7	.7	.7
.8	.8	.8	.8	.8
.9	.9	.9	.9	.9

---

.0	.0	.0	.0	.0
.1	.1	.1	.1	.1
.2	.2	.2	.2	.2
.3	.3	.3	.3	.3
.4	.4	.4	.4	.4
.5	.5	.5	.5	.5
.6	.6	.6	.6	.6
.7	.7	.7	.7	.7
.8	.8	.8	.8	.8
.9	.9	.9	.9	.9

---

.0	.0	.0	.0	.0
.1	.1	.1	.1	.1
.2	.2	.2	.2	.2
.3	.3	.3	.3	.3
.4	.4	.4	.4	.4
.5	.5	.5	.5	.5
.6	.6	.6	.6	.6
.7	.7	.7	.7	.7
.8	.8	.8	.8	.8
.9	.9	.9	.9	.9

LENGTH-WEIGHT REGRESSION form, R-8059-1 (reduced to fit on this page).

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES**  
Fisheries Division

R8059-1  
Rev. 3/82

Water \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Sec. \_\_\_\_\_ **LENGTH-WEIGHT REGRESSION**

County \_\_\_\_\_ Id. \_\_\_\_\_ Collection date \_\_\_\_\_

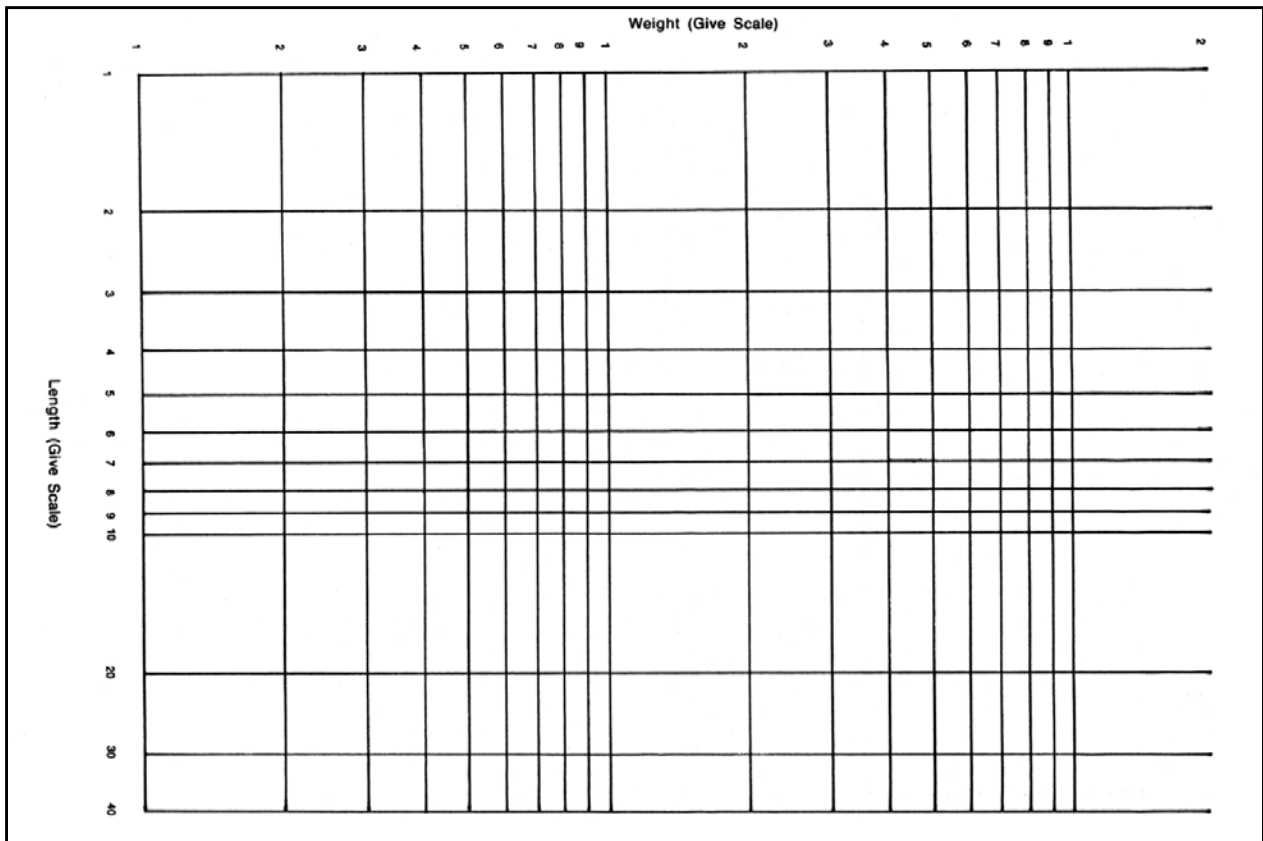
Gear \_\_\_\_\_ Units of Measurement (✓): ( ) inches or ( ) mm; ( ) pounds or ( ) grams

Species	Number Measured	Length range	Equation: $\log W = \log c + n \log L$

**Analysis:**

Prepared by \_\_\_\_\_ Section \_\_\_\_\_

Copies to (✓): ( ) Lansing, ( ) Region, ( ) District, ( ) I.F.R.



**MICHIGAN DEPARTMENT OF NATURAL RESOURCES**

Fisheries Division

**SURVEY PLANNING**

Water \_\_\_\_\_

Date \_\_\_\_\_

County \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Sec. \_\_\_\_\_

Objective:

Previous surveys:

Gear types and dates

Comparison of results

Fish population changes

Limnological data and dates

Recommendations:

Gear type

Timing

Limnological measurements

Special studies

Units of measurement

Data to collect

CATCH SUMMARY

LENGTH-FREQUENCY

LENGTH-BIOMASS

LENGTH-WEIGHT

GROWTH

MARK & RECAPTURE ESTIMATES

AGE-FREQUENCY & SURVIVAL

LAKE SURVEY SUMMARY form, R-8063 (reduced to fit on this page).

MICHIGAN DEPARTMENT OF NATURAL RESOURCES				R8063
Fisheries Division				4/81
Lake _____	T. _____	R. _____	Sec. _____	<b>LAKE SURVEY SUMMARY</b>
County _____	Id. _____			
1. Other names of lake _____				
2. Accessibility (how reached, condition of roads) _____				
3. Outlet (immediate and main drainage) _____				
Permanency	Size			
4. Dam in outlet	Distance from lake	Height		
Effect on level	Owner	Use		
Effect on fish movements _____				
5. Inlets (name, size) _____				
Drainage area				
6. Pollution (kind, source, severity) _____				
7. Shoreline type (%): Bog _____ Swamp _____ Marsh _____ Upland _____				
8. Surrounding country (topography, soil, cover) _____				
9. Use (private, public, semi-private) _____				
Public fishing site				
10. Approximate number Cottages _____ Homes _____ Resorts _____ Boat Liveries _____				
11. Intensity of fishing (heavy, medium, light, or angler days) Summer _____ Winter _____				
12. Other uses _____				
13. Area _____				
Shore Development		Maximum depth		
14. Area of Vegetation (acres) _____				
Per cent shoal (less than 15 ft.)				
15. Slope at drop-off (gradual, steep) _____				
16. Bottom Soil: Shoal _____				
Deep water				
17. Color _____				
Secchi disk (range)				
18. Temperature (range): Surface _____				
Bottom				
19. Thermocline Location _____				
Temperature (range)				
20. Dissolved oxygen (range): Above thermocline (in upper 20 feet if absent)				
In Thermocline		Below thermocline (near bottom if absent)		
Depth range where temperature is below 70° F., and O <sub>2</sub> above 4 ppm.			Oxygen-thermal type	
21. pH (range) _____				
CO <sub>2</sub>		Methyl Orange Alk. (range)		

(Over)

Copies to: Lansing ( ), Region ( ), District ( ), I.F.R. ( )

22. Cover (kind, abundance) _____			
23. Vegetation (type, abundance) _____			
24. Food (abundance, dominant organisms): Plankton _____			
Bottom: Shoal	Depths		
Vegetation _____			
25. Spawning grounds (summarize observations and reports) _____			
26. Predators (kind and abundance) _____			
27. Fish parasites _____			
Fish mortalities (observed or reported) _____			
28. Fishing: general reputation _____			
History _____			
Reported by			
29. Recent stocking _____			
30. Fish species _____			
Abundance	Predominant size	Growth rate (poor, average, good)	
_____			
_____			
_____			
_____			
_____			
_____			
_____			
_____			
_____			
_____			
Continuations (use item numbers): _____			
_____			
_____			
_____			
Prepared by _____			
Section		Date of survey(s)	
_____			

STREAM SURVEY SUMMARY form, R-8064 (reduced to fit on this page).

**MICHIGAN DEPARTMENT OF NATURAL RESOURCES**  
Fisheries Division

R8064  
4/81

Stream \_\_\_\_\_ T. \_\_\_\_\_ R. \_\_\_\_\_ Sec. \_\_\_\_\_

County \_\_\_\_\_ Id. \_\_\_\_\_

**STREAM SURVEY SUMMARY**

---

1. Drainage system \_\_\_\_\_
2. Station: Location \_\_\_\_\_  
 Length (m) \_\_\_\_\_ Avg. width (m) \_\_\_\_\_ Area (ha) \_\_\_\_\_  
 Avg. depth (m) \_\_\_\_\_ Velocity (m/sec) \_\_\_\_\_ Discharge \_\_\_\_\_  
 Color and turbidity \_\_\_\_\_  
 Dredged? \_\_\_\_\_  
 Classification<sup>2</sup> \_\_\_\_\_
3. Names of tributaries \_\_\_\_\_
4. Water source (springs, groundwater, etc.) \_\_\_\_\_
5. Stability of flow \_\_\_\_\_
6. Barriers (dams, waterfalls, wiers, etc.) \_\_\_\_\_  

<u>Location</u>	<u>Owner</u>	<u>Use</u>	<u>Head</u>
7. Surrounding country (topography, soil, cover, use) \_\_\_\_\_
8. Access \_\_\_\_\_
9. Erosion (source, severity) \_\_\_\_\_
10. Pollution \_\_\_\_\_
11. Mortalities \_\_\_\_\_
12. Parasites \_\_\_\_\_
13. Diseases \_\_\_\_\_
14. Predators \_\_\_\_\_
15. Beaver \_\_\_\_\_

16. Shade \_\_\_\_\_
17. Pools (✓): Size -- large \_\_\_\_\_ medium \_\_\_\_\_ small \_\_\_\_\_; Type -- deep \_\_\_\_\_ moderate \_\_\_\_\_ shallow \_\_\_\_\_  
 Frequency -- many \_\_\_\_\_ frequent \_\_\_\_\_ infrequent \_\_\_\_\_
18. Bottom types<sup>2</sup>: Pools \_\_\_\_\_  
 Riffles \_\_\_\_\_
19. Spawning grounds \_\_\_\_\_
20. Aquatic vegetation (% of stream bed): Abundant \_\_\_\_\_ Moderate \_\_\_\_\_ Sparse \_\_\_\_\_
21. Fish food organism abundance (✓): Exceptional \_\_\_\_\_ Average \_\_\_\_\_ Poor \_\_\_\_\_
22. Fishing (reputation, history) \_\_\_\_\_
23. Recent stocking \_\_\_\_\_
24. Recent management \_\_\_\_\_
25. 

<u>Fish species</u>	<u>Relative abundance</u>	<u>Predominate size</u>	<u>Growth (good, avg., poor)</u>
26. Notes and continuations (use item number) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Prepared by \_\_\_\_\_ Sec. \_\_\_\_\_ Date of survey \_\_\_\_\_

<sup>1</sup>See Michigan Stream Classification System (Appendix VI A15).  
<sup>2</sup>Bedrock, boulder (10"), cobble (3-10"), gravel (1/8-3"), sand, silt, clay, muck, detritus

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LAKE AREA AND VOLUME ANALYSIS form, R-8069 (reduced to fit on this page).

MICHIGAN DEPARTMENT OF NATURAL RESOURCES												R-8069 4/8					
Lake _____		Fisheries Division										LAKE AREA & VOLUME					
County _____		T. _____	R. _____	Sec. _____	ld. _____												
Metric Summary:		Computation in (✓):						Map: Date _____									
Area _____ % Shoal <sup>3</sup> _____		<input type="checkbox"/> Acres, feet, acre-feet						Area _____									
Volume _____ Avg. depth <sup>2</sup> _____		<input type="checkbox"/> Hectares, meters, 1000's m <sup>3</sup>						Surf. el. _____									
Area enclosed by contour line																	
Part of Map	0																
Total																	
%		100															
Volume in depth strata																	
Part of Map	0-															Total	%
Total																	100
%																100	
Prepared _____		Section _____						Date _____									
Copies to: Lansing <input type="checkbox"/> , Region <input type="checkbox"/> , District <input type="checkbox"/> , I.F.R. <input type="checkbox"/> .																	
↓ % shoal = percent of lake area < 5M (15 ft.) deep.      ↻ Average depth = volume ÷ area.																	







NOTES AND REFERENCES form, R-8077 (reduced to fit on this page).

<b>MICHIGAN DEPARTMENT OF NATURAL RESOURCES</b>		R-8077 4/81
Fisheries Division		
Lake or Stream _____		
County _____	T. _____ R. _____ Sec. _____	NOTES AND REFERENCES
Subject:		
Prepared by _____	Section _____	Date _____
Copies to: Lansing <input type="checkbox"/> , Region <input type="checkbox"/> , District <input type="checkbox"/> , I.F.R. <input type="checkbox"/>		