Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

FISHPOND MANAGEMENT

CODE 399

(ac)

DEFINITION

Managing impounded aquatic habitat and water quality for the production of fish.

PURPOSE

This practice is used to accomplish the following purpose:

- Provide favorable habitat for fish and other aquatic organisms to sustain the desired fish populations and levels of production.

CONDITIONS WHERE PRACTICE APPLIES

In warm and cold-water ponds, lakes, and reservoirs not managed for commercial aquaculture purposes.

CRITERIA

General Criteria Applicable to All Purposes

Ponds must meet the requirements of NRCS Conservation Practice Standard (CPS) Pond (Code 378).

Exclude livestock from the pond. If livestock use the pond for water, limit and control access.

Control nuisance species in compliance with State and local regulations.

Protect the site from flooding, sedimentation, and contamination.

Control undesirable aquatic vegetation.

Comply with State and local regulations when selecting species to be stocked.

Discharges from ponds, lakes, and reservoirs will meet State water quality standards.

Prevent the fish in the pond from escaping or being introduced into adjoining waters where native species might be adversely affected in accordance with State and local regulations.

Limit species for stocking to those that are locally adapted for use in ponds, lakes, or reservoirs.

Based on client objectives and local regulations, develop a pond management plan that specifies species selection, stocking rates, and ratios.

Develop species selection, stocking rates, and ratios with respect to the size, depth, water temperature, and water quality of the pond to be stocked.

Maintain the desired level of production through liming, fertilization, slot limits, harvesting, or supplemental feeding. Address water quality conditions (e.g., dissolved oxygen level, total hardness, pH, alkalinity, phytoplankton bloom, etc.) based on local conditions using the pond management plan.

Aquatic organism health issues directly affect production levels and need to be included in the pond management plan. Follow proper diagnostic sampling procedures during fish kills and when submitting samples to diagnostic labs.

CONSIDERATIONS

Use native species whenever possible. Nonnative game fish can escape ponds and severely affect adjacent ecosystems.

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

Use nutrient and pest management practices in the watershed to maintain water quality.

Consider the effect of additional uses (e.g., livestock watering, recreation, irrigation, etc.) on the fish and aquatic organism population.

Supplemental aeration equipment improves gas transfer and water quality, and minimizes fish stress within the impoundment.

The addition of submerged structures improves habitat within the impoundment.

The removal of accumulated debris or sediment within the impoundment increases water depth, removes accumulated nutrients, rejuvenates spawning habitat, and/or improves other habitat features.

Use biological and/or mechanical methods for the control of nuisance aquatic species in accordance with State laws and regulations.

Provide additional fish and wildlife habitat within or around the impoundment for cover and breeding purposes. A vegetated buffer around the pond can provide multiple benefits, such as nesting and escape cover, reduced bank erosion, improved water quality, and more.

Grassy cover around the impoundment that may provide nesting habitat should not be mowed until after the primary nesting season.

PLANS AND SPECIFICATIONS

Prepare a pond management plan using approved specification sheets, job sheets, technical notes, narrative statements in the conservation plan, or other documentation.

The plan will include—

- A location map and plan view of the site.
- Statement of purpose that describes the species desired and management goals.
- Evaluation methods (observation, seining, electroshocking, harvest records, etc.) for determining the population dynamics of fish and other aquatic organisms.
- Reference to State aquatic nuisance species management plan recommendations, if applicable.
- Permit requirements and regulations, if applicable.

OPERATION AND MAINTENANCE

Develop an operation and maintenance plan that includes the following actions that are required for the successful management of the pond, lake, or reservoir:

- Evaluation of habitat conditions on a regular basis.
- Management of fish or other aquatic organism populations.
- Supplemental feeding where applicable.
- Removal of undesirable and overpopulated organisms.
- Management and control of aquatic vegetation.
- Application of fertilizer and lime where applicable.
- Monitoring and maintenance of desired water quality conditions (e.g., dissolved oxygen level, total hardness, pH, alkalinity, phytoplankton bloom, etc.).
- Periodic inspection and maintenance of structural components (e.g., water level control equipment).
- Detection and identification of fish pathogens and instructions for collecting and preserving samples.
- Operation and maintenance procedures for water treatment and escape-control mechanisms at discharge points.

REFERENCES

American Fisheries Society, Fish Culture Section. 2016. Suggested Procedures for the Detection and Identification of Certain Finfish and Shellfish Pathogens (Blue Book). Bethesda, MD.

Cassani, J.R. (editor). 1996. Managing Aquatic Vegetation with Grass Carp. American Fisheries Society. Bethesda, MD.

Hubert, W.A. and M.C. Quist (editors). 2010. Inland Fisheries Management in North America, Chapter 21, Small Impoundments. Third Edition. American Fisheries Society. Bethesda, MD.

Rasmussen, J.L. and S. Schainost. 2006. Mississippi Interstate Cooperative Resource Association: Summary of Permit Authority and Prohibited Species by State with Special Emphasis on Asian Carp. Bettendorf, IA.

NOTE: State fish and wildlife agencies and land grant universities may also provide publications on fishpond management. The following references are examples from select State agencies and land grant universities.

Beem, M. 2017. Common Pond Problems. Oklahoma Cooperative Extension Service.

Beem, M. 2016. Grass Carp for Pond Weed Management. Oklahoma Cooperative Extension Service.

Crochet, D.W. 2019. Fish Pond Management Guide. South Carolina Department of Natural Resources.

Masser, M.P., T.R. Murphy, and J.L. Shelton. 2017. Aquatic Weed Management Herbicides. Oklahoma Cooperative Extension Service.

Rice, J., J.M. Fisk, K. Hining, R. Richardson, and S. Thompson. 2018. Pond Management Guide. North Carolina Cooperative Extension Service.

Texas Chapter of the American Fisheries Society. 2005. Texas Farm Ponds: Stocking, Assessment, and Management Recommendations. Special Publication Number 1.