

## Manual of Fisheries Survey Methods II: with periodic updates

### Chapter 5: Survey Reports

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**James C. Schneider and J. W. Merna**

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A final report is required for extensive surveys in addition to properly prepared forms. It will be used for departmental and public information. Make and distribute a NOTE AND REFERENCE form referring to reports not stored in the lake or stream filing system. Refer to Fisheries Division Policies and Procedures for Reports and Publications (Rev. May 1991) for additional information about report types, policies, and procedures for reviewing and editing. For report examples, see <<http://www.dnr.state.mi.us/www/ifr/ifrlibra/ifrlibra.htm>>.

### 5.1 Style

Reports of surveys can take the following forms:

1. Technical Report series – for information of statewide interest. River rotenone surveys are included in this series, with contents as outlined in 5.2.
2. Status of the Fishery Resource Report series – similar to Technical Reports, but less extensive distribution, including Management Unit, Region, Division Office, and Research. Narrative style, as outlined in 5.3.
3. Notes – on FISH COLLECTION form comments section or NOTES AND REFERENCE form.

### 5.2 Content of River Rotenone Survey Reports

These reports compile survey information for small or large sections of rivers sampled with rotenone. Use the style and format of Towns (1987). The following outline, based on that document, is recommended:

- I. Summary.
- II. Introduction.
- III. Methods.
- IV. Results.
  - A. Overview.
  - B. Fishery description, by station.
- V. Discussion.
  - A. General.
  - B. Management considerations.
- VI. Literature Cited.
- VII. Tables.
  1. Locations of sampling stations.
  2. List of species captured at each station.
  3. Percent of catch by weight, number and species. Chubs, shiners, minnows, darters, and individuals less than 3 inches long are excluded.
  4. Catch results.
  5. Numbers of common fish per surface acre collected at each station.

### VIII. Figures.

1. Map showing locations of sampling stations.
2. Weight of gamefish, redhorses and suckers, carp, and all fish captured at each station.

## 5.3 Content of Status of the Fishery Resource Reports

These reports are to describe and analyze the current status of the fishery in a water body, using the results of the most recent survey of the fish community. They provide, for both biologists and the public, a summary and brief review of environment, history, fish, fishing, and management. Write in plain English and avoid technical jargon which would not be understood by most anglers.

Almost all the information and data required for these reports should already appear on forms prepared according to the Manual of Fisheries Survey Methods. The Fish Collection System can generate the appropriate tables. Status reports basically present the information on those forms in narrative style, with summary tables.

The concluding topics of the report are the formulation of management goals and a management plan. The logic leading to the management goals should be clear, and the supporting facts and observations should appear in the previous sections of the report. The management goals must be consistent with the goals of the Fisheries Division and the plan should be feasible. Reports and plans should be updated following all major surveys of the fish community.

Use the style and format of Dexter (1991) for the report and the associated Management Plan. The year of the fish survey should appear in the title, and the date of the report's preparation should appear following the text of the report, just before the tables. Names of fishes should follow the guidelines of the American Fisheries Society.

The following outline and content is recommended:

#### I. Environment.

- A. Location. Include the distance to the nearest town.
- B. Geology and geography. Briefly relate information relevant to aquatic systems, such as soil types in relation to ground water, productivity, and substrate.
- C. Watershed description (inlets, outlets, connecting waters, and basin).
- D. Chemical and physical characteristics.
- E. Development, public ownership, and access.

#### II. Fishery resource.

- A. History of the fishery. Describe fish stocks and the fishery in earlier years along with problems and management history.
- B. Current status of the fish community with summary tables. Cover topics of species composition by number and weight, length, growth, recruitment and longevity. If the age composition sample is large enough, the mortality rate of the older fish can be estimated as described elsewhere (Section 2.4.17 and Chapter 15).
- C. Analysis and discussion. Consider fish, environmental conditions, and resource users. Compare current to past status. All major species should be mentioned, including species which require no current actions. Compare fish stocks with those in similar waters and with statewide averages. This discussion places the known information about the water in perspective and lays the groundwork for long-range goals and expectations.

#### III. Management direction.

- A. Current. In addition to stocking or other actions, management generally involves preservation of environmental quality and continued monitoring of fish population status.

- B. Goals and expectations. Establish a long-term goal for the fishery based on its potential. The success of all future management efforts will be measured by how much they move the fishery toward the goals set down here. Use the history of this water, and performance of similar waters, as a guide to setting long-range goals for the fish stocks, the fishery, and the environment. Consider natural reproduction, growth, standing stocks (by age and size), species mix, access, and public use as factors in making a goal statement. Note that the relative health of the fish stocks and the fishery can be measured by how close the current status is to the long-term goals and expectations. On many of the best waters our long-term goal (or a major part of it) will be to maintain the good health of the fish community and the environment.
  - C. Obstacles to attainment of goals. List, in logical sequence, the impediments and problems that stand in the way of improving the fishery from its current status toward the expectations or vision for the future. This list sets the stage for the development of management objectives (described in Section VI) and management prescriptions (set down on prescription forms). Example: "Excessive fishing mortality on bass and bluegills."
- IV. References. Cite in the scientific report format used by The American Fisheries Society.
- V. Hydrographic map. Include one if available. It must be legible and neat. It need not show survey sites.
- VI. Management Plan. This section starts on a new page because it may not always be distributed with the rest of the status report. This supplement is required when extensive management activity is planned. It elaborates on Management Direction, by giving proposed solutions to specific problems. For example, see Management Plan for Deep Lake. One to several prescriptions may be based on this plan.
- A. Objectives. Must be specific and have measurable end points. There may be several per goal. Example: "Reduce angling mortality of adult bass from 0.50 to 0.35 by 1995."
  - B. Proposed management action. Give a more detailed description of proposal. For example: "Delay opening day on bass until last Saturday in June and raise the size limit to 18 inches."
  - C. Expected results. Make your best quantified prediction of the outcome of the action, even an educated guess. For example: "About 25% of the trout will be harvested by anglers, resulting in an annual harvest of 100-200 trout from this 100-acre lake."
  - D. Evaluation plan. State how you plan to evaluate the management action. For example: "We will evaluate trout fishing from voluntary angler reports and will evaluate trout survival and growth via a tagging study beginning in 1999."

## 5.4 References

- American Fisheries Society. 1991. Common and scientific names of fishes from the United States and Canada (5<sup>th</sup> edition). Special Publication 20. Bethesda, Maryland. (For Michigan fish see <http://www.dnr.state.mi.us/www/ifr/ifrhome/fishlist96.htm>).
- Dexter, J. L. 1991. Deep Lake: Barry County. Michigan Department of Natural Resources, Status of the Fisheries Resource Report 91-1, Ann Arbor. (Available at <http://www.dnr.state.mi.us/www/ifr/ifrlibra/status.htm>).
- Towns, G. L. 1987. A fisheries survey of the Battle Creek River. Michigan Department of Natural Resources, Fisheries Technical Report 87-3, Ann Arbor.

