

# Tool simplifies pond building

By LYNN BETTS

**O**BTAINING a quick, accurate estimate of the cost of building a farm pond could be a whole lot easier in the future, thanks to a new online computer program.

In less than 15 minutes, PondBuilder can place a proposed pond in the landscape, generate an aerial photo with the pond's permanent and temporary pool areas clearly drawn, estimate the cubic yards of dirt to be moved, figure size and length of pipe needed, and create an accurate cost estimate.

That rapid turnaround time compares to several months using current methods in most parts of the country, where it takes time for conservationists in USDA field offices to schedule and make a field site visit for preliminary surveys, and then more time back in the office to make the calculations for sizes and costs.

## New online programs

PondBuilder is one of several new online programs now possible because of new LiDAR (light detection and ranging) elevation data being made available by government agencies in some states. LiDAR data, gathered by aircraft with mounted laser equipment, are accurate within 1 foot in most terrain.

## Key Points

- New computer software offers significant time-savings.
- Programs can only be used with LiDAR information.
- The Internet-based programs are accurate within 1 foot.

Billions of LiDAR-generated points in effect reproduce 3-D location and elevation sketches of the terrain, including waterways, ditches, hills, roadways and tree cover. Government agencies are beginning to use it to plan road building projects, update floodplain maps and other projects to save time from traditional land surveying.



TOM BUMAN

The PondBuilder program was developed by Agren Inc., of Carroll, Iowa, as part of a conservation innovation grant from the Natural Resources Conservation Service. Conservationists tested it in four counties last year, and it is now being offered to 40 more counties there at a reduced rate as part of another NRCS grant.

"Before we awarded the grant, I visited field offices and talked to people who had used some of the tools on a trial basis," says NRCS state conservationist for Iowa, Rich Sims.

"I was impressed by their enthusiasm for the time-savings the PondBuilder of-



**COST ESTIMATE:** Get a detailed, accurate cost estimate to build ponds like this one in less than 15 minutes in NRCS offices with new software and LiDAR elevation data.

ferred," he adds. "Even better, though, was that extensive ground truthing by field offices showed that cost estimates made in the office from this program were very accurate. It's important to us to be able to rely on original cost estimates, so we don't have to go through contract modifications that take time and create problems for us."

## Expanding nationwide

In Iowa, the Department of Natural Resources has about 90% of the needed LiDAR information collected now, with plans to have it all available by March.

LiDAR information is being gathered across the country, says Tom Buman, Agren president. "We've been talking with people in Ohio, Michigan and Nebraska, and there's some interest in these programs in Missouri and Minnesota. I believe Pennsylvania and Louisiana are using LiDAR data, too. It's expanding nationwide."

In addition to the PondBuilder program, Agren offers subscriptions in Iowa

for online access to a new BasinBuilder program for sediment and water control basins, an RCNCalculator for rainfall and runoff calculations, and a RUSLEII Calculator to predict expected erosion rates. Agren is also working on a wetlands tool and a waterway tool similar to PondBuilder.

The tools for these programs are Internet-based, Buman says, because upfront costs for software and storage would be too high for individuals. "This technology is easy to use, fast and accurate, and that's what we all want."

Because of logistics, the huge amounts of data and current lack of complete LiDAR coverage, don't expect to be able to get your pond estimate or benefit from the use of the other programs in the next 15 minutes. But the technology has the potential to be used across the country, and it one day could be common. Agren periodically hosts daytime and evening Webinars to explain how the software works.

*Betts writes from Iowa.*

## Crossword Puzzle

### Across

- 1 Manufacturer of the world's largest free-span grain bin.
- 3 The average value of Iowa farmland went \_\_\_\_ in 2009.
- 6 Iowa's 2009 Outstanding Soil Conservation District Commissioner.
- 7 The 2009 average corn yield in Iowa may exceed the 2008 record by \_\_\_\_ bu/ac.
- 8 What landowners want (2 words).
- 9 Always a consideration in selecting a corn hybrid.
- 11 This will dictate Iowa's winter weather (2 words).
- 12 Focus of ISU Extension's new management Web site.
- 13 Recipient of ISU's 2009 Carver Award.
- 14 Corn harvested this past season had a \_\_\_\_\_ moisture level.
- 15 A new book on installing wastewater treatment systems is available from ISU's \_\_\_\_\_ (acronym).
- 17 Iowa received a lot of this in 2009.
- 19 The usual description of a " \_\_\_\_\_ " hinders soil conservation efforts.

### Down

- 2 Iowans are being asked to pay higher \_\_\_\_\_ taxes.
- 3 Headquarters of the Iowa Food Cooperative (2 words).
- 4 The father of organized cornhusking contests.
- 5 Farmers and landowners need to work together to achieve this goal.
- 9 These contests were a favorite spectator sport in the 1930s.
- 10 Some soybean varieties have good resistance to this pest.
- 16 The first thing to consider in selecting a corn hybrid.
- 18 This Iowa farm association is no longer requiring membership dues (acronym).

