

# Nature's cleanup crew: Dung beetles control farm pests and pathogens

By SIERRA DAWN McCLAIN  
Capital Press

NOTI, Ore. — Beetles, spiders and ladybugs scuttled across a mound of soil.

"When I'm out checking soils or planting, I'll see dung beetles scurrying around," said Chris Overbaugh, co-owner and co-manager of Winter Green Farm in Noti, producing vegetables, berries, sheep and grass-fed beef on 171 acres.

Overbaugh stepped onto the mound, which ran along the fence line. This was a beetle bank, about 18 inches wide and several inches tall on either side of the fence, providing year-round habitat for beneficial insects.

Researchers say Overbaugh and his wife, Shannon Shipp-Overbaugh, do "incredible" work promoting beneficials, including the humble dung beetle.

Scientists say dung beetles are effective at suppressing human and livestock pathogens, promoting food safety, reducing fly populations and improving soil health. But the beetles, experts say, are underappreciated.

"I think there's just sort of a dung beetle blindness," said Bill Snyder, an entomologist and professor at the University of Georgia. "People are just unaware."

Several years ago, when Snyder was working for Washington State University, then-doctoral student Matt Jones, now a WSU researcher, approached Snyder with an idea: to study dung beetles.

In 2014, the two soon secured a \$500,000 USDA grant for a three-year project.

Jones and Snyder worked in 70 fields across California, Oregon and Washington, representing conventional, organic pro-



Sierra Dawn McClain/Capital Press  
**Shannon Shipp-Overbaugh, left, with husband Chris Overbaugh.**



**Bill Snyder Matt Jones**

duce and integrated livestock-and-produce farms.

One site was Winter Green Farm. Overbaugh, the farmer, said while he was already aware of dung beetles, working with Jones "heightened our awareness."

Josh Cohen, owner of Barking Moon Farm in Applegate, Ore., also participated and said it was amazing to watch Jones find "massive numbers of beetles" in undisturbed soil.

In field studies, Jones drove a van across the West. Inside was a cooler of pig feces. He'd visit farms, trap native beetles, leave dollops of manure in fields, then come back to study how much dung had been removed.

"It was kind of a crazy study," said Snyder, then Jones' faculty supervisor.

The second portion of the study looked at how effective dung beetles are at reducing E. coli.



**There are thousands of dung beetle species in the world, and researchers say the many species native to the West are more effective at their work in that region than introduced, non-native species.**

breakthrough study, however, the researchers say dung beetles are still underutilized.

Some countries are ahead of the U.S. In Australia and New Zealand, for example, large-scale nurseries propagate dung beetles and sell them to farmers. This practice is still rare in the U.S.

But researchers say American farmers can encourage native dung beetles to populate by creating the right habitat.

"The most beneficial thing growers can do is to conserve and encourage the dung beetle populations that are local to their area," said Jones.

This can be done by creating beetle banks, planting hedgerows, reducing use of broad-spectrum insecticides, leaving small areas untilled, growing diverse crops in rotation and allowing livestock to drop manure on pasture.

"Dung beetles are nature's cleanup crew, and they can do a lot of good if you let them," said Snyder.



Sierra Dawn McClain/Capital Press  
**Chris Overbaugh holds a scoop of soil dug from a section of undisturbed beetle habitat.**

In a laboratory, Jones fed pig poop laced with E. coli to dung beetles, and found some dung beetle species could kill 90% or more of E. coli in a few days.

The findings have significant food safety implications. Droppings left by wildlife and domesticated animals often carry E. coli, which can contaminate produce. Jones and Snyder showed dung beetles could help by burying and breaking down feces.

A few years after their



NRCS  
**NRCS Idaho Water Supply Specialist Erin Whorton.**

## Idaho water forecast: Streamflow reductions in many locations

By BRAD CARLSON  
Capital Press

Idaho water-supply specialists say irrigators in many locations will have less water to work with as the season continues.

"Based on dry soil conditions and lack of spring precipitation, we expect continued water supply shortages in the Big Wood, Little Wood, Big Lost and Little Lost basins," Erin Whorton, a hydrologist with the USDA Natural Resources Conservation Service Snow Survey in Idaho, said in a news release. "Diminished agricultural irrigation water supply is also predicted for the Snake River above Heise, and Oakley, Salmon Falls and Owyhee basins. Dry conditions across Idaho will continue to impact ranchers who utilize non-irrigated pastures."

NRCS said snowpack is melting earlier and faster than normal despite a few April storms bringing minimal gains to the highest-elevation sites. Peak snowpack occurred up to 26 days earlier than normal at some sites.

"Based on what we are seeing, we are anticipating a potentially very difficult year," Pat Purdy of Picabo

Livestock Co., in the Big Wood River Basin, told Capital Press.

He said the farm and ranch this year installed additional soil-moisture sensors. It will work with neighbors to cooperate on water usage, and keep some feeder hay it would have sold in a normal water year.

Purdy said he followed just over 200 acres, mostly barley.

University of Idaho cereal agronomist and pathology specialist Juliet Marshall, based in Idaho Falls, said that barley planting was nearly completed in the state and focused on higher-elevation areas.

In non-irrigated farming areas, "we've got some soil, especially topsoils that have recently been worked, with a little dryness on the surface depending on location," she said. Despite some recent rains, "we are concerned about soil moisture levels being low."

Marshall said top-layer moisture appears sufficient for barley germination. But without additional soil moisture, the soil can dry faster than the roots can grow downward. Drought early in the crop season can reduce the number of tillers or stems per plant.

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