

Retention Pond as Ecosystem

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The easiest way to keep a retention pond healthy, says Howard, is to aerate it using an onshore compressor. “We’re talking about bottom aeration—pushing air into the bottom of the pond. This keeps it from having different levels of oxygen in it. It turns the whole pond over so it stays a lot more balanced.”

The compressor pushes air into plastic tubing, then into diffusers spread around to different areas of the pond. The bigger the pond, the more diffusers you’ll need. Howard says it’s really no different than the bubbler systems you see in home fish aquariums, just on a larger scale. There are pond aeration pumps designed just for this purpose that are concealed under fake rocks.

“All the good bacteria in the pond helps break down the decomposing weeds, algae and leaves that are there,” says Howard. “It speeds those processes up, so the retention pond stays a lot younger, instead of just filling right in.”

Most retention ponds are dug on new developments to help fulfill SWPPPs (Stormwater Pollution Prevention Plans). However, Howard says that about 30 percent of retention ponds are also there for decorative reasons. “People want to see the birds, the fish—all the wildlife that comes along with having a big pond.”

Maintaining the health of a scenic retention pond includes keeping the fish, birds and other wildlife around by keeping the pond biologically in balance. You’re actually maintaining a little ecosystem.

Howard likes this sort of retention pond to be at least six- to eight-feet deep. However, he says that a lot of times, they end up being under the six-foot mark, even as shallow as four feet.

“It’s tough to balance a really shallow pond, unless there’s always good water coming in and out of it,” says Howard. “But in a retention pond, water only comes in when there’s a storm event.”

Here’s the problem: the shallower the pond, the more sunlight penetrates to the bottom. As we stated, all that settled siltation—full of phosphorus and nitrogen from fertilizer runoff—makes for a very rich growth medium. When the sunlight hits that, it encourages algae and weeds to grow like crazy.

The more vegetation in a pond, the less oxygen there is for the fish. And when the fish die off, the wildlife that eats that fish doesn’t stick around very long.

Keeping ponds balanced is hard enough, even when they’re nice and deep. But shallow ponds are common, says Howard, the result of shallow budgets. “Because it costs more money to make ponds deeper, often the developers will typically only excavate as deep as the minimum volume of water required by the total area of the development, and no more,” claims Howard.

You may be thinking, why go to all this effort if there's no fish in the pond? As we've explained, aeration is good for ponds even when they don't have fish in them.

Howard says that even ponds that people insist don't have fish, tend to have fish. Neighborhood kids catch them, bring them home to show Mom and Dad, and end up dumping them in the local pond. Birds transport minnow eggs from lakes to ponds. Most ponds end up having some sort of fish life.