

TECHNOLOGY KEEPS CATFISH JUMPING



FEATURED PRODUCT - POND BUOY

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- Andy Jones, Owner, Bear Creek Fisheries

OVERVIEW

Andy Jones compares the catfish industry to the jagged graph of a heartbeat displayed on an EKG machine. The peaks and valleys of that pulsating line are a vivid metaphor for the fluctuating fortunes of a seasonal business dependent on live animals and a dynamic market.

Jones is in a good position to make the connection. As a second-generation catfish farmer, he's seen firsthand the highs that come with booming demand and the lows of a devastating fish kill. His father, Austin, started Bear Creek Fisheries in Moorhead, Mississippi, USA, in 1982, and after receiving his master's in agribusiness, Jones officially joined the family business he'd worked in since childhood.

That was more than a decade ago. Since then, Jones has continually looked for ways to protect the physical health of his stock and the economic health of his farm. And as one who's never shied away from technology, he's found that while manpower is important, advancements in automated pond management have put him ahead of the game.



COMPANY PROFILE - BEAR CREEK FISHERIES

Founded in 1982, Bear Creek Fisheries operates about 100 catfish ponds in Moorhead, MS, USA, to produce 50 to 75 million fingerlings per season.

CHALLENGE

Bear Creek Fisheries specializes in fingerling production. Every June, Jones fills 100 ponds with young fish hatched by his brood stock. They're fed through the summer and fall until they're six to eight inches long and then sold to as many as 200 food fish producers to raise until they're ready to harvest in about a year's time.

Jones says they might raise 50 to 75 million fingerlings a season. At that volume some mortality is inevitable, but Jones shoots for at least a 75 percent survival rate. In a rough year, it's been as low as 60 percent, and in his best year, 84 percent made it.

That's impressive when you consider the many threats young catfish face - namely oxygen depletion, disease and predation from birds.

"Heron, egrets, pelicans, cormorants - the birds eat you alive," says Jones. "But the biggest challenges are loss of electricity, which can cut out the aerators, and disease."



During the day, the fish thrive on oxygen produced through photosynthesis. But when the sun goes down and the temperature drops, oxygen levels fall, and it's up to electric-powered aerators to agitate the water and keep them stable. An undetected electrical outage or equipment failure can be catastrophic.

Oxygen monitoring is also critical to disease prevention. While Jones wants to feed his fingerlings as much as possible, he doesn't want to stress them out and make them sick.

"These fish are like babies - susceptible to everything until they build up the antibodies they need to survive," he says. "We're feeding them as much as we can, but you don't want them getting that Thanksgiving undo-your-pants feeling. If we can have the aerator kick on to keep the oxygen at 6.0 or 5.0, that keeps them feeling good, so they'll want to eat the next day."

Catfish farmers typically rely on staff to continually monitor their ponds and make sure that aerators are running when they're needed and turned off when they're not. The time and cost to keep eyes on an operation the size of Bear Creek is huge, and one undetected outage can mean the loss of \$100,000 or more in a matter of a hours.

Long hours and high risk are part of the job, but like any business owner trying to improve and expand, Jones was open to new ways of doing things.

SOLUTION

That's why he attended a seminar given by In-Situ Regional Sales Manager Chris Stevens, who also happens to be Jones's neighbor.

"Chris showed us this buoy system," he says. "I thought it was pretty neat, but it was new to us, and even though I love technology, we weren't sure we wanted to trust our entire business to a computer."

As an interim step, Jones proposed to his dad that they try the system on the ponds where they keep their brooders during the off-season. Stevens installed the buoys in six of those ponds and set it up so that Jones could view system activity on his phone.

Jones could tell right away that this was the way to go. "I could look at my phone and see that the system automatically cut the aerators off at 2.7, and meanwhile, the guys working the other ponds still hadn't shut those aerators off, so we knew we were losing money," he says.

As soon as it was clear that the buoy system would deliver significant savings, Jones decided to put it into the whole operation. "That was in 2011, and we were the first fingerling producer to install it," he says.

It's not a direct one-to-one ratio, but Jones now has about 90 buoys he moves around and runs constantly to monitor oxygen levels and operation of about 400 aerators.

The system collects DO and temperature data, and a battery-powered radio transceiver transmits the information to a host PC, which can relay real-time data to any smartphone. A 10-watt solar panel mounted on the buoy recharges the battery, and a brush scrubs the DO sensor with cleanser from a dispenser to help keep readings accurate.

The system tells the aerators when to turn on and off and manages amperage based on the amount of oxygen in the water. It also sends alerts if there's a malfunction or power outage. As an early adopter, Jones has suggested a few tweaks to the system over the years, but he's never thought twice about his choice to put it in.

RESULTS

Before he deployed the buoys, Jones had four employees driving pickup trucks around his ponds all night every night to check on aerators. Now he has two guys who watch their computers and respond when an alert tells them there's a problem.

"Before, we just weren't protected," he says. "A guy might ride to the first pond at eight and might not get back to it until two hours later. If an aerator went out 10 minutes after he left, those fish would be dead."

The system has paid for itself in savings on that score alone, and Jones appreciates the peace of mind that comes with knowing that he's managing his stock as efficiently and effectively as possible.

"It's a tough business working with animals," says Jones. "They don't know about holidays and days off. It's very time consuming," he adds. "But I love it."

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