

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

FISHPOND MANAGEMENT

(Ac.)

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

Ponds must meet the requirements of Conservation Practice Standard 378, Pond. Ponds suitable for proper management will be at least one-half surface acre in size.

Livestock shall have controlled access to the pond. Consider using properly-installed gravity-fed pipe or trickle tube in the embankment of the pond to fill a downstream watering facility (Practice Code 614) and excluding livestock from the pond itself.

Be aware of the invasive aquatic plants that are listed at <http://www.texasinvasives.org/> Control undesirable or nuisance species in compliance with state and local regulations. [TPWD - Invasive, Prohibited and Exotic Species](#), [Quick Guide to Prohibited Species](#).

Protect the site from flooding, sedimentation, and contamination.

Comply with state and local regulations when selecting fish species to be stocked. Avoid stocking with fish species that are invasive or may become invasive in surrounding waters. 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.

Provide some relatively deep water (at least 10 feet in depth) in order to minimize impacts from freezing, evaporation and to provide more diverse habitat.

Install drainpipe in order to drawdown water for management purposes.

Install structures such as brush piles, concrete blocks, tile pipe, wooden pallets, and tire bundles for fish, and other aquatic organisms if adequate natural structure and submerged habitat is not available,.

Maintain no greater than 10 to 25 percent surface area coverage of desirable aquatic vegetation for fish, amphibian, and invertebrate habitat.

Treat excessively turbid or muddy water by controlling erosion on the drainage area or treating water with gypsum, alum, or organic matter to clear the water.

Discharges from ponds, lakes, and reservoirs will meet state water quality standards. Locate new ponds in areas that will have good water quality with minimum sedimentation and contamination problems.

All Federal, State and local regulations will be followed and necessary permits obtained prior to constructing, stocking, etc.

Criteria to Develop and Maintain a Desired Species Composition and Ratio

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.

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

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.

Avoid stocking ponds with fish from other streams, lakes, or ponds. Such stocking methods increase the chances for introducing undesirable species or diseases.

Stocking rates shall follow the recommendations of the [Texas Farm Ponds: Stocking, Assessment, and Management Recommendations 2005 Edition](#)

Consult with NRCS biologists, field office staff or TPWD biologist, or private consultant for alternative species and stocking rates.

To maintain the desired species composition and species ratios a plan will be developed with the client to evaluate future species composition and species ratios through observations, seining and catch records.

Harvest fish after initial stocking using the following general guidelines for maintaining ratios in recreational ponds. Maintain written records of number of fish that are harvested by species from the pond. Adjust harvest numbers based on results of all available information.

Do not remove any largemouth bass until third year following stocking. Catch and release only before third -year. After third year, do not remove more than 20 bass per year.

Bluegill may be removed during first summer after stocking. Remove 8 to 10 pounds of bluegill for every one pound of largemouth bass removed from the pond.

NRCS, Texas

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Catfish may be removed during second year after stocking. Do not remove more than 10 catfish per year.

Different ratios, harvest rates, and population numbers can be planned where the client is interested in managing for trophy bass, large bluegill, catfish or other special management objectives. Consult with NRCS or TPWD biologists for alternative harvest and population management recommendations

Periodically seine the pond to determine species composition, relative population numbers, and general health and condition of fish.

Renovate pond to remove all fish and restock if desired species or population balance cannot be corrected through proper management.

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.

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.

Consider the 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/or aquatic organism population.

Consider the use of supplemental aeration equipment to improve gas transfer, water quality, and minimize fish stress within the impoundment.

Consider providing 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 be mowed outside the dates of the primary nesting season, which is March 1 – July 1).

PLANS AND SPECIFICATIONS

A pond management plan will be prepared 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(s) 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; and

- 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:

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

REFERENCES

A Manual of Fish Culture. Fish Culture Section, American Fisheries Society, 1999.

[Texas Farm Ponds: Stocking, Assessment, and Management Recommendations 2005 Edition](#)

Inland Fisheries Management in North America, Second Edition. Chapter 21, Small Impoundments. Kohler, C.C. and W.A. Hubert, editors. American Fisheries Society, 1999.

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

Mississippi Interstate Cooperative Resource Association: Summary of Permit Authority and Prohibited Species by State with Special Emphasis on Asian Carp. Aquatic Nuisance Species Task Force, 2000.

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

NOTE: State fish and wildlife agencies and land grant universities may also provide publications on fishpond management

APPROVAL AND CERTIFICATION

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(Ac.)

CODE 399

PRACTICE SPECIFICATIONS APPROVED:

/s/ Russell O. Castro
State Wildlife Biologist

Date

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/s/ Susan Baggett
State Resource Conservationist

Date

CERTIFICATION:

Reviewed and determined adequate without need of revision.

Zone Wildlife Biologist

Date

Zone Wildlife Biologist

Date