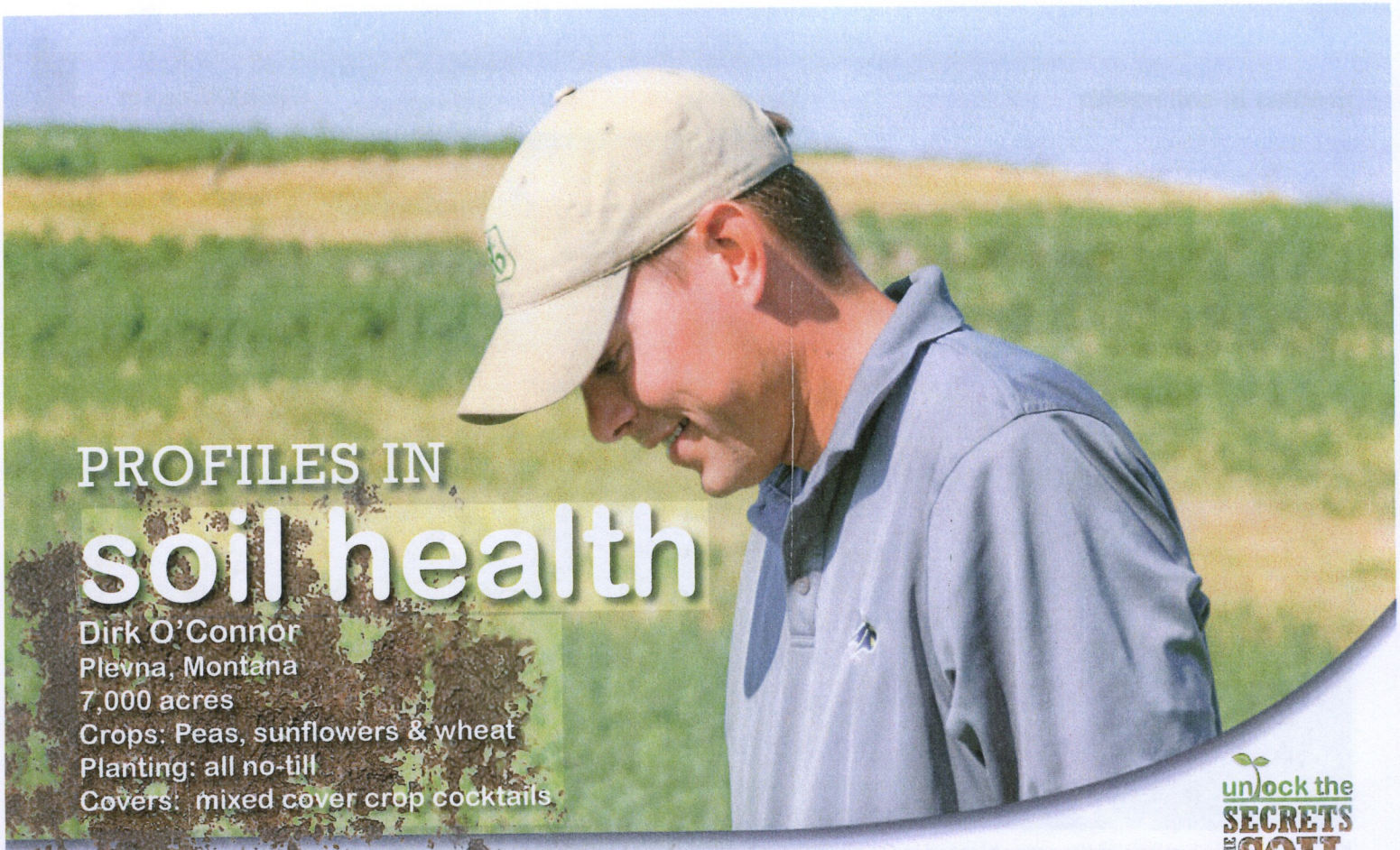

PROFILES IN

soil health

Dirk O'Connor
Plevna, Montana
7,000 acres
Crops: Peas, sunflowers & wheat
Planting: all no-till
Covers: mixed cover crop cocktails

unlock the SECRETS IN THE SOIL

Conserving Soil Moisture on the O'Connor Farm

The summer of 2012 was one of the hottest on record in eastern Montana. Plants were wilting and a soil thermometer measured a temperature of 100 degrees just below the soil surface. Despite the heat, the soil on Dirk O'Connor's farm still held moisture, and the peas, sunflowers, and wheat still produced.

"This [no-till] system gets us through the dry, hot times," says O'Connor, a farmer with 7,000 acres of cropland near Plevna, Mont. Nine years ago, the O'Connor farm switched to zero-till farming in order to save time, improve soil health and produce forage for their cattle.

O'Connor called the new system "a big cultural change for people who don't like to change."

Crop residue in a sunflower crop on Dirk O'Connor's 7,000 acre farm in eastern Montana.

However, he says it was necessary. Before the switch, the farm had issues caused by 80 years of tillage. The soil had difficulty holding moisture, which is especially valuable in a 12-inch precipitation zone with no irrigation. Loss of fertility, degraded soil structure and compaction were causing issues such as saline seeps, erosion, low moisture holding capacity and low overall productivity.

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Sunflowers are just one of the crops planted in O'Connor's crop rotation; the residue left from the crops keeps his soil moist and relatively cool even in hot summer months.

> *This [no-till] system gets us through the dry, hot times.*
>
> *- Dirk O'Connor, landowner*

By working with USDA's Natural Resources Conservation Service (NRCS), O'Connor developed a new farming plan.

O'Connor rotates his wheat plantings with corn, sunflowers, lentils, peas, flax, cover crops and grazing. The farm is now able to use one combine, one air drill, and one planter to cover all 7,000 acres of cropland. The residue left from the crops holds the soil down and the moisture in.

"The bottom line is the fact that we don't fertilize our native range and it still produces," says O'Connor. By enhancing soil health, O'Connor is working to improve the fertility of his cropland, too.

"O'Connor is an innovative farmer in our area," says Ann Fischer, NRCS district conservationist in Baker. "Instead of treating the symptom, he's treating the source."

Higher yields and saved expenses are just side benefits to O'Connor. "I'd like to see my kids take over land that is better than when I started," he says. By utilizing a low impact, cost-efficient farming system, O'Connor is well on his way to making that happen.

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