MISSISSIPPI STATE UNIVERSITY EXTENSION

Winter Drawdown:

A Useful Management Tool for Mississippi Farm Ponds

One of the most useful and inexpensive pond management practices is called "winter drawdown." This practice is the reduction of water levels in a pond to some predetermined level, and generally it is designed to expose 35 to 50 percent of the pond bottom area.

Winter drawdowns can be useful in controlling aquatic weeds, and they can be invaluable in manipulating fish populations and facilitating pond repairs, redesign, and liming. The primary disadvantage is that the pond must have a drain pipe that will allow the water levels to be lowered and kept down throughout the winter. Ponds without drain pipes can be retrofitted. Detailed information on how this is accomplished is available through your county Natural Resources Conservation Service office.

Aquatic weed problems are common in farm ponds and are generally difficult to control or eradicate. Winter drawdown exposes weeds to air-drying and freezing temperatures. This can be an effective weed-control technique for many species, especially if done in successive years, and it has other advantages related to fish population management.

For effective weed control, drop the water level of the pond to expose aquatic weeds in the more shallow portions of the pond. Usually, water levels are reduced enough to expose 35 to 50 percent of the pond bottom, but this percentage may vary greatly, depending on topography and design of the pond. Maximum drawdown should be accomplished by mid- to late November, and the water level should remain low through February. Spring rains will fill the pond.

After reflooding, if weeds persist and begin to sprout, apply an appropriate herbicide. The combination of a winter drawdown and effective early-spring herbicide application usually does a good job of eliminating or greatly reducing aquatic weed infestations.

Winter drawdown also is a good fish population management technique in bass/bluegill ponds. By reducing the water level and pond area, forage fish, such as bluegills, are driven out of shallow-water refuges and concentrated in open water, making them more vulnerable to bass predation. This is a good technique to use in ponds that are classed as "crowded bluegill" but still have viable bass populations in them. The increased predation by bass reduces bluegill numbers and provides additional food for the bass. Routine annual drawdowns can help the pond manager maintain a balanced bass/bluegill fishery.

Winter drawdown also provides a good opportunity to do repairs on piers, docks, and boat ramps, as well as minor dam repairs and shoreline renovation. Fish attractors, such as brush tops and gravel beds, can be easily put in place while the water is down, and this is a good time to deepen edges to the recommended minimum depth of 24 inches. Dirt from the shoreline-deepening operation can be used to construct earthen piers at various locations around the pond. These piers serve to increase the shoreline area of the pond and also provide increased access for fishers.

While the pond is down, take soil samples and analyze for the pond lime requirement. Use the following procedures in sampling pond soils:

1. If the pond is larger than 3 acres, partition the pond into 3-acre blocks and sample each block separately. (If the pond is smaller than 3 acres, collect three samples per acre and treat each acre as a block.)
2. Collect about a pint of soil from each of 10 locations per block.
3. Thoroughly mix the 10 samples together in a bucket.
4. Take one sample from the mixture and allow it to air dry; then place this sample in a soil sample box and submit it to the Soil Testing Laboratory at Mississippi State University. Be sure to indicate in the "crop to be grown" section on the submission form that this sample is for a farm pond (Code 50).
5. Repeat this procedure for each 3-acre block in the pond. The sample will be analyzed, and you will receive a report indicating if your pond needs lime and how much to apply.

Generally, 1 to 2 tons of lime per acre are required. The lime should be in the form of agricultural limestone, not quicklime, slaked lime, or hydrated lime. Although these alternative liming materials can be used, they pose a potential threat to fish by increasing pH too high too quickly.

Apply lime in the fall. A drawdown provides an opportunity to spread the lime on the exposed soil, which is ideal. Keep in mind that liming is intended to increase the pH of the soil, and application of the lime directly to the soil is the most efficient method of liming a pond. Although it is best to apply lime to the soil, this often is not practical, and application can be made directly to the water.

In most farm ponds, lowering the water level 2 to 3 feet exposes the proper percentage of the pond bottom; however, this is only a rule of thumb. You must consider the topography of the pond, amount of shallow water, and pond shape and design. As recommended for weed control, reach the maximum depth of drawdown by late November, and keep the water down through February for the technique to be effective. In south Mississippi, the stand pipe can be raised a little earlier, perhaps mid-February, to allow the pond to refill and not hamper bass spawning activities that begin earlier in that part of the state.

Winter drawdown can be a useful tool for the farm pond manager if executed properly. It poses no threat to the fish population and costs nothing if the pond is equipped with a water-control structure. Drawdowns should only be done in the winter, however—never during summer! The extreme temperatures during Mississippi summers, coupled with the increased metabolism of fish and reduced oxygen levels in warm water, would prove disastrous in most farm pond situations.

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