NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

FISHPOND MANAGEMENT

(Acre)

Code 399

DEFINITION

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

PURPOSE

- To provide favorable habitat for fish and other aquatic organisms which help sustain the fish population.
- To develop and maintain a desired species composition and ratio.
- To develop and maintain a desired level 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

Structures will meet or exceed the requirements of the Florida NRCS Conservation Practice Standard Pond, Code 378.

Exclude all livestock from the pond.

Follow all federal, state and local regulations and obtain necessary permits obtained prior to stocking or management of ponds.

Control undesirable aquatic vegetation in accordance with Florida NRCS Conservation Practice Standard Integrated Pest Management, Code 595. Refer to UF-IFAS for planning guidance when managing undesirable aquatic vegetation.

Protect the site from flooding, sedimentation, and contamination.

Discharges from ponds, lakes, and reservoirs shall 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.

Impact to cultural resources, wetlands and Federal and State protected species need to be avoided or minimized to the extent practical during planning, design and implementation of this conservation practice in accordance with established National and Florida NRCS policy; General Manual (GM) Title 420-Part 401, Title 450-Part 401, and Title 190-Parts 410.22 and 410.26; National Planning Procedures Handbook (NPPH) FL Supplements to Parts 600.1 and 600.6; National Cultural Resources Procedures Handbook (NCRPH); and The National Environmental Compliance Handbook (NECH).

Additional Criteria to Provide Favorable Habitat for Fish and Other Aquatic Organisms

Look to the Florida NRCS Conservation Practice Standard Guidance, Fishpond Management Code 399, for additional components of this practice including, but not limited to:

- Adjusting pond water pH;
- Aquatic vegetation control
- Managing fish diseases and parasites.

Ensure sufficient vegetative cover on the banks to prevent erosion due to wave action or use of the bank area. Use Florida NRCS Conservation Practice Standard Critical Area Planting, Code 342, if bank erosion is an issue.

Establishment of native plant species will be encouraged over introduced species. Do not use

Category I invasive plant species, as defined by the Florida Exotic Pest Plant Council: http://www.fleppc.org/. Do not use Class I Prohibited Aquatic, Wetland and Invasive Plants as listed by Florida Department of Environmental Protection:

When a pond is situated below cropland, grazing land or other disturbed land, use Florida NRCS Conservation Practice Standard Filter Strip, Code 393, to reduce or prevent sediment, particulate matter and/or dissolved contaminants from affecting water quality.

Any use of nutrients, pesticides or herbicides will be in accordance with Florida NRCS Conservation Practice Standards Nutrient Management, Code 590 and Integrated Pest Management, Code 595, respectively.

In order to ensure water quality, exclude livestock from accessing fishponds and provide alternate water sources and shade areas. Refer to Florida NRCS Conservation Practice Standards Water Facility, Code 614; Livestock Shade Structure, Code 717; and Use Exclusion, Code 472.

Additional Criteria to Develop and Maintain a Desired Species Composition and Ratio

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

To maintain the desired species composition and species ratios, develop a plan with the client, which outlines species selection(s) and stocking rates in accordance with the Florida Fish and Wildlife Conservation Commission policy and guidelines

Develop stocking rates and species selection with respect to the size, depth, water temperature and water quality of the area to be stocked. Further information on species stocking rates and harvest management can be found in Florida NRCS Conservation Practice Standard Guidance, Fishpond Management Code 399.

Additional Criteria to Develop and Maintain a Desired Level of Production

Maintain the desired level of production through liming, fertilization, slot limits, harvesting, or supplemental feeding. Desired water quality conditions (e.g., dissolved oxygen level, pH, alkalinity, etc.) reflect local conditions and should be addressed in the pond management plan. Refer to Florida NRCS Conservation Practice Standard 399 Guidance, Fishpond Management, for further information.

Aquatic organism health issues directly affect production levels and need to be included in the pond management plan. Follow proper diagnostic sampling procedures and submitting samples to diagnostic labs relating to fish kills. Refer to Florida Department of Agriculture and Consumer Services, the Division of Animal Industry for further information (http://www.doacs.state.fl.us/ai/labs/labs_main.shtml).

CONSIDERATIONS

Consider the use of native species.

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 and aquatic organisms.

Consider the use of appropriate water treatment practices, such as filter strips, below structures to ensure that discharges from ponds, lakes or reservoirs will meet state water quality standards. Use appropriate erosion control, nutrient and pest management practices in the watershed to maintain water quality. Refer to Florida NRCS Conservation Practice Standards Filter Strip, Code 393; Nutrient Management, Code 590; and Integrated Pest Management, Code 595, for further information.

Consider methods to prevent the fish in the pond, lake or reservoir from escaping or being introduced into adjoining waters where native species might be adversely affected.

Consider using only species of fish or aquatic organisms that are specifically adapted to impounded waters.

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. Do not mow grassy cover that may provide nesting habitat around the impoundment until after the primary nesting season.

Consider the amount of energy required to develop and maintain the fishpond; plan the least energy consumptive methods and techniques that adequately meet the client's objectives and resource concerns.

PLANS AND SPECIFICATIONS

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

The plan needs to include:

- A location map and plan view of the site;
- Statement of purpose that describes the species(s) desired and management goals;
- Kind, size, number and date of fish stocking;
- Evaluation methods (observation, seining, electroshocking, catch record, etc.) for determining the population dynamics of fish and other aquatic organisms;
- Evaluation and techniques for managing water quality and aquatic vegetation;
- Reference to Statewide Invasive Species Strategic Plan for Florida; and
- Permit requirements and regulations, if applicable.

OPERATION AND MAINTENANCE

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

1. Evaluation of habitat conditions on a regular basis, including monitoring and maintenance of desired water quality conditions (e.g., dissolved oxygen level, pH, alkalinity, etc.);
2. Management of fish or other aquatic organism populations, including stocking and harvesting recommendations;
3. Supplemental feeding, liming or fertilization, where applicable;
4. Recommendations for control of undesirable plant or animal populations;
5. Management and control of aquatic vegetation;
6. Periodic inspection and maintenance of structural components (e.g., water level control equipment); and
7. Detection and identification of fish pathogens and instructions for collecting and preserving samples.

REFERENCES

Flickinger, A., F.J. Bulow, and D.W. Willis. 1999. Chpt. 21, Small Impoundments. In: Kohler, C.C., and W.A. Hubert (eds). Inland Fisheries Management in North America, 2nd Ed. American Fisheries Society, Bethesda, MD.

Moore, H.M., F.M. Chamberlain and J.J. Brice. 1999. A Manual of Fish Culture. Fish Culture Section, American Fisheries Society, Bethesda, MD.

NRCS. 1979. Management for Wildlife: A Supplement to Wildlife Standards and Specifications for Florida. Gainesville, FL. 89pp.

Thoesen, J.C. 2004. Suggested Procedures for the Detection and Identification of Certain Finfish and Shellfish Pathogens (Blue Book). Fish Health Section, American Fisheries Society. Bethesda, MD.