NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

FISHPOND MANAGEMENT

(No.)

CODE 399

DEFINITION

Developing or improving impounded water to produce fish for domestic use or recreation.

PURPOSE

To improve or maintain fish production and fishery use by maintaining a favorable aquatic habitat, maintaining a balanced fish population, reducing competition from unwanted plants and animals and supplementing natural food supplies.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to ponds, lakes, or reservoirs in recreation land or wildlife land where a crop of fish is wanted. This practice does not apply to the management of ponds for commercial aquaculture production.

CRITERIA

I. Maintaining Favorable Habitat

A. Water quantity

1. The pond must meet the minimum specifications for the 378-Pond standard.

2. The source of water must be sufficient to maintain the planned water level.

3. The pond must have a surface area of at least 0.5-acre.

4. The pond must have at least one-fourth of its area deeper than 8 feet.

B. Water quality

1. Livestock must be excluded from the pond.

2. The pond must be protected from contamination from barnyards, septic tanks, pesticides, excess nutrient or sediment runoff and all other types of pollution.

3. Activities that lead to dissolved oxygen reductions (overloads of dead or decaying vegetation, run-off water high in nutrients, etc.) must be avoided. Fish generally become stressed when dissolved oxygen levels drop below 4 ppm.

4. Most species suitable for stocking do best when the pH is between 6.5 and 9.0; the pH of the pond level should be maintained within those levels.

5. If trout are to be stocked in the pond, surface water temperatures must not exceed 70^{o}F.

C. Structure

1. If intensive management, heavy fishing pressure or catfish spawning is planned, artificial structures may be placed in the pond.

2. Structures should be placed in 4-8 feet of water. Structures should be placed at the rate of two 50-ft^2 structures per acre.

D. Natural Food Production

Plankton is the principal fish food in Ohio ponds and most ponds have adequate fertility from run-off to maintain plankton densities sufficient to sustain well-stocked ponds. Addition of extra fertilizers normally causes more problems and should be avoided in all except the most unusual low fertility situations.

II. Maintaining a Balanced Population

A. Stocking

1. Only new or renovated ponds from which all fish have been removed should be stocked. Adding fish to an existing population may aggravate the problem of overpopulation or lack of certain species. One exception to this is that channel catfish (which usually do not spawn in ponds) may be stocked every few years to maintain a fishable population.

2. Stocking recommendations must be consistent with the landowner's objectives, expected management and the pond's location, fertility and water quality.

3. There are a limited number of fish species suited for stocking in Ohio ponds; landowners interested in stocking species other than those listed below should contact the ODNR-Division of Wildlife, Ohio State University Extension or other experts for stocking recommendations.

4. Species and Rates (per surface acre)

a. Largemouth Bass: Bluegill/Redear Sunfish (fingerlings); 100:500

b. Largemouth Bass: Bluegill/Redear Sunfish (larger fish); 50:250

c. Largemouth Bass: Minnows (bluntnose, fathead, golden shiners); 100:750

d. Channel Catfish (fingerlings) with bass/bluegill 100
Alone 200

e. Trout 300-600

5. The pond should be protected from the intentional or accidental introduction of undesirable fish species such as carp, bullheads, green sunfish or rock bass.

6. Stock bass and bluegill fingerlings simultaneously in the fall. When this cannot be done, stock bluegills in the fall and bass the following spring.

B. Population Management

1. Harvest

a. Harvest 50 to 100 pounds per acre of fish from the pond each year. For each pound of bass harvested, remove 4 to 5 pounds of forage fish.

b. Do not harvest fish until that species has spawned for the first time.

2. Population reclamation

a. If monitoring of fish populations or fish condition indicate improper population balance (e.g., stunted fish, overabundance of forage fish, unwanted species, lack of bass spawning) than reclamation of proper balance should be established through the use of one or ore of the following techniques. Complete removal of all fish is preferred over partial population reductions.

b. Seining or trapping should be used for partial removal of fish. If excess forage fish are the problem, at least 50-100 pounds of forage fish per acre should be removed.

c. A drawdown that reduces the pond level by ¼ to ½ of normal during the summer may be used to reduce forage fish spawning. Maintain the drawdown throughout the summer until water temperatures drop below 80^{o}.

d. When using the addition of adult predatory fish (largemouth bass) to control forage fish, the bass should be added at the rate of 20-30 bass 6 inches or longer per acre.

e. Fish toxicants may be used in full or drawn down ponds. Read and follow label directions for the use of fish toxicants. Contact the Ohio Department of Natural Resources regarding a permit for use of fish toxicants.

f. Following elimination of existing fish, stock the pond according to the recommendations given in section II. A. 4.

III. Controlling Unwanted Plants and Animals

A. Plants

1. Limited amounts of aquatic vegetation do not prevent a problem for fish management. Once the vegetation covers more than 20 percent of the surface area, control measures should be implemented. All possible methods (biological, chemical and mechanical removal) should be considered and evaluated before a decision is made as to the types of control used.

2. Methods of Control.

a. Biological

i. Triploid white amur (grass carp) should be stocked at rates listed in Ohio Pond Management (Bulletin 374, OSU Extension).

ii. The use of inert dyes or high plankton levels to reduce light penetration will be used only where weeds are a problem in water depths of over two feet and intensive landowner management is expected.

b. Chemical

i. Specific herbicide recommendations shall be obtained from Ohio Pond Management (Bulletin 374, OSU Extension) or How to Identify and Control Water Weeds and Algae (Applied Biochemists).

ii. Recommendations shall always be made to read the entire label before applying, follow label directions, restrictions and label rates.

iii. To reduce the chances of a fish kill due to decomposition of weeds, treat early in the season and treat no more than one-half the pond at one time.

B. Animals

Animals will be controlled before reaching a point where they threaten physical integrity of the pond (e.g. muskrats, crayfish burrows), contribute to poor water quality (e.g. ducks and geese) or provide excessive predation.

IV. Supplemental Feeding

Supplemental feeding will be undertaken only when the landowner can carry out intensive management; it is not necessary for good fish production. Feed only as much as the fish will eat at one time.

CONSIDERATIONS

Although not critical to the successful management of fish populations, the following recommendations will make the fishing experience safer and more enjoyable. Pond safety starts with removing hazards such as debris that can injure or entangle persons entering the water. Warning sings are useful, especially if there are known dangerous situations. Lifesaving devices should be available near the pond. Observe ice thickness rules before ice fishing.

A variety of vegetation may be planted to improve the visual appeal of the pond, screen unwanted sights or noise and increase pond use by wildlife. Wood duck nesting boxes or other structures may be erected to increase the chances of wildlife using the pond. Providing a connection from the pond to other habitats will increase its use by wildlife.

PLANS AND SPECIFICATIONS

Plans and specifications are to be prepared for the specific pond conditions based on this standard. Plans and specifications may include job sheets, standard drawings, the kind, amount or quality of materials to be used or the timing or sequence of management activities.

OPERATION AND MAINTENANCE

The operation and maintenance of the pond is the responsibility of the landowner. Although most of the pond management is based on allowing natural biological processes to occur, active involvement by the landowner is needed to maximize the production of harvestable fish.

The following items are general recommendations that are important to maintaining a good quality fish population. They may be carried out in a variety of specific ways.

1. Maintain the physical condition of the pond and its surroundings so as to ensure adequate water levels and proper water quality.

2. Monitor and evaluate fish numbers and condition in order to adjust management activities or take corrective measures.

3. Monitor and evaluate quality of the water in order to take corrective measures, if feasible.

REFERENCES

Ohio Pond Management, Bulletin 374, The Ohio State University, Cooperative Extension Service, 1991.

How to Identify and Control Water Weeds and Algae. Applied Biochemists, Inc. 1983.

Controlling Aquatic Vegetation with Triploid Grass Carp. Illinois Natural History Survey Circular 57. 1987.

Fish and Fish Food Propagators. Ohio Division of Wildlife, Publication 196.