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WILDLIFE

Key Concepts: Quality Largemouth Bass Sport Fishing in Ponds

By Steven Smith, Wildlife and Fisheries Consultant | sgsmith@noble.org



Sport fishing is a common recreational use of many ponds. Largemouth bass and bluegill are frequently stocked into new and existing ponds for recreational purposes. The combination of these two species work well together when stocked and managed properly. Ponds managed for fishing are typically managed for quality largemouth bass sport fisheries. Such ponds typically contain a variety of sizes of each species, with the majority of adult largemouth bass ranging from 0.5 to 3 pounds. This handout highlights items that pond managers should consider when managing a pond for a quality largemouth bass sport fishery.

LARGEMOUTH BASS AND BLUEGILL BIOLOGY

LARGEMOUTH BASS

- Largemouth bass are the top fish predator in most ponds.
- A pond supports a limited amount of largemouth bass, ranging from 10-125 pounds per acre, depending upon pond water nutrients and plant and prey species present.
- Largemouth bass become sexually mature around 8 inches and spawn when water temperature is 60 to 75

degrees Fahrenheit.

- Largemouth bass size and growth depends upon water temperature and the abundance and sizes of prey available to largemouth bass.

BLUEGILL

- Bluegill are an excellent prey species for largemouth bass.
- Adults are sexually mature around 3 inches and are colony nesters.
- Bluegill begin spawning when water temperature is around 75 degrees Fahrenheit.

- A female typically produces 12,000 to 67,000 eggs at a time and can spawn once every 30 days when adequate food, spawning habitat and water temperature are present.
- Identifying features include dorsal fin spot, black or navy opercular flap, and small mouth.

POND DESIGN AND CONSTRUCTION

- Location should have suitable soil and watershed.
- Soil needs adequate clay.
- Watershed area needed depends upon desired pond volume.
- Surface area of pond should exceed 0.5 acre for a quality bass and bluegill sport fishery.
- Slope of most shorelines should be 3:1 (30 percent) to minimize erosion, limit aquatic plants, minimize surface area fluctuation, and provide bank fishing access.
- Maximum depth should exceed 7 feet



in the Southeast U.S. and exceed 13 feet in semiarid portions of the U.S. to provide adequate permanent water during a dry year.

- Overflow pipes and/or emergency spillways should be installed and maintained to handle excess water.

WATER QUALITY

- Dissolved oxygen is lowest prior to sunrise and is highest during late afternoon.
- Water clarity can be measured with a Secchi disk.
- Turbidity is the measure of visibility obstruction in water, which is typically caused by soil, phytoplankton or humic stain.
- Clay turbidity can be caused by erosion, livestock, certain fish species, wind and soil chemistry.
- The pH is the measure of how acidic or basic the water is and should range between 6.5 and 9.0.
- Total alkalinity is the measure of buffering capacity to pH changes in water, with total alkalinity above 20 ppm necessary for optimum production.
- Water temperature influences fish and plant growth as well as fish behavior and distribution.
- Nutrients are low in clear water, so clear water without plants is relatively unproductive.
- Water clarity of 18-30 inches caused by a phytoplankton bloom is ideal.

For more information about managing largemouth bass and other pond management topics, go to <https://www.noble.org/ponds/>.

AQUATIC PLANT MANAGEMENT

- Aquatic plants are classified into two groups: phytoplankton and macrophytes.
- Phytoplankton are microscopic plants that make up the base of the food chain.
- Macrophytes are visible plants divided into three categories: floating (float on water surface, not rooted), submerged (underwater, may or may not be rooted) and emerged (rooted, majority of plant above water).
- Positives of aquatic plants include: aesthetics, water quality maintenance and improvement, erosion control, waterfowl food and habitat, and fish habitat.
- Negatives of aquatic plants include: undesired aesthetics, access impairment, and bluegill overabundance.
- Aquatic plants typically should not dominate more than 25-30 percent of a pond.

INITIAL STOCKING STRATEGIES

- Stocking recommendations are based on pond surface area.
- Stock 500 bluegill, 1-3 inches long, per acre, preferably in August or Septem-

ber. Can substitute up to 250 redear sunfish per acre for 250 bluegill.

- Stock 100 bass, 1-3 inches long, per acre, during the following spring.
- Purchase fish from a reliable source.

EXISTING FISHERIES MANAGEMENT

- Largemouth bass cannot support unrestricted harvest without harming the fishery.
- Harvestable surplus of largemouth bass in a pond typically varies from 0-30 pounds per surface acre annually.
- Monitoring fisheries can be important to achieve and maintain fisheries management goals.
- Useful survey methods include hook and line, seine, and/or electrofishing.
- Record the weight and length of each fish caught while surveying.
- Fish population parameters are analyzed by calculating relative weights, proportional size structure (proportional stock density), and size frequencies.
- To change largemouth bass size structure in a pond with adequate bluegill and plants, remove a substantial portion of an overabundant bass size class when necessary.
- Stock supplemental fish when largemouth bass or bluegill are absent or lacking.
- Reduce/remove undesirable fish species through aggressive harvest, stocking more adult largemouth bass, draining the pond or using rotenone. 🐟