

Selection of Fish for Stocking Mississippi Farm Ponds

One of the major keys to success in farm pond management is proper selection of fish species to stock. Proper selection requires consideration of the desired outcome; that is, a pond owner must determine what he wants to experience from the fish population and then stock accordingly. Stocking of a farm pond can be likened to planting a vegetable garden. The gardener determines what foods to harvest and eat, and plants seeds that will grow into the desired foods. A pond owner must follow the same strategy.

The most common species combination is largemouth bass and bluegill/redear sunfish (also known as shellcrackers, chinquapins, or hognose bream). This combination has proven reliable and manageable since the early 1940's, and is generally accepted as the standard stocking combination. Many other combinations are possible, however, and selection of "alternative" combinations depends on pond owner goals and willingness to manage.

Bass & Bream Combinations

Stock ponds with fish from reliable fish hatcheries to eliminate the introduction of undesirable fish species, parasites, or diseases.

A list of the licensed commercial fish hatcheries is available from the Mississippi Department of Agriculture and Commerce, the Department of Wildlife, Fisheries and Parks, the Mississippi State University Extension Service, and The Natural Resource Conservation Service.

Size of the pond has some influence on future fishing potential, but there are few limitations if the owner has reasonable expectations. Ponds less than one acre are often best suited for channel catfish alone. A farm pond that is to be stocked with bream and bass should be at least one acre in size, preferably larger. Although small ponds can normally provide unlimited bream fishing, there is a concern for overharvesting the bass in ponds less than one acre.

Standard stocking rates include the following:

- Channel catfish at 50 per acre, stocked in the summer or fall;
- Bluegill and redear sunfish at 500 per acre (mixed), stocked in the fall or winter;
- Fathead minnows at 500-1,000 per acre, stocked with the bream in the fall or winter;
- Largemouth bass at 50 per acre, stocked the following spring.

Stock channel catfish first to ensure enough growth to prevent predation by bass. Until channel catfish reach a length of about 18 inches, they are in direct competition with bream for food. Stocking more than 50 channel catfish per acre may suppress growth of

bream. Bluegill and redear sunfish fingerlings, as well as fathead minnows, stocked in the fall and winter will spawn the next spring. Largemouth bass fingerlings are stocked in the spring to coincide with the bream spawn and fathead minnow spawn. They feed on small bream and fathead minnows, thus preventing an overpopulation.

Largemouth bass are predatory and eat a variety of foods. Their diet includes small fish, frogs, crawfish, and insects. Largemouth bass are well adapted to ponds and reproduce successfully, usually spawning only once a year. They grow rapidly in a pond where food is plentiful, generally reaching sexual maturity and spawning at one year of age. In the spring, when water temperatures reach 60 °F, mature males fan out depressions or "nests" on the pond bottom. Females lay their eggs in the nests. The male fertilizes the eggs, which usually hatch within 4 days.

Bluegill and redear sunfish are also well-adapted to ponds and eat a variety of foods. When small, they eat microscopic plants and animals. As they grow, their diets change to include insects, snails, crawfish, and small fish. If sufficient food is available, these fish grow rapidly, reaching sexual maturity at one year. When water temperatures reach 70 to 75 °F in the spring, redear sunfish begin spawning, followed by bluegill when temperatures reach 78 to 80 °F. Bluegill may spawn as many as five times in one season, while redear sunfish normally spawn only twice. Bream spawn in groups, and their collections of nests are called spawning "beds." Fathead minnows spawn in the late-winter and early spring, providing abundant forage for the bream and for the bass fingerlings that are subsequently stocked. Fatheads provide excellent forage for bass during the first year of growth but little benefit thereafter. In fact, the bass will eliminate the fatheads within 18 months. Stocking fatheads into established bass populations is of no significant benefit to the bass population.

With proper management, a correctly stocked pond generally results in a balanced fish population and insures good fishing for years to come.

After you complete the initial stocking of recommended fish, do not add fish to the pond except on the recommendation of a fisheries biologist. One species, grass carp, is often stocked for weed control. For more detailed information request Extension Publication 1894 and Information Sheet 1556. The practice of adding fish, including catfish, to the pond year after year can lead to overcrowding and stunted fish. **Crappie should not be stocked into farm ponds because they tend to overpopulate. This results in a pond full of small, stunted fish.**

Catfish Ponds

Channel catfish grow well alone, with few disease problems, stocked at 100 to 150 per acre. When stocked alone, channel catfish grow fastest with supplemental feeding. Natural foods include decaying organic matter, plant material, crawfish, small fish, and insects. The relatively low stocking rate (100 to 150 per acre) assures good growth to a harvestable size in a reasonably short period of time. It is not desirable to encourage catfish spawning because of potential crowding and disease problems. To control the

possibility of unwanted spawning, it is acceptable to add a few bass to the ponds to eradicate any fingerlings less than 6 inches.

Recreational catfish ponds are intended to be much less intensively managed than their commercial counterparts in the Mississippi Delta. One of the most common mistakes pond owners make is stocking too many catfish. In general, the natural maximum carrying capacity in most farm ponds is about 500 pounds of fish per acre. This means that no more than 500 pounds of fish can be maintained without aeration and additional feeding. When catfish are stocked and grown to acceptable catchable sizes (1 to 3 pounds), this carrying capacity is exceeded when more than about 150 catfish are present. Attempts to exceed this natural limit in farm ponds without supplemental aeration, feeding, etc., will usually result in stress and ultimate disease in the catfish. In extreme cases, depletion of oxygen can occur, and catastrophic losses may occur.

Hybrid Bream

Stocking hybrid sunfish offers some attractive management possibilities in small ponds, provided certain conditions are met. These conditions are critical to success of ponds stocked with hybrid sunfish, and pond owners will be disappointed unless proper consideration is taken before stocking.

Hybrids must not be stocked into ponds containing other bream species. Always stock hybrids in combination with a predator fish, since, contrary to popular belief, they are not sterile. Most hybrid populations are 85-95 percent males, and this results in lower reproductive potential. They will, however, still tend to overpopulate, and the offspring are not desirable. **Thus, hybrids should be stocked in combination with either bass or catfish.** When stocked with bass, hybrids are unable to produce offspring, since the predacious bass quickly consume all the young produced. This provides conditions for optimum growth of the hybrids. Hybrids are best suited to ponds of 3 acres or less.

The most commonly used hybrids result from crossing male bluegill with female green sunfish. These hybrids are usually 95 percent males and are highly vulnerable to fishing. They readily accept artificial feed and grow faster than bluegills or redear sunfish under similar conditions. Maximum growth can be attained by stocking 750 hybrids and 25 bass per acre, then following a good fertilization program, and feeding supplementally.

Automatic or demand feeders are preferred, since fish are then assured of receiving feed on a regular basis.

It is important to remember that hybrid sunfish management is for production of trophy bream, and bass growth will be less than desirable. Bass are stocked primarily as a management tool to keep hybrid reproduction down and favorably influence growth of hybrids. Additionally, this is a "put and take" fishery, meaning that hybrids are grown, caught, and replaced by other hybrids stocked in subsequent years.

Species To Avoid

Several species should never be stocked into farm ponds except under the advice and guidance of a competent fisheries biologist. These include flathead catfish, crappie, shad, shiners, common carp, bowfin (grinnel), and gar. Additionally, some combinations of acceptable species will not be successful. Some undesirable combinations include catfish and bream, bream alone, bass alone, hybrid bream and other bream species, redear and bass, shiners, and bream.

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