The Fish Management Policy

By

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A statement to chart and guide the management of fish and fish habitat —

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The Wildlife Story

How shall we manage our lakes, streams and rivers? This is a question of great importance to Minnesotans who jointly own more than four million acres of surface waters. Each of these water acres is capable of producing recreation and income in the form of fish and game crops.

In addition to the one out of three Minnesotans who fish, there is that great peaceful army of non-resident fishing guests who support our vacation industry. Fishing, in terms of money spent by fishermen in Minnesota, is about a 100 million dollar industry.

In the first of this series of articles you were promised that definite policies of game and fish management would be established and made public. Our fisheries resources deserve the best planning and management we can give them. To provide this the following "Policy Pertaining to Management of Minnesota Waters for Fish and Fishing" has been prepared. It has been written by experienced fisheries workers within the Department and has been reviewed and approved by fisheries experts at the University of Minnesota and the U. S. Fish and Wildlife Service. It expresses the aims and goals of the Department in the light of best present information in fish management. The people of Minnesota have a right to know what is being done to maintain and improve their fishing.

The policy is rather long but we make no apology for this. Fish management is a difficult and complex business. There are many different kinds of lakes and streams and many kinds of game fishes, all deserving attention. We have tried to consider them all.

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POLICY PERTAINING TO MANAGEMENT OF MINNESOTA WATERS FOR FISH AND FISHING

OUTLINE — FISH MANAGEMENT POLICY

I. INTRODUCTION

The fish crop of lakes and streams is one of Minnesota's most important natural resources. It is a renewable resource, one that with proper management can be expected to provide recreation for millions of people in the future. At present fishing provides year-round recreation for more than a million Minnesotans; is a basis of the large vacation and resort industry and is the source of a considerable supply of protein food — 40 to 50 million pounds a year. The primary goal and aim of fish management in Minnesota is the production of the greatest number of satisfactory sport-fishing hours — or expressed another way, the most fishing for the most people. To reach this goal, each lake and stream must be managed for kinds of sport fishes for which it is best suited. The time between bites and size of fish available to anglers as well as the kind of fish caught must be considered. Management methods used must fit the specific situation found in any lake. They must be based on best available information about fishes, fishing and capabilities of individual waters and must take into consideration other kinds of public use.

The need for a specific Fish Management Policy is obvious. Such a policy allows the people of the State to know what is being done for conservation of fisheries resources and the reasons for the approaches and fish management methods used. It provides conservation officials with a unified management guide that is based on best present information on fish and lake management. It spells out management methods to be used for increased production of game fishes, best use of artificially propagated fish and best application of other fish management techniques. It should be recognized, however, that a general management policy cannot fit all local conditions exactly and latitude must be allowed the local fish manager for interpreting the policy to fit individual cases. Also, increase of knowledge or changing conditions in the future may require changes in the management methods presently recommended.

II. HISTORICAL BACKGROUND

Fish management has been practiced on Minnesota waters for 75 years. During the first 25 years principal emphasis was on stocking newly-hatched fish fry, especially on non-native species. Brown and rainbow trout were introduced to the betterment of fishing. Carp were planted and took over many waters to the detriment of game fish. Other fishes, such as several kinds of salmon, were widely planted, but failed to survive. Little was then known about the condition that fishes required or about the basic nature of our lakes. Fish planting was mostly a matter of trial and error.

Between 1900 and 1925 there was great expansion of fish stocking of native fishes such as walleyes, whitefish, basses and sunfishes. It was thought then that annual planting of lakes with young fish was necessary just as planting on farm fields is necessary each year. It became evident after years of such general and indiscriminate plantings that they often were not successful and did not improve fishing. It was during this period the first biological investigations of Minnesota lakes and streams were begun. Since that time biological investigators in Minnesota and elsewhere showed that fish management is more than a matter of putting little fish into lakes each year. It was found that often such large crops of small fish were raised naturally that stocking additional fish made little difference. Then too, some lakes were found to be best suited to one kind of fish and some to others. It was discovered that, in waters where stocking was desirable, different sizes of fish were needed for best results. In some waters fry would serve, but in others fingerlings and sometimes adults were most useful.

These observations led to the development and use of many fish management methods. Trout were raised to fingerling and later to catchable size in hatcheries. Walleyes were raised to fingerling size in ponds. A program was developed for removal of rough fish from lakes. In some waters it was found that commercial fishing for non-game fish could be carried on without harming sport fishing. It was sometimes found desir-

able to protect and develop fish spawning areas. It was found that lakes and streams were being injured by pollution, siltation and unwise use. In general, emphasis in fish management in recent years has been placed on preserving and improving the habitat and thereby helping fish populations to take care of themselves.

It is now recognized, as the result of much research and survey work, that the fishes of a lake make up a complicated society. Each kind of fish in a lake is somewhat dependent on every other kind and lake management cannot be considered in terms of one kind of fish alone. For example, in most good walleye lakes young walleyes feed on young perch, but the adult perch are prevented from becoming overly abundant by being eaten by northern pike. The proper balance between the different kinds of fish in a lake is necessary for best fishing. A lake with many kinds of fish of different ages and sizes is more like a forest with different kinds of trees and shrubs than it is like a corn field with a crop that is planted and harvested each year. Only in exceptional cases can a lake be intensively managed like a farm. Farming of lakes by elimination of all fishes present and then planting with native fish is practical only in special situations. Similarly drastic alteration of conditions in lakes is usually not economically feasible. In most lakes the fishes and habitat already present must be managed to produce as good fishing as possible.

Laws and regulations affecting fish and fishing have changed over the years. The trend has been toward laws and regulations that permit a wise and full use of the entire fish crop — all kinds and sizes of fish. Fish are a crop that must be harvested to be used and if they are not harvested, they die of natural causes. Laws and regulations must be adjusted to the abundance of fish so that both a good harvest can be had and the fish stocks preserved.

The present policy is a revision of that prepared in 1949 and under which the Bureau of Fisheries has been operating. It has been revised to make better use of recent research findings and present administrative facilities.

III. BASIS OF MODERN FISH MANAGEMENT

Modern fish management is based on factual information about fish and waters. It stresses maintenance and improvement of the environment; encouragement of natural reproduction of game fishes; control and adjustment of fish populations: adequate utilization of fish present; and proper use of hatchery produced fishes.

Environmental improvement includes pollution abatement and soil erosion control, control and adjustment of water levels, and where advisable, installation of engineering structures in lake and stream beds. It includes also protection and development of natural spawning areas. Other phases of environmental improvement are fencing of shoreline and stream banks and planting of trees along

them, control or supervision of control of undesirable aquatic vegetation, and removal of soil from lake or stream beds where benefit to fish and fishing can be expected.

Adjustment of fish population to produce population balances favorable for sport fishing will be made, where necessary, by removal or planting of fish. Non-game fishes destructive to the environment or harmful to sport fishing will be removed. Populations of stunted game fishes may be thinned to increase growth rates and provide large fish for sport fishing.

It is recognized that, in practice, there is no sharp line separating game and rough fish. Anglers preferences are not the same in different parts of the state. For example, bullheads, suckers, perch and sheepshead are desirable sport fishes in parts of southern Minnesota, but are little taken in the north. Removal of non-game fishes must be adjusted to local fishing preferences and local fish populations. In some cases it is desirable to transfer fish of kinds that are not wanted locally to other waters where they have sport fishing value. In addition to the usual approach of removing rough fish to improve the environment or fishing for more desirable species, there are waters in which removal of non-sport fishes, especially bullheads, can be regarded as harvest of an unused part of the fish crop.

Fish stocking is an important tool in fish management. Planting of fish is known to be practical in the following instances:

1. For stocking newly created or restored waters.
2. For stocking lakes subject to periodic winter kill.
3. For introducing a species of fish into suitable waters not inhabited by it or for re-establishing it in suitable waters from which it has disappeared.
4. For adjusting population balances or ratios where investigation indicates that heavy stocking of game fishes (usually predaceous fishes) will benefit sport fishing.
5. For stocking catchable-size trout in certain designated trout streams or lakes for the purpose of obtaining higher fishing yields than the waters would naturally produce.
6. For stocking, when available, catchable-size warm-water fishes (usually panfishes taken by rescue or thinning operations) in ponds or small lakes in metropolitan areas to supply put-and-take fishing, especially for children. No fish will be marked or stocked specifically for fishing contests.
7. For stocking game fishes, usually fingerling predaceous fishes, in certain waters where all or portions of the environment is suited to them but is unoccupied because of lack of suitable spawning areas.

No fish will be stocked through application or otherwise in any water not open to the public for fishing, except that federal applications for fish

will be approved when the fish are for private ponds which are not connected with public waters.

A program of acquisition and development of public access areas to lakes and streams will be carried out.

IV. POLICIES FOR FISHERIES ACTIVITIES

A. General Organization Of Fisheries Activities

Fisheries activities of the Division of Game and Fish will be carried out by the coordinated work of two bureaus having parallel status: (1) the Bureau of Fisheries; and (2) the Bureau of Research and Planning. The Bureau of Fisheries will be responsible for operational phases of management of waters for fish and fishing. The Bureau of Research and Planning will be responsible for fisheries research, inventory and survey of waters and special service jobs requiring trained biologists.

B. Research, Surveys And Inventories By Biologists

Successful fish management must be based on adequate and accurate information about fishes and other aquatic life and about the nature and potentialities of lakes and streams. Therefore, investigation of the basic problems related to fish and fish management and to nature and use of our waters is a prime requisite. Such work will be carried out by a staff of trained biologists as fast as funds, time and personnel permit.

This biological staff will be headed by and responsible to a research supervisor who will direct the research and inventory work. The staff will consist of: (1) a central core of biologists in St. Paul who will be assigned coordination of the program and problems that are state-wide in scope; and (2) a field staff strategically located for investigation of local fisheries problems.

Biologists will be engaged primarily in research and inventory work and in evaluation of management activities, but will also supply technical aid and advice to personnel of the Department, especially to fish managers. They will aid sportsmen by making prompt investigations of fish diseases and kills, and investigate pollution and other problems requiring technical training and will be available, when requested, to explain to the public the technical aspects of fisheries work.

C. Fish Management By Fish Managers

Because of Minnesota's large size and its many waters, it is necessary that the state be organized into Fish Management Districts. Each of these will be in charge of a fish manager — presently called District Fisheries Supervisor — who is responsible for such fish management activities as are delegated to him by the Supervisor of the Bureau of Fisheries.

These fish managers will be stationed at strategically located Fisheries Headquarters, Stations or Hatcheries.

Fish management activities supervised by fish managers in their assigned regions or capacities will include:

1. Maintenance and operation of fisheries headquarters, fish hatcheries, rearing ponds and related facilities.
2. Transportation and planting of fish into suitable waters.
3. Detection of winter kills and rescue of fish in danger of suffocation or stranding.
4. Direction of thinning of fish populations in overcrowded waters.
5. Checking natural reproduction of fish.
6. Management of natural fish spawning areas.
7. Aiding in aquatic nuisance control.
8. Review of proposed projects for alteration of lake and stream beds or levels which may affect fish or fish spawning.
9. General direction of rough fish removal and control field operations.
10. Recommendation for lakes and streams to be surveyed.
11. Recommendation concerning regulations affecting fish and fishing.
12. Direction of local public relations on fish management activities.

Fish stocking or any other fish management decision is, in the final analysis, the manager's decision and must take into account the various aspects of public use of waters. Waters managed experimentally are excepted and must be managed according to research plans.

District Fish Managers have the responsibility for keeping headquarters, fish rearing facilities and assigned inventory in good repair and are expected to suggest any improvements necessary to facilitate and increase efficiency of field operations. Accurate records are to be kept of all fish management operations.

D. Fish Rescue And Transfer

Rescue and transfer of fish in danger of suffocation or stranding will be done by Bureau of Fisheries personnel except emergencies when other help may be necessary. The following rules will be observed in rescue operations:

1. Priority of rescue and transfer will be given northern pike, walleyed pike, bass and trout. Lower priority will be given panfishes and none to most species of rough fish.
2. Fish with serious diseases or parasites are not to be transferred from one water to another.
3. Fish are not to be rescued from an unsatisfactory lake and transferred to another equally unsuitable water.
4. Panfishes are not to be transferred to waters where the same species are already crowded or stunted.
5. Fishes unsatisfactory for angling, such as green sunfish, orange-spot sunfish, or white bass are not to be transferred to other waters. They will be culled from shipments of rescued fish.

6. Correct records are to be kept of fish rescue and transfer operations including numbers and kinds of fish removed from each body of water and numbers and kinds transferred or planted in each body of water.

E. Bait Minnow Production And Management

Private fish hatchery operators will receive encouragement and technical aid and advice in the artificial rearing of bait fishes. Public waters suited primarily to bait fishes will be set aside as designated minnow lakes and commercial seining permitted in them with special gear. Other public waters will be open for minnow seining under such regulations as shall be provided, except for such waters as may be closed to prevent depletion of minnows or alleviate shortage of food for game fishes.

F. Licensed Commercial Fishing

Licensed commercial fishing permitted by statute in boundary and inter-state waters will be managed to produce the largest annual sustained yield of fishes compatible with natural maintenance of fish populations and perpetuation or betterment of existing sport fisheries. Management of these waters will be based on accurate information on the fisheries, fish populations and conditions effecting fish in these waters obtained from fisheries and biological surveys and from catch reports required from each commercial fisherman.

Commercial fishing in those parts of the Red Lakes within the Red Lake Indian Reservation will be managed by agreement between the Department of Conservation, the U. S. Indian Bureau and Red Lake Fishermen's Association.

G. Rough Fish Control And Utilization

Rough fish populations will be controlled, where investigation shows control feasible and necessary, for improvement of public waters for sport fishing, waterfowl, fur bearers or other public use. Usually such operations will consist of removal of rough fish by nets or traps but in special instances chemicals or special gear may be used.

Such operations must take into account the kinds and numbers of rough fish present; the nature of the water they inhabit; the local value of rough fish for sport fishing; and the relationships between rough and sport fishes. Some kinds of rough fish (such as perch) are valuable forage for game fishes when young and some kinds (such as suckers, bullheads and whitefish) supply, in certain waters, considerable sport fishing. In some waters rough fish may be so few or of such kinds that they are of little importance. There are some lakes which will support large populations of rough fish (such as bullheads) which cannot be made into game-fish lakes and in such lakes rough fish can be regarded as an unused fish crop that may be harvested by netting.

Accurate records will be kept on all rough fish removal operations and results of removal operations will be

checked from time to time by fisheries investigators.

Rough fish removal operations will be carried out by private commercial fishermen operating under contract or permit with the Department or by state crews. Usually state crews will be assigned those waters where rough fish removal is needed, but where private contractors cannot operate economically.

Where economic, feasible and effective, dams and screening devices will be installed in streams to prevent carp and other undesirable fishes from entering lakes connected with such streams.

It is recognized that often fish removal represents the harvest of an unused part of the fish crop and an addition to the nation's food supply, however, except in non-game-fish lakes the primary goal of rough fish removal is betterment of sport fishing.

H. Habitat Improvement

Maintenance, restoration and improvement of lakes and streams for the benefit of fish and fishing will be stressed. The program will include:

1. Water conservation and water level control.
2. Pollution, prevention, abatement and control.
3. Improvement and development of natural fish spawning areas.
4. Installation of devices such as traps for control of undesirable fish.
5. Improvement of stream and lake banks, and beds for the benefit of fish and fishing, where conditions allow economical, effective and permanent improvement.
6. Encouragement of proper land use to prevent soil erosion, overgrazing and misuse of forests and wild lands.
7. Rehabilitation of waters by removal of undesirable fishes by use of fish toxicants or other means.

It is recognized that fishing both now and in the future is to a great extent dependent upon maintenance of our waters in a condition suitable for game fishes. If these conditions are maintained natural fish propagation can be expected to supply most of our fishing.

Control of aquatic nuisances, such as excessive water weed and algal growth, is sometimes desirable to permit greater public use of waters. Because of possible effect of such activities on fish, private individuals will be permitted to carry out such aquatic nuisance control only with the approval of the Department and under regulations formulated by it. The Department does not finance aquatic nuisance control or accept responsibility for any mishaps connected with such activities.

No stream improvement work will be started unless there are easements from property owners for the improvement and public access.

I. Farm Fish Ponds

Farm fish ponds, which have proven to be of considerable value in milder climates, are not worth while in Minnesota because of tendency to winter kill and because of general

accessibility of many natural fish lakes and streams. Therefore, no organized farm fish pond program will be undertaken. In Minnesota, ponds are better used for raising an annual crop of bait fishes.

J. Dams, Fish Ladders And Fish Screens

Dams have two important fisheries effects: (1) ponding of water behind a dam may cause the stream to become suitable to kinds of fish different from those originally there; and (2) a dam may impede normal migration of fish. In addition, the construction of a dam may effect other wildlife and recreational values. For these reasons, wildlife and recreational values should be taken in account before a dam is built.

Fish ladders have been found ineffective in Minnesota for facilitating passage of game fish over dams. Rather, they are used mostly by rough fish. There are circumstances, however, where migration of game fish can be aided by a limited amount of engineering and construction work (See Item H-3).

Fish screens, mechanical or electrical will not be installed except to block movement of rough fishes or under unusual circumstances and where adequate attention to proper functioning of the screen is assured.

K. Introduction Of Exotic Fishes

Introduction of kinds of fishes not native to our waters is a dangerous practice since more desirable native species may be replaced by them. Such introduction of exotic fish or other aquatic animals, if any, will be made only after careful study.

L. Cooperation With Other Agencies

Fisheries administrators, so far as able, will keep in touch with fisheries agencies of adjoining states and provinces and with federal agencies operating in Minnesota and will join them in cooperative enterprises of mutual benefit.

V. POLICIES FOR MANAGEMENT OF DIFFERENT KINDS OF FISHES

A. Trout

Trout are naturally cold-water fishes and in such waters supply much sport fishing. Trout management in Minnesota is confined to water of three types: (1) cold-water streams; (2) larger lakes suited to lake trout; and (3) small, often rehabilitated lakes which are usually managed for stream trout. The aim of much of the stocking of catchable stream trout in Minnesota is to supply temporary put-and-take fishing and thereby cause the streams to produce more trout fishing than they would naturally yield. Since hatchery-reared trout are expensive, they will be planted when and where they can be expected to produce the best fishing. The following items make up the trout management policy:

1. Stocking of trout is to be restricted to lakes recognized as suitable to these cold-water fishes and to designated trout streams
2. Trout stocking in typical streams will be based on plans derived

from fisheries surveys and investigations. Stocking of such streams will take into account carrying capacity, the size of the wild trout population and the fishing pressure. Stocking of marginal trout waters to supply put-and-take fishing will be discouraged and when found necessary will be based mostly on fishing pressure since trout cannot be expected to survive long in such waters.

3. Trout stocked in streams will generally be of yearling catchable size, except for any surplus of fingerlings which may be stocked where local conditions are favorable for their survival.
4. Yearling fish will generally be stocked in the spring and during the trout fishing season to obtain best returns to the angler, except in those streams where investigations show that fishing will benefit from stocking of portion of the total stocking quota.
5. Trout will be stocked only in waters accessible to the public (except for federal fish as provided in Section III) and where good returns to anglers can be expected.
6. Southeastern streams will be stocked mainly with brown and rainbow trout; in other trout streams brown, rainbow or brook trout will be stocked as conditions warrant.
7. Stocking in suitable smaller cold-water lakes will be mostly restricted to stream trout fingerlings or yearlings.
8. Stocking of lake trout will be restricted to larger cold-water lakes where investigation shows these fish are needed.
9. No stocking of trout below the lower-most falls or barriers in the North Shore streams will be done.
10. Improvement of trout streams will be carried out where economically feasible and where betterment of trout fishing can be expected to result from it.

B. Walleyed Pike

The walleyed pike is a favorite Minnesota sport fish and considerable emphasis will be placed on its management. It is recognized that in typical walleye lakes the best means of maintaining fishing are: (1) preserving the habitat and natural spawning sites; (2) enforcement of fishing regulations; and (3) maintenance of proper balance between the walleye and fishes associated with it. Stocking of walleyed pike is usually not necessary in such waters. However, there are a number of situations in which walleye stocking is useful. Sites for such stocking should be carefully chosen so that introduced walleyes do not injure fishing for other valuable sport fishes such as bass and lake trout. The following items make up the management policy for walleyed pike:

1. Fry may be stocked in lakes where the fish population has been depleted or reduced because of winter kill or in newly created or rehabilitated waters.

2. Fingerlings may be stocked periodically in larger lakes which have walleye habitat that is unoccupied because of poor natural spawning facilities.

3. Fingerlings may be stocked in lakes where investigation shows it desirable to alter fish population balances.

4. Fingerlings or fry may be planted experimentally in other situations as recommended by fisheries biologists or district supervisors.

5. Stocking of walleyes will be guided by recommendations in lake survey reports where recent reports are available. Elsewhere, the stocking will be left to the judgment of the fish manager and be in accord with the present policy.

6. State-owned rearing ponds for raising of walleyes from fry to fingerling size may be constructed as need for them is shown and will be operated by personnel of the Bureau of Fisheries. They will be located where good construction sites are available and where they can be operated most economically with due regard for location of waters in need of stocking and transportation problems. State-owned ponds will be built according to best present information and engineering specifications and will be provided such engineering maintenance as is necessary. Contributions toward the construction of state-owned rearing ponds shall not influence the distribution of the fish reared in them.

7. Operation of cooperative rearing ponds, usually natural ponds operated with aid of a sportsmens' group, will be authorized when the ponds are strategically located, capable of effective, economical and useful operation and if terms of distribution and use of fish raised is in accordance with Departmental rules and regulations.

C. Northern Pike

The northern pike is one of our most valuable game fishes both because of its sport fishing merits and because of its role as a predator in balancing fish populations. The following items form the management policy for this species:

1. Artificial propagation will be carried on to the extent it is found practical.

2. Emphasis will be placed on management and improvement of natural spawning areas; including water level control, purchase or lease of spawning areas and protection of spawning areas from molestation and fishing.

3. Whenever necessary, northern pike will be rescued from areas where they are in danger of suffocation or stranding and transferred to suitable waters.

4. Northern pike management presents special problems. First, since spawning is largely in temporary water areas of sloughs in the spring, reproduction may decline in dry years, resulting subsequently in lower fishable populations. Secondly, in many Minnesota waters the northern pike is subject to especially heavy fishing pressure. It is taken by angling, trolling with an outboard motor, and by spearing from a darkhouse. Populations of northern pike must be watched carefully and the take curtailed when poor spawning combined with heavy fishing pressure threatens to deplete this species or destroy its effectiveness as a predator for balancing fish populations. How this curtailment will be made will depend on the status of laws affecting this species and extent of restriction needed.

D. Muskellunge

Only a few Minnesota waters are suited for management for muskellunge because of the general abundance of northern pike and the competition between these two species. The management policy for muskellunge is as follows:

1. Lakes especially suited to muskellunge will be selected as the lake survey program progresses, especially those lakes with few or no northern pike, and muskellunge planted in them.
2. Muskellunge will be propagated for planting in waters suited to this species.

E. Largemouth Black Bass

This valuable sport fish is underutilized in many Minnesota waters and bass fishing would benefit from an earlier opening date than is now permitted by law. Management policy for largemouth black bass is as follows:

1. Natural spawning areas will be protected where necessary.
2. Stocking will be limited to suitable waters where natural reproduction is known to be inadequate.
3. Where stocking is found necessary, fingerlings will ordinarily be supplied from state-owned ponds, federal hatcheries or public waters having excess population of fingerlings. Use of natural ponds for bass rearing will be restricted to special circumstances were bass populations have been depleted or destroyed.

F. Smallmouth Black Bass

Smallmouth black bass will be reared in ponds and stocked in suitable streams or lakes where surveys find natural reproduction to be inadequate and where need for artificially reared stock is demonstrated. Natural spawning areas will be protected where necessary.

G. Panfishes

Panfishes (crappies and sunfishes) usually need no aid other than maintenance of natural conditions suited to them. Sometimes they become so abundant that slow-growth and stunting results. The following items form the management policy for panfishes:

1. No panfish are to be stocked, except in new or restored waters or in special situations such as childrens' fishing ponds and in lakes otherwise suited to panfish but with low natural reproduction.
2. No state-owned or cooperative rearing ponds will be operated for panfishes.
3. Natural spawning areas will be protected or improved where necessary.
4. Excessively large populations of stunted panfish may be thinned out by netting or other means and the fish transferred to waters of the types specified above or destroyed if unsuitable or not needed for planting.

H. Catfish

Channel catfish may occasionally be planted in southern and southwestern lakes where natural reproduction is inadequate. No stocking is to be done in streams except where the fishes are confined between barriers such as dams.

I. Whitefish And Tullibee

Whitefish may be reared on a small scale for experimental research in some inland lakes where this species may have possibilities as a sport fish. No herring or tullibee will be raised or stocked except for experimental projects.

J. Bait And Forage Fishes

Bait and forage fish will be propagated when necessary for food of predaceous fishes, especially muskellunge, being reared in ponds.

K. White Bass

White bass is generally regarded as an unsatisfactory game fish in Minnesota lakes. No white bass will be reared or transplanted to waters not now inhabited by this species.

L. Grayling

Grayling will be propagated and stocked to a limited extent in small landlocked reclaimed lakes if present experimental trials show it to be successful and if it proves to be a satisfactory sport fish.

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