

Understanding tillage and fertilizer implications on soil health and biological communities in transitioning organic systems in the Pacific Northwest

Researchers in the Department of Soil and Water Systems and Department of Entomology, Plant Pathology and Nematology have teamed up to study agricultural systems transitioning to organic production of alfalfa and small grain crops. The goal of this project is to support the development of resilient certified organic farming systems in Idaho and eastern Washington through enhancing our knowledge of the impacts of tillage management and fertilizer practices on soil biological communities and soil health. This research will be used to develop meaningful targets for soil health and pathways to success for transitioning farmers.

One of the four replicated plot studies is located at the Soil Stewards farm. In these plots, researchers and graduate students will be measuring a wide range of soil and entomological parameters over a three year period (Spring 2021-Fall 2023) including: earthworm populations, microbial biomass, aggregate stability, soil infiltration, soil organic carbon (water extractable C, permanganate oxidizable C, and total SOC), macro and micro nutrients, pH, nematode populations and soil arthropods.

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Photo: Above is the location of the future plots after initial soil preparation with a chisel plow in fall 2020.