



Managing for Trophy Largemouth Bass in Ponds and Lakes

Any well managed pond or lake whose fish populations are “in balance” will produce a few bass over 20 inches long or weighing more than five pounds. Such ponds and lakes produce harvestable numbers of good-sized bass, bluegill, and channel catfish on a regular basis providing both good sport and good eating.

Managing for more trophy bass requires increased effort over a longer period than managing for balanced fish populations. If you are determined to manage for trophy bass you must realize that your pond or lake will produce few, if any, large bluegill. If you follow guidelines provided here, there will be no catfish, and few bluegill, for you to harvest on a regular basis. Also, during this management process, the bass you do harvest may be smaller than the size you would prefer to keep.

If you elect to embark on managing to produce trophy bass, you must closely control the fishing activity. Every angler **must** follow the harvest regulations you establish. If they don’t, acceptable numbers of trophy fish will never be produced.

Is Your Pond Suitable for Trophy Bass?

Several considerations come into play when deciding if your pond or lake is suitable for trophy bass management.

Size and Water Depth

Trophy bass management areas should be a minimum of five acres. The smaller the area, the fewer big bass it will produce despite your best efforts.

The area must have adequate water depths of at least eight feet throughout the year, and a substantial portion of the shoreline should have a “shelf” with a water depth of 2-3 feet for bluegill spawning.

Watershed

The area of land that drains into your pond or lake is its watershed. The best areas have between 10 and 15 acres of land of which water can drain for every surface acre in the pond or lake. This is known as the *drainage ratio*. Ratios between 10 to 1 and 15 to 1 are essential if you hope to manage your pond for trophy bass. Lower drainage ratios mean lower summer water levels, poor water quality, and frequent losses of fish of all sizes to parasites and disease. High drainage ratios can increase erosion and water turbidity, and lower fish production.

Water Clarity

Turbid (muddy) ponds are poor choices for trophy bass management. Bass must be able to see what they intend to eat. If your water is too muddy, bass growth will be poor, and you may never produce any bass over 20 inches. Extremely clear ponds lack the fertility needed for good fish growth. Water clarity of two to four feet is ideal.

The best pond watersheds are those in some type of permanent cover. Establishing and maintaining a 100 foot or wider buffer strip of grass and trees around the water's edge will help filter excess nutrients from runoff water. Localized nutrient inputs from feedlots or other sources may be avoided by tilling or constructing a water diversion terrace below the nutrient source to direct its runoff away from the pond. Fencing livestock from the pond's edge and watering them from a tank below the dam is also a helpful protective measure. The Natural Resources Conservation Service (NRCS) office for your area can provide information on these and other practices.

The construction of small silt retention ponds in the watershed will help settle out nutrients before they enter your trophy bass water. If you stock these retention ponds with fathead minnows, they may establish a self-sustaining population and continually restock your trophy bass area whenever the retention pond overflows. Alternatively, you may periodically seine fatheads from the retention pond and stock them in your pond where they will serve as bass forage.

Aquatic Plants

Aquatic plants are a beneficial and necessary part of Missouri ponds and lakes. Without them, most other organisms cannot survive. Plants keep the water oxygenated, provide food, cover and nesting sites, and stabilize the shoreline and pond bottom.

Ideally, 10 to 20 percent of a pond's bottom and surface should have aquatic plants. You will need to regularly manage your pond for the desired coverage of aquatic plants. Too many aquatic plants can allow young bluegill to easily hide and avoid being eaten by bass. This will result in reduced bass growth and create many stunted bluegill, and fewer trophy bass.

Refer to our publication "Nuisance Aquatic Plants in Missouri Ponds and Lakes" for more information on aquatic vegetation.

Fish Attractors

Brush piles, anchored trees, and other types of hard cover provide homes for larval insects. Small fish feed on the insects and larger fish station themselves near the cover to take advantage of the feeding opportunities it provides. A good rule of thumb is to have one large brush pile for every 2 to 3 acres in coves, off points, and along the edges of old creek channels and drop-offs. Fish attractors should be placed no deeper than 10 to 12 feet because dissolved oxygen levels during summer may be too low at deeper depths to support fish life.

Stocking

Recommended Fish Species

A proven fish stocking combination that helps to develop a trophy bass pond or lake is local strain largemouth bass and bluegill, golden shiners, and often fathead minnows initially as a forage fish. Bass of different sizes select prey items of sizes which are best suited for their optimum growth. Big fish normally pursue and eat prey items that make the chase worthwhile. Few one-inch bluegill are eaten by five-pound bass! Bluegill, golden shiners, and fathead minnows provide food of all sizes for all size bass.

Bluegill will spawn several times throughout the summer, producing lots of young fish which can be eaten by young bass. Mid-size bass eat bluegill that are 1-3 inches in length. Bluegill that are 4-6 inches are the primary food source of older and bigger bass. Bluegill normally will not need to be restocked.

Golden shiners that are young are extensively eaten by young bass. Golden shiners also grow large enough (4"-10") to serve as a preferred food of large bass. Golden shiners usually must be restocked at least every three years.

Fathead minnows are often stocked in new or renovated ponds and lakes as the initial forage fish. If this is done before the stocking of other fish, an immediate nutrient base for the bass population is ensured. The initial stocking of fathead minnows will be eaten quickly. Follow-up stockings may provide a small, quick boost in bass growth, but the cost-to-benefit ratio will be very poor unless you have established them in a silt retention pond.

For a list of fish sources, refer to our "Missouri Fish Producers" publication found at mdc.mo.gov, or contact the Missouri Department of Agriculture for a complete Missouri aquaculture directory.

Fish Species Not Recommended

Southern (Florida) strain largemouth bass do not do well in Missouri ponds and lakes. The Missouri Department of Conservation conducted a study on the possible use of Florida strain largemouth bass in the early 1970's. After several years of study, the conclusions reached were that under Missouri's conditions, the survival, growth, and catchability of Florida strain bass was inferior to that of home-grown bass. While Florida strain bass may do better in warmer year-round conditions found further south, they failed miserably when faced with Missouri's seasonal fluctuations in weather and water temperatures.

Gizzard shad are a disaster in Missouri ponds. Small shad compete directly with bluegill and young bass for food, and rapidly grow too large for bass to eat. All sizes of bluegill are eaten by bass, and you will produce more trophy bass if your bluegill population is allowed to feed and grow without competition from gizzard shad.

Crayfish

It is recommended that you patiently allow nature to take its course and wait for local, native crayfish to move in from nearby water bodies. If crayfish are not naturally becoming established in your pond, then there is a good chance that adding them will make little difference. If conditions were favorable, native crayfish from the immediate area will typically reproduce and populate your pond quickly.

Supplemental Feeding

The feeding of bluegill may improve their condition and enhance reproduction which, in turn, provides more food for bass. However, success is guaranteed. No studies on the effects of supplemental feeding of bluegill on bass growth have ever been conducted in Missouri. Such feeding programs are expensive and unproven.

How To Begin?

Existing Ponds without Fish

If your pond does not have any fish, you can follow the suggested stocking times and rates shown in table 1. If possible, you should renovate all your ponds higher in your watershed. They have the potential to contaminate your trophy largemouth bass pond with fish species such as crappie, bullheads, or green sunfish that can compete directly with bass and bluegill for food. These other fish species are often less available as food for your bass than the well-suited bluegill and golden shiners. If other ponds contain only bass, bluegill, and catfish, potential impacts on your trophy largemouth bass pond should be minimal.

Existing Ponds with Fish

Does your pond already have a population of bass, bluegill, and channel catfish? If you're lucky, that's all you'll have. If not so lucky, the pond will have bullheads, crappie, and green sunfish. If you're really unlucky, it may have unacceptable numbers of grass and common carp, or other species not suited for pond life. If your pond

has only bass, bluegill, and catfish, it can be managed by manipulating harvest regimes and periodically stocking golden shiners (and possibly adult bluegill) as outlined in Table 1. If, however, your pond has a number of undesirable fish, you will need to partially drain and renovate it and restock with fish suitable for trophy bass production.

See table 1 for information regarding suggested stocking times and rates for your new trophy bass pond.

Harvest Plan

Bass are the top fish predators in your pond. They control the numbers and size of bluegill and golden shiners that survive to reproduce. We, however, control the size and numbers of bass removed from the pond thereby controlling the numbers and growth of remaining fish. How you regulate your bass harvest largely determines whether your pond will produce a reasonable crop of trophy bass. Good record keeping is essential.

Refer to our *“Good Record Keeping for Ponds” Aquaguide* for more information.

Newly Stocked Ponds

If your pond has been stocked as suggested in the table below, you should initially restrict bass harvest to encourage good numbers of bass that are growing well.

Year 1-2: Do not harvest any bass, and bluegill harvest should be kept to an absolute minimum.

Year 3: You may harvest up to 30 bass per acre per year (15 in the Ozarks) that are smaller than 12”. If your 12”-15” bass appear thin, you should harvest five fish per acre per year from this size range. The condition of the remaining bass will improve because there will be more food to go around for the remaining fish. All bass 15” and larger should be released.

Year 5: You should begin to see bass larger than 15” and should establish a protected slot limit. This means you do not harvest any fish 14”-18”, 15”-20”, etc. The primary focus of your harvest should be on bass which are smaller than the slot’s minimum size until you are catching small bass less often than larger bass. This will reduce the numbers of bass competing for food and increase the growth of bass in the slot.

A reasonable long-term goal might be to keep the numbers of small bass low enough that they make up fewer than 20% of all the bass you catch. Fish over the protected slot may be harvested if you desire. If you notice that bass in the slot are thin or “big-headed”, harvest about one of every three you catch for a year to reduce their numbers and improve their condition. If bass start stockpiling near the upper end of the slot, you may want to consider an even higher slot. Remember to supplement available food by adding golden shiners to the pond from time to time.

Ponds with Existing Fish Population

The best way to start off managing a pond with an existing fish population is to contact your local fisheries management biologist. You will receive tailored recommendations based on information you provide. Be sure to follow the data collection recommendations found in the *“Good Record Keeping for Ponds” Aquaguide*.

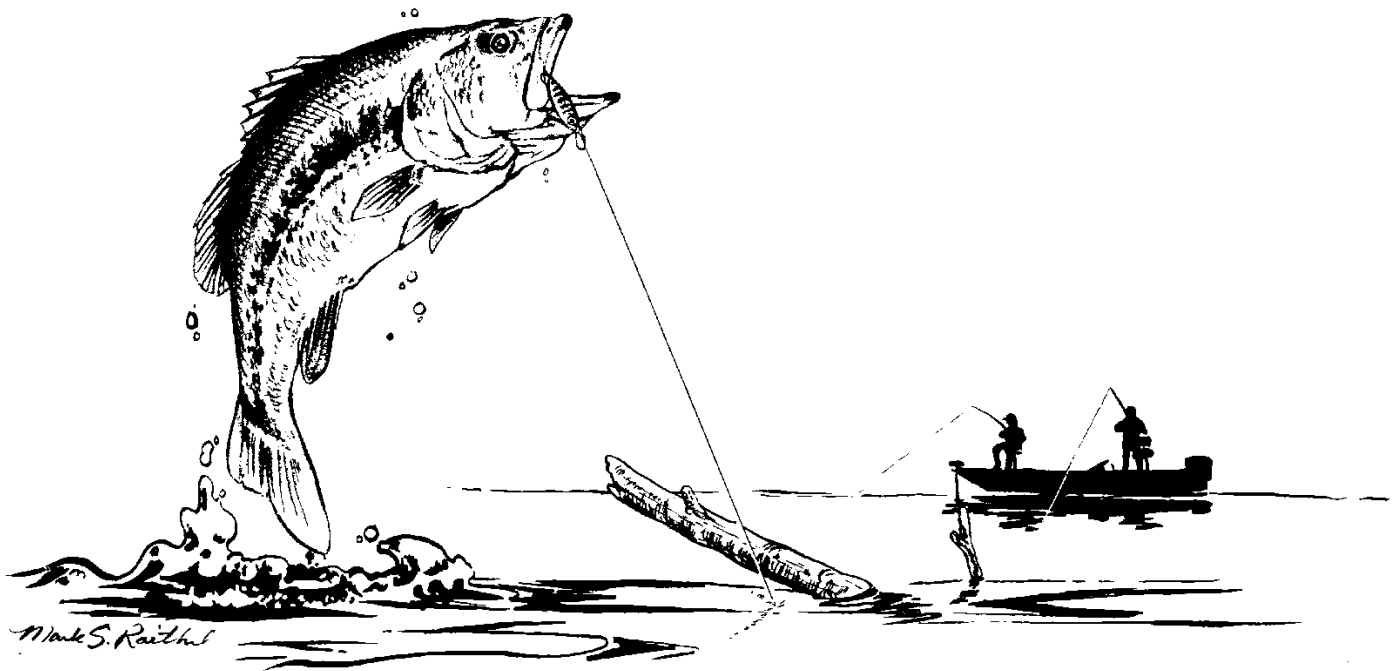
Some common recommendations are:

1. Harvest as many catfish from the pond as possible. This will reduce competition with bluegill for food and increase bass growth.
2. Stock golden shiners (and possibly adult bluegill) to increase the food available for bass.
3. Eliminate all harvest of bluegill.
4. Establish a protected slot limit on bass. The range of the slot sizes will depend on the numbers and sizes of bass actually in the pond.

Managing for trophy bass in your pond with an existing bass population is a long-term process. Five to ten years will probably be necessary to produce substantial numbers of trophy bass in an older pond.

Fish Stocking Recommendations for New Ponds to Establish Trophy Bass

Fish Species	Size (inches)	Number to Stock Per Acre			
		Year			
		1	2	3	4
Largemouth Bass <i>(North and West-Central)</i>	3-5	75			
Largemouth Bass <i>(Ozarks)</i>	3-5	40			
Bluegill	2-4	500	Adult bluegill as needed. <i>(Consult your local fisheries management biologist.)</i>		
Golden Shiner	3-5	200	Restock every 3 years	200	
Fathead Minnow	1-3	500	As desired. <i>(Poor return for the expense unless available in retention ponds.)</i>		



To find the fisheries management biologist for your county, contact your local MDC office or visit mdc.mo.gov.



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