

Managing Hybrid Sunfish in Mississippi Farm Ponds

One of the most frustrating management challenges facing many farm pond owners is dealing with a population of stunted bream too small to be desirable to fishermen. This is common in bass/bream ponds, due to several factors not always under the manager's control. Bream are prolific, and their reproduction often exceeds the harvest and natural mortality, resulting in an excess of fish that compete heavily for a scarce food supply.

One alternative to stocking bluegills and redear sunfish in farm ponds is to use hybrid sunfish (bream). There is substantial interest in stocking hybrid sunfish in Mississippi for recreational fishing purposes. A number of commercial hatcheries, both instate and out of state, are producing and marketing these fish. Much has been written about hybrid sunfish, but not all of it is accurate. Although these fish have great potential for growth and are a desirable stocking option in many ponds, there are certain disadvantages and limitations involved in stocking hybrids in farm ponds. The wise farm pond owner will investigate all stocking options before making the decision about what kind of fish combination to stock.

Hybrids resulting from crossing several sunfish species have been used for the past three decades to improve farm pond fishing. The most desirable hybrids result from crossing the female green sunfish (*Lepomis cyanellus*) with males from one of three other species. These include the bluegill (*L. macrochirus*), the redear, or shellcracker (*L. microlophus*), and the warmouth, or goggleeye (*L. gulosus*). The most commonly used hybrid in the Southeast is the male bluegill (BG) x female green sunfish (GS) cross. This BG x GS hybrid has the most desirable set of characteristics for small ponds and is the hybrid discussed in this publication.

Desirable Characteristics

Hybrid sunfish in general exhibit a trait called hybrid vigor. This means that the hybrids can outperform their parental species in one or more ways. Rapid and superior growth is one way hybrid sunfish exhibit hybrid vigor. Weights exceeding 2 pounds are common, but advertisements claiming consistent growth above this weight range may be misleading. While it is certainly possible for these fish to attain weights of 3 pounds or greater, conditions in even well-managed farm ponds are not conducive to such growth. Largemouth bass, for example, are capable of attaining weights over 20 pounds, but we obviously see few bass this size!

The rapid growth of the hybrids is partially due to the reduced reproductive capacity of these fish. Contrary to popular belief, these fish are not sterile; they are simply mostly male (85 to 95 percent for the BG x GS). This results in a population that has few females, and thus, spawning and reproduction are low. Since hybrids cannot produce as many offspring as do bluegills and other bream species, the crowded situation that often occurs in bluegill ponds is much less likely to happen. There is less competition among

the hybrids for food, since their numbers are lower, and their growth is consequently rapid.

Another reason hybrids can grow rapidly is their trainability to artificial feed. Hybrids are much like catfish in that they readily accept pelleted feeds, and their growth can be dramatically enhanced with a feeding program. Research shows that growth of the hybrids can be nearly doubled by supplemental feeding with a standard catfish pellet.

Yet another desirable trait of hybrids is their aggressive nature. These fish are easily caught by hook and line, and thus, are desirable sport fish. Studies show they are easier to catch than bluegills and other species of fish, and they do not become hook-shy. Hybrids prefer the shallower areas of ponds and, therefore, are more readily available to fishermen than are the fish in deeper waters. This aggressiveness, high catchability, and accessibility to anglers combine with their rapid growth to result in a true "trophy" bream fishing situation when properly managed!

Critical Conditions

Although hybrid sunfish are a desirable option for stocking many farm ponds, many landowners have been disappointed with these fish after stocking. The failure of many ponds stocked with hybrid sunfish is not due to the fish, but rather to oversight of several critical considerations in their use. Hybrids are not suited to all farm pond situations, and stocking of these fish into waters where their desirable characteristics cannot be developed will almost always result in a disappointed pond owner.

The first condition that must be met is that ***hybrid sunfish must be stocked into a new pond or completely renovated pond where no other bream species are present.*** This is perhaps the most important consideration. Although hybrids have been shown to outgrow bluegills when stocked under identical conditions in the same pond, their growth is maximized by stocking them without competition from other sunfish. The reproductive capacity of the other bream species will soon result in a crowded population where none of the bream, not even the hybrids, will have enough food for adequate, much less maximum, growth. Supplemental stocking of hybrids into established bass/bluegill populations is not a good idea, although this is a common mistake made by pond owners.

The second critical condition is that ***hybrid sunfish must be stocked in combination with a predator, e.g., largemouth bass.*** These fish are not sterile, as commonly believed, and they can and will reproduce. The "filial 1" (or F1) generation of hybrids is the desirable cross but, unfortunately, does not breed true. The offspring from the F1 hybrids, called a "filial 2" (F2) generation, are not desirable and exhibit a wide range of characteristics. Consequently, it is important to minimize reproduction, not only for space and food considerations, but also because the offspring are different from the F1 hybrids. Stocking in combination with largemouth bass is desirable, but at a much different ratio than would be stocked with bluegills. A ratio of 15 to 30 hybrids to 1 bass is desired. Thus, stocking rates of 750 to 1,500 hybrids per acre and 25 to 50 bass per acre are recommended. When stocked with largemouth bass, the F2 generation is not produced.

Although the hybrids will spawn, the hungry bass eat most of the offspring produced. If bass are not stocked, the number of undesirable F2 offspring will quickly exceed the number of desirable F1 hybrids. In one 2-year study, the number of F2's in ponds stocked in combination with bass averaged 35 per acre; in ponds stocked without bass, the number of F2's exceeded 2,100 per acre. Bass are a critically important management tool to reduce or eliminate the number of F2 offspring, thereby providing ideal conditions for the F1 hybrids to perform to their maximum potential. It is important to understand, however, since the hybrids do not produce as many offspring as do bluegills, that bass growth will not be good. Bass must be considered as a necessary predator, but hybrid sunfish/bass ponds are not suited for producing large bass.

A third critical condition is that *hybrid sunfish must be stocked into ponds where security from poachers can be maintained*. The aggressiveness and high catchability of these fish make them especially vulnerable to capture by fishermen. Research shows hybrid populations can be decimated by uncontrolled fishing in a short period of time. These fish do not become hook-shy or wary of fishermen, and security of the pond is a must.

Stocking

Hybrid sunfish can be stocked at several rates and in several combinations with bass or with catfish. The best growth of hybrids can be achieved by stocking 750 hybrids and 25 bass per acre. If desired, as many as 1,500 hybrids per acre may be stocked with 50 bass per acre. The higher stocking rate results in somewhat slower growth, but there will also be more hybrids for anglers to enjoy.

The combination of hybrids and channel catfish is an attractive alternative to stocking with bass. The catfish will do an adequate job of preying upon the F2's that are produced by the hybrids, and an enjoyable fishery can be established. In this case, stock catfish at the rate of 100 to 150 per acre and hybrid sunfish at 350 to 500 per acre. Implement a supplemental feeding program, since both fish will readily accept pelleted feed and their growth can be maximized.

Hybrids and catfish can be stocked anytime that fingerlings are available. It is best, however, to stock during the cool months, since fish are stressed less when handled in cool water. When transporting during the summer, most hatcheries use cool hauling water to minimize stress. It is important to "temper" the hauling water by gradually adding warm water to the water in the hauling container, increasing the hauling water temperature to within 4 to 5 degrees of the pond water. This process should take 20 to 30 minutes or longer, depending on the initial difference in the two water temperatures. Rapid temperature changes will stress fish, and they are less likely to survive than when they are properly "tempered" before being placed into the pond waters.

Bass fingerlings must be stocked in the late spring or early summer when they are available from hatcheries. Do not stock bass fingerlings into ponds with large hybrids. Therefore, when stocking bass/hybrid bream ponds, stock hybrids in the fall or winter

and bass in the subsequent spring (just like bass/bluegill ponds). When stocking fingerling hybrids into established hybrid populations, it is important to stock the largest fingerlings available to prevent their loss to predation. **Management** details the need for periodic restocking of fingerling hybrids.

Management

In many ways, management of hybrids is similar to management of most other species. They must be stocked into appropriate conditions, provided ample space, cover, and food, and protected until they reach desirable sizes. Hybrid management is specialized, however, in that protection of these fish is absolutely essential, since they can be easily fished out. Additionally, hybrid populations, unlike bluegill populations, are not self-perpetuating. The F2 generation is not desirable, and we manage the population to prevent that generation from occurring. In this regard, management of hybrid bream ponds then becomes a "put-and-take" approach, where fingerlings are stocked, grown to desirable sizes, and then replaced with additional fingerlings. In this sense, hybrid ponds can be likened more to cattle feed-lot operations than some other, more traditional pond management scenarios.

Periodic restocking is necessary to sustain a fishery for more than a few years. Pond owners should keep records of the number of hybrids removed and plan to restock when 50 to 70 percent of the originally stocked fish have been caught and removed. This is one more reason security from poachers is paramount. At restocking time, larger fingerlings (3 to 4 inches) are preferred, since they are less vulnerable to predation than smaller fish. They will, however, cost more, and pond owners may prefer to compensate by stocking higher rates of smaller (and cheaper) fingerlings. Restock at the same rates as the initial stocking.

Growth of hybrids can be maximized by taking three steps:

1. Stock with largemouth bass;
2. Conduct a good fertilization program (request Extension Information Sheet 229 for details on fertilizing farm ponds), and
3. Feed supplementally.

A feeding program can be established using floating catfish pellets. A handy guide is to feed all the feed the fish will consume in 15 to 20 minutes and adjust the amount as fish grow. If fish do not eat all the feed offered in that time period, you are probably overfeeding and wasting feed and money. A fish feeder is a good investment, either automatic with timer or a demand-type. One problem with hand-feeding is that someone has to be there to do it! Research shows that most people tire of the novelty of feeding fish within the first season, and then the fish may become neglected. Installing a feeder assures that the fish receive feed on a regular basis, regardless of the pond owner's schedule and availability.

Points To Remember

With wise stocking and management, hybrid sunfish offer a tremendous alternative to traditional bass and bluegill management. However, as with any alternative strategy, there are pros and cons and certain requirements that must be met. The most important thing to remember is that hybrid sunfish are not a cure-all for farm pond management problems. These fish are ideally suited to either "trophy" bream management (weights in excess of 2 pounds are not uncommon) or for use in situations where vulnerability to angling is important, such as children's ponds, fee-fishing operations, or other special-use fisheries. Bass will not grow well in hybrid ponds but are an important tool in managing the hybrids.

Always keep in mind the impact unregulated fishing can have on hybrid populations. And remember, these fish can attain their maximum potential only if stocked into appropriate types of ponds and managed to allow them to utilize their desirable characteristics.

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