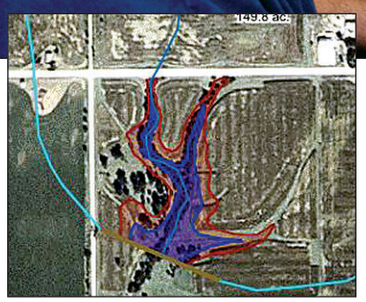
Pondering ponds with technology



IFT photo by Gene Lucht

ABOVE: Doug Jarr points out details of a proposed pond for landowner Tim Davis during a meeting at the soil conservation office this spring.

LEFT: Software provides the farmer with aerial representation of what the pond may look like on his farm.

By Gene Lucht
Iowa Farmer Today

OTTUMWA — Tim Davis is looking at a computer screen showing a map of his farm, except the map shows a pond where one doesn't yet exist.

"This helps a great deal," the farmer says as he stares at the screen. "You can picture it right away."

What Davis is looking at is a picture of an early estimate of how the pond would look and what it might cost. The estimate was made using a software tool called pondbuilder, developed using the Light Detection and Ranging (LiDAR) technology.

It is a relatively new technology that uses a series of scans of the earth taken from planes over several years by the Iowa Department of Natural Resources, along with the NRCS, the Iowa Department of Transportation and the State Division of Soil Conservation.

Using those landscape pictures, experts can measure elevation quickly and accurately (though not quite as accurately as with measurements taken by professionals on the ground).

Davis and local state soil conservation technician Doug Jarr are using pondbuilder developed by Agren, a private conservation consulting firm in Carroll.

By using modern technology, Jarr can quickly come up with a picture and a basic estimate for what a pond in a certain location may look like and what it may cost.

"It's scary sometimes, how close it's been (to on-ground estimates)," Jarr says.

Of course, the tool is just that — a tool. It doesn't solve all the problems related with building ponds or other types of conservation structures.

Also, it doesn't replace the work of technicians who must go on-site to take accurate measurements of elevation and slope and other factors.

But, it does allow Jarr to give farmers quick assessments of whether it is possible to build a pond in a specific location and what that pond may end up costing by the time it is built.

That can be helpful in cases where the landowner may be applying for grants or cost-share funds to help build a pond or a sediment-control structure.

It also may indicate potential problems early in the process, before technicians have spent a great deal of time and money at the site.

For example, in the case of the grade stabilization structure (a pond that is designed to prevent erosion) being built on Davis' farm, the early look showed there would need to be some changes or the structure could cause problems with a nearby road.

Those design changes were made early in the process, saving time and money.

Of course, Davis is a farmer who works hard to prevent erosion on his property, Jarr says.

Davis began thinking about a pond at this location years ago. But, conservationists have been trying to improve the Competine Creek watershed, and this project fits into those efforts, Jarr says.

Back at Agren, Stan Buman says pondbuilder is one of several software tools the company has either developed or is working to develop aimed at using LiDAR technology to speed conservation efforts of technicians on the ground.

The company developed pondbuilder with the help of an NRCS innovation grant. So far, 59 of 100 conservation districts in the state have used it, Buman says.

For Davis, the tool made it easier to get an idea what it would cost to build a pond on a problem area of his land.

And, that is a useful tool for his farm.

Averages can be deceiving when considering toll of soil erosion

By Gene Lucht
Iowa Farmer Today

Conservation, like many other things in farming, is at least partially about playing the odds.

What are the chances of an early frost or a timely rain?

Or, what are the odds of a gully-washer?

Some conservation leaders think the government doesn't always look at those odds in quite the right way.

"It's a problem that arises when you average anything," explains Craig Cox, senior vice president for the Environmental Working Group (EWG).

The EWG issued a report this past year saying, among other things, erosion averages paint a prettier picture than what is happening on the farm.

According to the report, USDA's NRCS data says erosion in Iowa averaged 5.2 tons per acre per year over a recent period, just slightly above the "sustainable" rate of 5 tons/acre.

Across the entire Cornbelt, the average is 3.9 tons/acre/year.

But, Cox argues the total is higher on much cropland and much higher on fragile land. He says those losses are hidden by low soil losses on other acres and adds heavy storms in recent years likely increased losses in many areas as well.

Due to those factors, Cox says the EWG is pushing Congress to not cut conservation spending in the new farm bill and to keep conservation compliance in place in some form, likely by tying it to crop insurance.

There's little doubt thunderous rainfalls have caused heavy erosion in

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