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## Maintaining Farm Ponds

Ponds are a critical part of many farms in Kentucky and proper maintenance can ensure they will perform well for many years after construction.

Constructing ponds in the appropriate sites is the first step to ensuring a useful pond. A good supply of clean drinking water for livestock must be located within an adequate forage area to produce healthy animals. The volume of water required for livestock depends on the size of the animal, size of the herd and amount of time the water supply will be in use.

Most livestock ponds should be entirely fenced with gravity feed water supplied to a watering tank keeping animals out of the pond. This prevents soil erosion and protects stabilizing vegetation on the dam, spillway and pond banks. Keeping the animals out of ponds reduces the amount of sediment going into the pond from an eroding bank. It also improves water quality by reducing turbidity (muddiness) caused by eroded clay soils.

Nutrients provided from manure and fertilizer in the watershed will fertilize pond vegetation. However, aquatic plants will receive these nutrients directly where the livestock are allowed to wade into ponds. A poorly managed pond will fill quickly with debris and sediment due to increased loading of organic matter from manure and decaying aquatic plants, combined with erosion. These can reduce the life of a pond and pollute the water, possibly contributing to poor animal health.

Many farm ponds in Kentucky serve the dual purpose of a place to relax and catch a few fish or swim. They also may be used for irrigation or rural fire control. Managing ponds for multiple purposes can be difficult. Pond volume, watershed size and number of animals kept in the watershed, will affect nutrient runoff into the pond. When properly applied to the watershed, little of the nitrogen and phosphorus contained in inorganic fertilizers should be lost in runoff into the pond.

Fish populations may benefit from the minimal nutrient runoff of well managed pastures. However, excessive nutrients from livestock waste will create water quality problems. Aquatic plants and algae will thrive on excessive nutrients and may become difficult to control.

The weedy appearance can be unattractive as well as cause largemouth bass to have a more difficult time preying on bluegill. This may result in an overpopulation of bluegill. Chemical controls can be time consuming and costly and, in some instances, may not be legal, safe or practical in livestock watering ponds.

Ponds used for fishing must be stocked properly, limed, and harvested correctly. Before using any fertilizers or chemicals, be sure to check that they are safe for livestock if the pond is serving this dual purpose.

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. 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 that used for planting alfalfa. Fulfilling the soil's lime requirements is especially important before beginning a pond fertilization program.

Weed control is an essential part of pond management. Preventive measures include proper design. Banks should be sloped steeply so that very little water is less than two to three feet deep. To help prevent serious weed infestations you can do the following things:

- Most waters in Kentucky are sufficiently rich in plankton and other food organisms to support large fish without the need for supplemental fertilization.
- Maintain a good sod and grass cover around your pond. This will help prevent runoff and erosion. Do not fertilize the turf directly around the pond.
- If the water is used for livestock, fence the pond and water the animals from a stock tank below the dam and outside the fence. Animals will increase turbidity and fertility and erode the banks. Do not allow livestock access to a pond unless a gravity flow tank cannot be installed. In this case, fence the pond to allow limited access to a few locations around the shoreline. Consider providing a source of shade in pastures so animals can avoid extreme heat.
- Check septic tanks for possible leaching into the pond. Locate new septic drainage fields so that the nutrient-rich effluent will not reach your pond.
- Do not permit runoff from chicken coops, feedlots and other areas to enter your pond. If this kind of runoff is occurring upstream from your pond, you should check with your county Board of Health to see if anything can be done about it.

If you have a weed problem, mechanical controls can be used. Mechanical controls include hand removal, dredging of shallow pond areas, or winter draw down so that shoreline vegetation may be froze and killed. Using rakes with ropes attached can work for removing some floating plants. But these methods can be impractical or uneconomical.

A biological control that can be used is triploid grass carp to control soft-stemmed vascular plants and branched algae. These fish are plant eaters and can help control pond vegetation. They need to be stocked at a rate of 5 to 20 fish or more per surface acre of water depending on the severity of the plant problem.

Chemical control methods also can be used. Weed identification is essential in determining which herbicide to use. When used properly, aquatic herbicides are effective in controlling vegetation without harming fish. There may be restrictions on water usage for a period of time after treating with a particular herbicide. Always check the herbicide label for possible restrictions.

For more information on pond construction and maintenance, contact the Carter County Cooperative Extension Service. Educational programs of the Cooperative Extension Service serve all people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, gender identity, gender expressions, pregnancy, marital status, genetic information, age, veteran status, or physical or mental disability.

#### **Upcoming Events:**

- **Ag Advancement Council** – May 13<sup>th</sup> @ 6:00 PM
- **Extension District Board Meeting** – May 14<sup>th</sup> @ 10:00 AM
- **Hike & Learn** – Friday, May 17<sup>th</sup> @ 10:15 AM – Carter Caves State Resort Park