MANAGEMENT AND STOCKING OF NEW FARM PONDS

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Ponds and lakes are designed and constructed to serve many purposes. These functions include flood, erosion and rural fire control as well as water supplies for livestock and irrigation. Ponds are also constructed to provide waterfowl habitat, aquaculture production, recreational swimming, fishing, boating and to increase the aesthetic value of property. Most ponds in Kentucky are manmade and are less than 20 surface acres in size. The primary purpose of a pond or lake should be recognized when considering options for recreational fish population management. Managing fish populations in irrigation and flood control impoundments can be difficult due to fluctuations in water quantity and quality throughout the year. Livestock ponds less than 1/2 acre in surface area may provide little opportunity for managing sport fish populations due to their small size, and possible water quality problems.

Landowners considering the design of a new pond should consult with soil science, excavation, and fisheries professionals. The County Cooperative Extension agent or the local Soil Conservation representative can provide free expert assistance. Watershed impoundments should be designed specifically for the local soil types and vegetative nature of the drainage area. Generally, 5-40 acres of watershed are required for each surface acre of pond. Ponds should have a minimum depth of no less than 2 feet, a maximum depth of 10-12 feet, and an average depth between 6-8 feet to promote sport fish populations. Shallow ponds tend to promote rooted aquatic weed growth which may necessitate costly treatment. Excessive aquatic plant growth may interfere with fishing and can cause stunted bluegill populations. Deep ponds may contain oxygen deficient bottom waters. If mixed with the pond's oxygenated water during periods of "turnover," or "pond inversions," a fish kill may result. Deep ponds are difficult to seine if they become overcrowded with bluegill.

Ponds less than 3 surface acres should be free of permanent obstructions. This will help discourage stunted bluegill populations, and permit seining if necessary. Dams should be built with 2:1 - 3:1 slopes. Ponds should be equipped with an appropriate sized standpipe which will permit rapid draining. Anti-seep collars will prevent water movement along the outside of the drainpipe and weakening the dam.

If a pond is constructed in acid soils it should be limed before filling. The pond lime requirement would be similar to the amount of lime used to raise the soil pH to

alfalfa. Fulfilling the soil's lime requirement is especially important before beginning a pond fertilization program.

Largemouth bass and bluegill are the two fish species used to create self sustaining populations in ponds 1 surface acre or greater. Largemouth bass are the only predator species which can effectively control bluegill populations (which may spawn up to eight times per year), and survive in a small pond environment. Supplemental populations of channel, or blue catfish and red ear sunfish can also be stocked in ponds. Other fish species including crappie, bullheads, carp and golden shiners should not be stocked into ponds. Catfish reproduction should not be encouraged by adding spawning structures in small ponds. Catfish removed from ponds should be replaced periodically by restocking. Hybrid sunfish may backcross with the parent species and produce undesirable populations if stocked in the same pond. Live bait minnows should not be discarded in ponds.

Ponds should be filled with water by early fall to allow stocking with fingerling bluegill. In unfertilized ponds which are 1 surface acre or larger, 400 bluegill fingerlings should be stocked per acre in the early fall. Red ear sunfish (shell crackers) can be substituted for 40% of the bluegill if desired. Largemouth bass should be stocked the following spring at 120 fingerlings per acre. Fifty catfish fingerlings, similar in size to the largemouth bass fingerlings, can be stocked per acre during spring. An alternative approach is to stock adult fish in the spring at the rate of 15, 8-14 inch largemouth bass, 50, 3-5 inch bluegill, and 20, 3-5 inch red ear sunfish per surface acre.

In fertilized ponds, 500 bluegill fingerlings should be stocked per acre in the early fall. A pond should be limed during the winter if needed, and the fertilization program started in the spring when water temperatures reach 60 degrees. In spring 150 largemouth bass should be stocked with the option of stocking 75 similar sized catfish fingerlings per acre.

Generally, largemouth bass in small ponds should be considered a management tool to create desirable bluegill populations. All bluegill caught by angling should be removed from the pond. Fewer than 8 or 10 harvestable largemouth bass should be removed per surface acre per year from an unfertilized pond, while 15-20 bass can be removed from a fertilized pond. Ponds should not be fished for bluegill for two years following the stocking of fingerlings. Largemouth bass should not be fished for three years following the stocking of fingerlings. Stocking adult fish may be costly, however it will provide fishing sooner.

If large bluegill are desired, slightly overstock the largemouth bass and release all the bass which are caught. A stunted largemouth bass population may result, however the remaining bluegill should be large. If large largemouth bass are desired, overstocking bluegill fingerlings may create a stunted bluegill population, which will limit largemouth bass reproduction, and provide abundant forage for bass. Largemouth bass in stunted bluegill ponds are often few in number, large in size, and difficult to catch because of the abundant forage.

Ponds less than 1 acre in surface area are generally too small to be managed for self sustaining bass and bluegill populations. Catfish fingerlings 2-4 inches in length can be stocked at 100 per acre in early summer with 1000 fathead minnows or 300, 1-2 inch hybrid sunfish, as forage. It may be necessary to restock fathead

minnows, or hybrid sunfish every 2 years. Contact the Kentucky Department of Fish and Wildlife, County Agricultural Extension Service office, or a KSU Aquaculture Specialist for a list of local fish suppliers
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