

## Natural Resources

# Online program saves you time in pond design

By LYNN BETTS

**G**ETTING a quick, accurate estimate of the cost of building a farm pond on your land could be a whole lot easier in the future, thanks to a new online computer program.

Called PondBuilder, in less than 15 minutes the one-of-a-kind online program 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 earthmoving and size and length of pipe needed, and generate 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. Then it takes more time back in the office to make the calculations for sizes and costs.

## LIDAR data

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, is accurate within 1 foot in most terrain. Billions of LIDAR-generated points in effect reproduce 3-D location and elevation sketches of the terrain, including waterways,

## At a glance

- New computer software offers significant time savings.
- Programs can only be used with LIDAR information.
- The Internet-based programs are quite accurate.

ditches, hills, roadways and tree cover. Government agencies are beginning to use it to plan road building projects, update floodplain maps and for other projects to save time from traditional land surveying.

## NRCS grant

The Pondbuilder program was developed by Agren Inc., of Carroll, Iowa, as part of a conservation innovation grant from the Natural Resources Conservation Service. It was tested by conservationists in four counties last year, and 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 Rich Sims. "I was impressed by their enthusiasm for the time savings the PondBuilder offered.

"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



**POND BUILDING ESTIMATES:** A detailed, accurate estimate of costs to build ponds like this one can be made in the NRCS office in less than 15 minutes. New computer software and LIDAR elevation data is now available in some states.



**TOM BUMAN**

have to go through contract modifications that take time and create problems for us," Sims says.

## Expanding nationwide

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, a 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 are Internet-based, Buman says, because upfront costs for GIS software and storage would be too costly for individuals.

"This technology is easy to use, fast and accurate, and that's what we all want," Buman says.

"We know field staffs are busy. These programs can be used to give more timely ser-

vice to individual landowners to show them many options quickly, with the valuable knowledge of more accurate expected costs," Buman says. "But they can also help plan and prioritize multiple structures on a watershed basis, locating structures and getting cost estimates in days or weeks rather than months."

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 is something that has potential to be used across the country, and could well one day be in common use.

Agren periodically hosts daytime and evening Webinars to explain how the software works.

For more information, contact Buman at [tom@agren-inc.com](mailto:tom@agren-inc.com) or visit the Web site at [www.agren-inc.com](http://www.agren-inc.com).

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