



Drone pic of a producer using the Power SWCD no-till drill to seed a dryland grain field. No-till, direct-seed drills are an important element of changing up farming techniques to improve Soil Health. (photo courtesy Greg Brown)

STRONG DEMAND FOR POWER SWCD NO-TILL DRILL REFLECTS GROWING INTEREST IN SOIL HEALTH STATEWIDE

By Steve Stuebner

The Soil Health movement appears to be gaining significant momentum among Idaho farmers and conservation districts statewide.

Over 10 years after the Natural Resources Conservation Service launched its Soil Health Initiative in 2012, a growing number of Idaho producers are embracing Soil Health farming practices and using no-till, direct-seed drills to plant cash crops and cover crops without tilling the soil.

The Power Soil and Water Conservation District recently wrapped up a county-wide Soil Health project funded with a \$162,000, \$319 grant from the Environmental Protection Agency and Idaho Department of Environmental Quality. They saw strong interest in the Soil Health program from their local producers and treated twice as many acres as expected.

Power SWCD purchased a no-till, direct-seed drill as part of the \$319 grant project. Once they had the

drill available for lease, they got lots of inquiries. The no-till drill was used on 4,647 acres of farmland, compared to an expected 2,000 acres. Cover crops were planted on 1,133 acres of farmland, compared to an expected 400 acres.

“We had people calling us right and left to get into it,” said Ivan Permann, Power SWCD Chairman and local producer. “That kind of surprised me. People were getting in line right away.”

Brett Leyshon, a Power District



Power District Supervisor Brett Leyshon checks out the robust growth of a diverse cover crop during a field tour. Leyshon has been no-till farming for more than five years. He's seeing less erosion in hilly terrain. (photo by George Hitz)

supervisor who owns his own 40-foot no-till drill, said he was pleased to see the enthusiastic response from producers. "For some people, it's a way to plant some cover crops and reduce erosion – I think it's going to be a good tool for that. Maybe they try it out on 200-300 acres and see how they like it. That's a good way to get started."

The Kootenai-Shoshone SWCD just received a \$162,127 DEQ Agricultural Best Management Practices grant so they can purchase a no-till drill that will be available for lease to producers in the Kootenai, Benewah, Bonner and Boundary county areas.

The cost of a no-till drill can be a big barrier for producers to try it on their own, so to have a drill available for lease or rent is a positive thing, experts said.

An informal survey of SWC staffers from around the state indicated that the following districts have acquired a no-till drill for rent or lease so local producers can try them out:

- Minidoka Soil and Water Conservation District
- East and Cassia Districts share a drill.
- Jefferson Soil and Water Conservation District
- Gooding and Wood River share a drill.
- The Wood River District has a rangeland drill available for rent.
- Teton Soil and Water Conservation District
- Butte Soil and Water Conservation District
- Balanced Rock Soil and Water Conservation District

- Ada Soil and Water Conservation District
- Madison Soil and Water Conservation District
- Canyon Soil and Water Conservation District
- Oneida Soil and Water Conservation District
- Power Soil and Water Conservation District
- North Bingham Soil Conservation District
- Kootenai Soil and Water Conservation District.

It should be noted that some districts, like the Lewis Soil Conservation District, used to rent a no-till drill in the 1990s. Over time, many producers bought their own drills, so the district doesn't rent or lease a drill anymore.

What is Soil Health?

The NRCS Principles of Soil Health are as follows:

- Minimize Disturbance
- Maximize Living Roots
- Maximized Soil Cover/ Soil Armor
- Maximize Biodiversity

In 2015, we featured a Soil Health story in *Conservation the Idaho Way* and shared information about the

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At a meeting of the “Soil Keepers,” a Treasure Valley Soil Health group, a demonstration on soil water retention shows the value of healthy soil with organic material vs. tilled soil. (photos courtesy Terry Hoebelheinrich, SWC)

NRCS Soil Health Initiative at the time. Much of it still rings true today.

Soil Health advocates see no-till, direct-seed farming, including the use of cover crops, as a promising solution to not only curb soil erosion issues, but also “give back” to the soil, wrote article author Steve Stuebner in the January 2015 issue.

“No-till farming allows a diverse set of microorganisms to thrive in the soil profile layer, vastly increasing its ability to absorb and retain moisture, store nutrients and combat pests,” noted NRCS then State Agronomist Marlon Winger.

“We all grew up thinking that the more we till, the more we fluff up the soil, the better, like roto-tilling the garden in the spring.”

Standing in a farm field in Kuna, Winger demonstrates what happens to the soil when it’s tilled. He raises

his shovel over his head and slams it into the ground with extreme force. “You see, the first thing is we can’t continue to pulverize the soil. It destroys the microbial community that’s growing in the soil,” he says.

Winger got his “religion” about no-till farming from Gabe Brown, a North Dakota farmer who’s been no-till farming with cover crops for more than 20 years. Brown spoke at the 2014 Sustainable Agriculture Symposium in Nampa in November, and more than 375 people – many of them Idaho farmers – heard Brown’s message.

“It’s all about soil health and how much life we have in the soil,” Brown says. *“Converting sunlight into dollars. If we have healthy soil, we’re going to have clean water, clean air, healthy plants, and healthy people. That’s what it’s all about for me.”*

Winger has been preaching the benefits of no-till, direct-seed farming statewide as part of NRCS’s Soil Health outreach campaign, and he’s starting to see the concept gain traction. “It’s amazing, it’s really starting to catch on,” he says. *“We’re gaining momentum.”*

“Soil is not an inert growing medium – it is a living and life-giving natural resource. It is teeming with billions of bacteria, fungi, and other microbes that are the foundation of an elegant symbiotic ecosystem,” the NRCS Soil Health web site says.

Shawn Nield, NRCS State Soil Scientist serving Idaho, agreed that we are seeing an upward trend of engagement among farmers in the state.

“We have a lot of interest in soil health-related conservation practices,” Nield says. *“NRCS has*

received unprecedented funding for many of those in the past few years and folks are making good use of it. Having additional resources at hand to assist in trying something new is helping. Also, seeing a positive return on investment is huge.

“I think as more folks see their neighbors start doing things differently and improving their soil resources and bottom lines as a result, the interest will continue to grow.”

Power SWCD outreach program

George Hitz, SWC Natural Resource Conservationist who assisted the Power District with its \$319 grant application, said, “I really think no-till and cover crops are some the best practices we can promote to reduce erosion, improve soil health, rebuild resilient soils and create a long-term productive and sustainable future in agriculture.

“Mimicking nature or natural systems tends to lead us towards healthy soils and cleaner water, crop diversity and no-till gets us closer to that goal.”

Going back to the NRCS Soil Health fundamentals, “cover crops and no-till can check all those boxes, and more so, when combined with other conservation practices,” Hitz says. “These practices are being adapted more as time goes by and people see the benefits, the reduce inputs (tractor time/diesel fuel costs), and as soil health improves, with better functioning soils, we



A Power SWCD grant participant experimented with no-till, companion planting in this field. First they planted alfalfa, then the faster-growing corn when temperatures warmed. The corn outgrew the alfalfa, but the alfalfa continued to grow under the corn canopy. Then the farmer chopped the corn for silage and was left with an established alfalfa field that took off after the canopy was removed. He increased the diversity in his crop rotation by growing two crops at the same time, without tillage. (photo by George Hitz/SWC)

may see reduced fertilizer or pests, reduced erosion, while building soil organic matter, and improving water infiltration.”

The Power SWCD final report on the Soil Health project showed the following net benefits:

- No-till on 4,647.27 acres resulted in 4.98 tons of soil savings/acre (23,143.4 tons)

- Cover Crops (1,133.5) acres - 4.27 Tons of soil savings/acre (4,840.1 tons)

•Total: Approximately 27,983 tons of soil savings for the project.

Power District supervisors Ivan Permann and Brett Leyshon are both seeing a reduction in erosion on hilly grain fields that they farm in the area due to no-till practices.

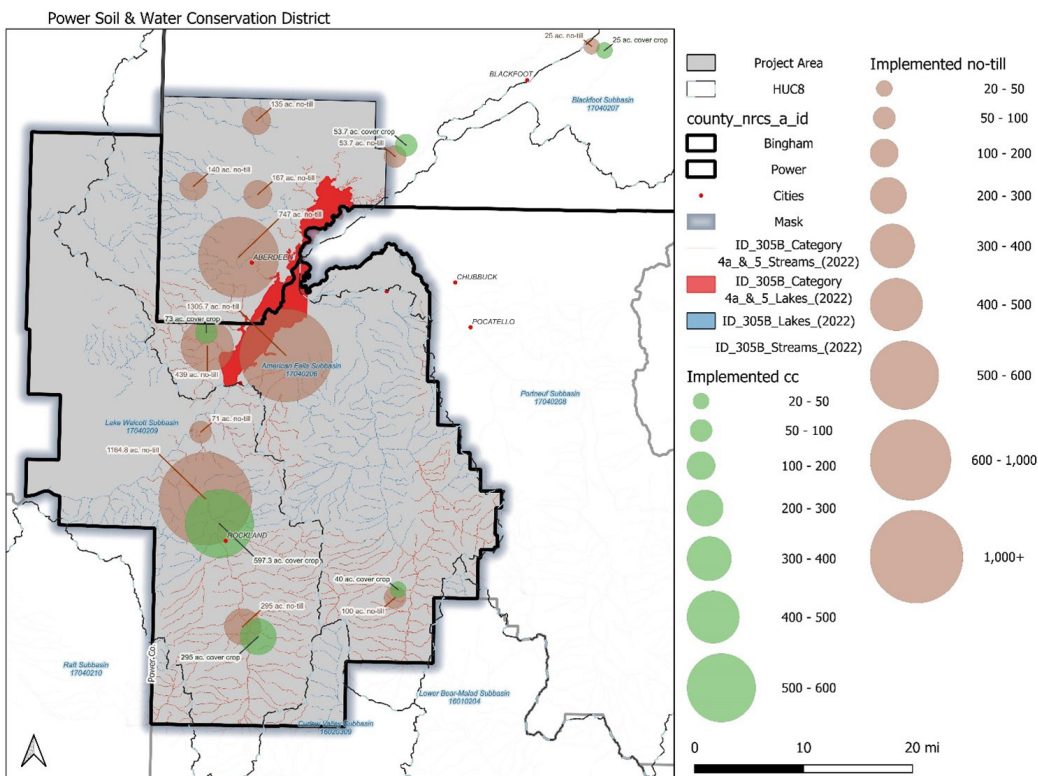
“I raise wheat, canola, mustard, beans and chickpeas,” Leyshon said. “I seed right into my stubble with the no-till drill and it’s worked well. It’s really helped with my erosion on hilly ground. Since I started no-tilling, I haven’t had any washouts in my field.”

Permann said he’s been experimenting with no-tilling for 20-30 years. He been doing it “seriously” for about five years.

“We’re still learning,” he says. But the reduced erosion on steeper farm ground has been nice to see. “We rented some farm ground that had a lot of erosion problems,” he said. “We did no-till on that, and we’re not seeing any significant erosion compared to how it was before.”

High winds in the spring or fall in Power County also can lead to wind erosion. When farmers plant cover crops to prevent wind erosion that’s a positive, Permann said. The NRCS

Power County Soil Health Project - S656 implementation (2021-2023)



Map shows areas in the Power District geographic area where producers are using or experimenting with no-till drills and cover crops. (map courtesy Power SWCD)

Aberdeen Plant Materials Center helps with the cover crop seed mixes for producers.

Producers know that it takes a big change in farming practices to switch to no-till direct-seed farming. It may only work on certain

crops. Grain farmers have been using no-till the longest in Idaho, compared to farmers who are raising things like sugar beets or potatoes, for which tillage is still necessary. Producers also are using no-till in raising alfalfa and corn, in some instances.

Nield said there can be other farm practices that can be used to minimize soil disturbance for things like beets and spuds.

“There’s quite a bit of success with strip tillage for beets and that’s a covered practice (for potential NRCS Soil Health funding),” he said. “Spuds are trickier but conservation crop rotation and nutrient management still apply as soil health practices that we can help with and may work well for those producers. Those practices help promote diversity of soil life and help feed the soil. Additionally, our soil carbon amendment practice



Producers check out a no-till field in Gem County during a Soil Keepers tour (photo by Terry Hoebelheinrich)

can help boost soil organic matter by applying compost. Those are just a few ideas.”

Hitz encourages producers to ease into no-till and make sure it works for them. Permann and Leyshon point out that it is a big deal to change to no-till practices. Being prepared to do significant weed control on no-till fields following planting is essential, they said.

“It’s quite a leap to go into it,” Leyshon said. “I wouldn’t have done it without the help from NRCS considering the cost of purchasing your own drill and the cost of spraying. It’s more intensive management ... But I’d like to see more people get into it.”

With the no-till drills available for lease or rent, “the Districts are seeing and filling that need for producers who would like to try it, but not ready or able to fully invest in the technology,” Hitz said.

“The Commission, Conservation Districts, NRCS, and groups like The Nature Conservancy have programs that can help producers transition to no-till and other soil health practices which has also increased awareness and acceptance.

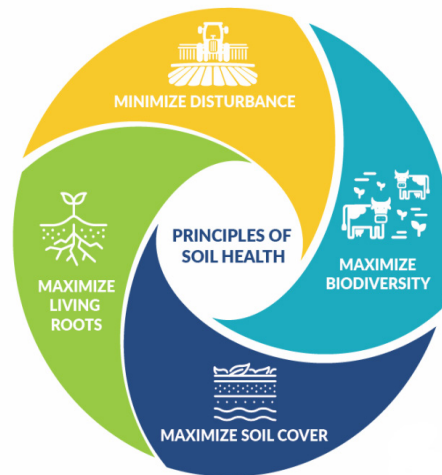
“It doesn’t have to be all or nothing, any time a soil health principle can be implemented can be good for the land.”

For more information, contact:

- Shawn Nield, NRCS State Soil Scientist, shawn.nield@usda.gov, 208-378-5728.



Kootenai-Shoshone SWCD is purchasing an Esch Model 5612, 12-foot no-till drill, which can be towed by a 80-100 HP tractor or a 3/4 to 1 ton pickup. (courtesy Jenna Ditzel/SWC)



- George Hitz, SWC Natural Resource Conservationist in Eastern Idaho, George.Hitz@swc.idaho.gov, 208-810-0760

- In various regions of Idaho, producers meet up at least once a year to share information about no-till farming and often provide field tours of the same:

- o Magic Valley Soil Health Forum, Steve Schuyler is the point of contact, 208-420-9698.

- o Courtney Cosdon, U of I Extension/ NRCS, Soil Health Instructor, 208-364-4692. Cosdon is also active with the Magic Valley Soil health Forum.

- o Soil Keepers, Treasure Valley Soil Health group, Tyson Meeks is the point of contact, soilkeepersgroup@gmail.com

- Lewis Soil Conservation District annual conference, Janette Mendenhall, 208-937-2291.

- NRCS Soil Health web page: <https://www.nrcs.usda.gov/conservation-basics/natural-resource-concerns/soils/soil-health>

Steve Stuebner writes for Conservation the Idaho Way on a regular basis.

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