

Trends in Subsurface Aeration

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From his years of experience, Jay Bearfield, owner of Liquid Landscape Designs in Carlisle, Mass., said he understands the importance of setting up a subsurface aeration system that sufficiently oxygenates a water body. Bearfield recently rebuilt a natural pond that lacked sufficient oxygen -- a correction that Products such as diffusers create subsurface aeration. (Courtesy of EasyPro Pond Products) saved the homeowners thousands of dollars in repairs and replacement parts.

"Before we repaired the pond, they had three 1-hp pumps that were completely placed in the wrong spots driving the waterfalls," Bearfield said. "They were placed directly beneath the waterfall, so they were getting no pull through, and that caused stagnation points. In two years, [the clients] easily went through \$1,200 worth of pumps from burnout, and their electricity was running about \$350 a month."

Bearfield and his crew installed an energy-efficient external pump and positioned his intake sources, which he covered with protective screens, evenly throughout the pond to draw the stagnant oxygen-deprived water up and over the falls. The result: A 60 percent cheaper electric bill and a well-aerated pond that came back to life, he said.

"The pond was dying, so by adding oxygen, we helped nature get back on track," Bearfield said. "With those kinds of accounts, we end up doing a pretty comprehensive biological treatment with additives and enzymes and all that to go along with it, but that deep-water aeration is key."

Whether using bubblers, diffusers or intake systems that pump the water through a waterfall or stream, subsurface aeration involves breathing, life-giving oxygen into the water. The process stimulates aerobic digestion, which breaks down organic waste, and keeps the water temperature even while dispersing oxygen evenly throughout the water column, said Jason Blake, president of Airmax Eco Systems in Marine City, Mich.

These subsurface aeration systems, which pond builders often incorporate in high-end koi ponds and lakes to increase the water's dissolved oxygen content in the water, have found new popularity in water garden construction, Blake said. He reported increased sales of supplemental aeration systems for use in backyard ponds and water gardens, especially in features with heavy fish loads.

In colder climates, these systems can retain a hole in the ice -- a tip, Blake said, that might save clients money. "We're seeing the biggest increase in aeration sales in the fall with people replacing their pond heater with an aerator," he said. "It's where 80 percent of our aeration sales are coming from."

Blake said pond heaters range from 100 to 1,500 watts to run, which can add up to \$60 or \$70 a month in cold climates. A small aerator can keep a hole in the ice, put oxygen in the water and use 20 watts of power, he said.

"People today are energy conscious and they want something they can use all year long," Blake said. "If they're going to invest in an aerator, it might cost twice as much or three times as much as a cheap pond heater, but it's going to save them that much in electricity the first year, plus they're going to be able to utilize it year-round."