

**NATURAL RESOURCES CONSERVATION SERVICE
NEW JERSEY
CONSERVATION PRACTICE STANDARD**

FISHPOND MANAGEMENT

(Ac.)

Code 399

DEFINITION

Managing impounded water for the production of fish or other aquatic organisms (non-commercial use).

PURPOSE

1. To provide favorable habitat for fish and other aquatic organisms.
2. To develop and maintain a desired species composition and ratio.
3. To develop and maintain a desired level of production.

CONDITIONS WHERE PRACTICE APPLIES

In warm and cold water ponds, lakes, and reservoirs.

CRITERIA

General Criteria Applicable To All Purposes

Structures will meet or exceed the requirements of the appropriate National Standard; i.e. a constructed pond will meet or exceed the requirement in Pond (378).

All Federal, State and local regulations will be followed and necessary permits obtained prior to stocking, etc. A fish stocking permit is required from the New Jersey Division of Fish and Wildlife.

Do not recommend species that are considered invasive or may become invasive in surrounding waters. The NJ Division of Fish and Wildlife prohibits stocking of most non-indigenous or non-established species of fish including such species as carp, tilapia, etc.

Bullhead, pike, and yellow perch are not recommended for stocking.

Additional Criteria To Provide Favorable Habitat For Fish And Other Aquatic Organisms

The site will be protected from flooding, sedimentation, and contamination.

Surface Area- For cold water species .1 acre minimum when fish are fed and .25 acre when no feeding takes place. For warm water species such as bass and bluegills, .25 acres is minimum.

Depth- In spring fed ponds with running water, 25% of the total area shall be 6 feet deep or deeper if there is no danger of winter kill or summer oxygen depletion. If there is this danger then 25 % of the total area shall be 8 feet or deeper. In ponds without running water or springs 25% of the total area shall be 10 feet or deeper regardless of the risk of winter kill or oxygen depletion.

Temperature- For cold water species the water temperature should remain below 70 degrees F throughout the year. Higher temperatures can be tolerated only for a short duration. At no time should the temperature exceed 75 degrees F. For warm water species the water temperature should exceed 68 degrees F throughout the summer.

pH- The pH of waters should be between 6.0 and 9.0 for all species. However, for optimum fish production the range is 6.5 to 9.0. Toxicity problems may arise below 6.5. Lime applications may be used to raise the pH. Lime may also help clear the water.

Conservation practice standards are reviewed periodically and updated as needed. The most current version of this standard can be obtained on our website at: <http://www.nj.nrcs.usda.gov/fotg/practices.html>

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Aquatic vegetation shall be controlled. Several forms of mechanical control of weeds can be used to help reduce vegetation. Keep pond edges at least 3 feet deep and steeply sloped (2:1). Rake or pull weeds and remove as much as possible from the pond. Some emergents such as cattails will die if cut below the water line for several consecutive seasons.

Chemical control can be effective in keeping weeds in check in many ponds. In New Jersey, a certified aquatic pesticide applicator is required for the introduction of chemicals into any aquatic environment.

Additional Criteria To Develop And Maintain A Desired Species Composition And Ratio

Stocking Rates- The rates below are optimum rates for ponds without additional feeding. Rates are for ponds with optimum water quality. Decrease stocking rates for waters with less than optimum water quality. Rates are number of fish per surface acre. Stock warm water species in the late spring and summer and cold water species in the early spring or fall.

Trout – 600 fall fingerlings (5-6”), or 2000 spring fingerlings (2-3”). Rainbow trout are the preferred species for water with a pH of 6.5 or greater and brook trout for waters with a pH below 6.5. Restock every two years.

Warm water stocking combinations –

- a. 100 bass fingerlings the first year followed by 1000 bluegill fingerlings OR fathead minnows the next year.
- b. 100 bass fingerlings and 500 catfish fingerlings and 1000 fathead minnows the first year or instead of the minnow 1000 bluegill fingerlings the following year.
- c. Up to 2000 (1-3”) or 750 (4-6”) catfish fingerlings

To improve fathead minnow spawning, install 2 to 4 spawning boards(1”x4”x6”) in water one to two feet deep. Attach each board to the bottom so the boards are about 6”above the bottom. Species for stocking will be limited to those that are adapted for use in ponds, lakes or reservoirs in your state or area.

To improve channel catfish spawning provide nest boxes such as nail kegs, milk cans, etc. If no spawning occurs, maintenance stocking every 2-3 years is required to provide an annual fishery.

Harvesting- Trout can be harvested as soon as they are 7-8”long, usually 6-10 months after stocking. Harvest all trout within two years of stocking.

A stunted bluegill population can develop if bluegills are under harvested or bass are over harvested. Bass should be harvested no sooner than 2 years after stocking to allow for some reproduction to take place. About 15 times as many bluegill should be harvested as bass.

Channel catfish may be harvested during the fall following stocking provided they have reached at least 12”. This is the legal size limit in New Jersey.

Additional Criteria To Develop And Maintain A Desired Level Of Production

The desired level of production can be maintained through fertilization or supplemental feeding.

Feeding trout and channel catfish a prepared food on a regular schedule can help support the fish population. Feed only as much food as the fish will eat in a 3 minute period. High water temperatures can cause trout to feed erratically. Monitor trout feeding efforts closely when water temperatures are above 65 degrees. Discontinue feeding trout after November 1st. Discontinue feeding catfish in the fall when the water temperature drops below 68 degrees.

Inorganic fertilizers have been used in some cases to stimulate algal growth and increase the food supply. Most farm ponds in New Jersey do not need fertilization because they are already enriched. Fertilization is generally not recommended.

CONSIDERATIONS

Consider liming acidic soils in the watershed to achieve a neutral pH for best production.

Consider alternatives to the use of pesticides in the drainage area above the site, which may have negative impacts to water quality.

Consider the use of filter strips or other practices to ensure that discharges from ponds, lakes, and reservoirs will meet state water quality standards.

Consider seining to remove 3-4" long bluegills until the catch has an even number of all size and age classes.

Consider trapping excess bluegills. Remove bluegills 3-4" long until the catch per day is 50% of the number caught when trapping began. Trapping should be done during the months of June, July or August. The trapping period shall be at least two weeks.

Consider aeration to alleviate oxygen deficiencies. Aeration is needed in trout ponds when dissolved oxygen levels are less than 5mg/l and in bass or catfish ponds when dissolved oxygen levels are less than 3mg/l. Aeration can be accomplished by a commercial aeration device, an irrigation pump drawing water from mid-depth and spraying back over the pond, keeping much of the water ice free in the winter..

Consider providing additional fish and wildlife habitat within or around the impoundment for cover and breeding purposes that will not compromise the integrity of the structure or the purpose of this practice.

Consider controlling common pond pests such as muskrats, snapping turtles, and snakes.

Muskrats can be trapped or a physical barrier on the dam can be installed. This barrier must be at least 1 foot above the water line and 3 feet below normal water.

Consider liming ponds. Ponds with low pH soils should have 4000 lbs. of agricultural limestone per acre placed on the bottom prior to filling. Existing ponds with low pH should be treated with limestone at a rate of 2000 pounds per surface acre. Repeat as needed to maintain a pH of 6.0 or higher. These rates should also help to clear the ponds water.

Consider applying agricultural gypsum at 1000 pounds per surface acre to help clear the water from suspended sediment.

PLANS AND SPECIFICATIONS

Plans and specifications for fish and other aquatic organism management will be in keeping with this standard and will describe the requirements for applying this practice to achieve its intended purpose. Specifications for this practice will be prepared for each site. Specifications will be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other documentation.

Requirements for the operation and maintenance of this practice shall be incorporated into site specifications.

OPERATION AND MAINTENANCE

The client will receive a plan or specifications describing the following management and corrective actions that are required for the successful management of the pond, lake or reservoir.

1. Managing fish or other aquatic organism populations.
2. Supplemental feeding.
3. Removing undesirable and overpopulated organisms.
4. Aquatic plant control.
5. Fertilizing.

REFERENCES

- a. Trout Ponds for Recreation. USDA Farmers Bulletin No. 2249. Washington, DC.
- b. Warm Water Fish Ponds, USDA Farmers Bulletin No. 2250, Washington, DC.
- c. Pennsylvania Fish Ponds. Penn State Cooperative Extension Service. State College, PA.
- d. Fish Management in New York Ponds. Cornell Cooperative Extension Information Bulletin 116. Ithaca, NY.
- e. Freshwater Ponds: Concepts in Warm Water Fisheries Management. Cornell Cooperative Extension. Ithaca, NY.

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