



## **Making Ponds from Borrow Pits**

Many people in south Louisiana are rebuilding their homes as a result of Hurricanes Katrina and Rita. In many cases, property owners are borrowing dirt from part of their property to raise the level of the building site. While homes along the coast in FEMA's designated V-zones cannot be supported on fill material, there are many A-zone properties further inland where elevation on fill is allowed. This earth-moving for home construction is resulting in many properties being left with unsafe and unsightly borrow pits.

There are several things you can do to turn a useless borrow pit into an attractive fishing pond once you've made sure that the ground will hold water. Soil with 20 percent or higher clay content holds water well. Most soils in South Louisiana have that much clay, but watch out for sand lenses during the digging. Sandy areas should be dug out and filled over with clay. Tree roots can also be a problem. Dig them out and pack extra clay in those areas.

### **Dig a fish pond instead of just a hole**

Pond size, depth and side slope are important. Many people try to save real estate by excavating the maximum amount of soil from the smallest possible area. The resulting ponds are small, very deep and have very steep sides – and they are both unsafe and difficult to maintain.

**Safe side slopes:** If livestock or a child or pet falls into the pond, they must be able to climb out easily. This means that vertical pond walls are not acceptable – not even in a few places. If you do not have room on your lot to slope the pond sides at a 3-to-1 slope (at the steepest), then you should not dig a pond or pit.

**Size:** When it comes to fish ponds, bigger is better. A one-acre pond will need far less intensive management than a one-tenth acre pond. Larger ponds can approach the level of self-sustaining ecosystem – like a small lake. Very small ponds can provide an attractive landscape feature and a bit of fishing, but they require careful management – they're more like an aquarium than a lake.

**Depth:** The ideal depth for fish ponds is about five feet, or a little more. In most cases, areas over seven feet deep are little used by fish. Very deep areas can become totally devoid of dissolved oxygen. If a storm causes the oxygen-deficient water to mix with the surface layer, the rapid destratification can cause a fish kill. Too much shallow water can also be a problem. Large areas of water less than two feet deep are almost impossible to keep from becoming clogged with aquatic weeds.

## **Add water control features**

In some ponds runoff control is needed. If rainwater moves across your property where the pond is located, you have two options: add levees around the pond or add water controls within the pond. If levees are added to keep the runoff out of the pond (or if the pond is situated in a dry site), then another source of fill water is needed. Without any method to add water, many ponds will get very low during dry weather, with reduced capacity to keep fish alive. Most people choose to install a well or run a line from an existing well. Remember that well water has no dissolved oxygen content: adding lots of well water without aeration is a good way to kill your fish! A simple series of splash screens will solve this problem.

In-pond water controls include drainpipes and spillways. While watershed ponds in hilly areas need to have both, many ponds on flat terrain will need neither. Drainpipes are not an option for borrow ponds that are deeper than adjoining ditches. Ponds that catch runoff will need a spillway at the lower end of the property to divert overflow without causing erosion.

## **Add water quality features**

If you have or need an area of the pond to be deeper than seven feet, aerating the deeper areas will solve most of the basic problems. Pumped-air diffusion or turbulent mixing, or both, can be used. Aeration will prevent stratification, improve nutrient cycling and prevent problems from periodic low dissolved oxygen levels. Fountain-type aerators don't generate the most efficient mixing, but in small ponds they provide an attractive feature and adequate aeration.

For more information, go to the LSU aquaculture website:

[http://www.lsuagcenter.com/en/crops\\_livestock/aquaculture/](http://www.lsuagcenter.com/en/crops_livestock/aquaculture/)

or the LSU Sea Grant aquaculture site:

<http://www.seagrantsfish.lsu.edu/aquaculture/index.html>

or request publication #2573: *Management of Recreational and Farm Ponds in Louisiana* from your parish AgCenter office.

For more information about flood risk and flood protection:

[www.LouisianaFloods.org](http://www.LouisianaFloods.org)