
SOIL HEALTH INITIATIVE



Washington state has the second most diverse agricultural economy in the United States, second only to California, with an annual production value approaching \$11 billion for our state's economy. Maintaining and building upon that standing depends on better understanding soil health, the next frontier in agricultural research. WSU is requesting \$788,000 in the 2020 supplemental operating budget – carrying a \$3.152 million four-year impact – to develop and disseminate next generation strategies to help farmers improve soil health throughout Washington's diverse ecological landscape.

THE CHALLENGE

Washington's 35,000 farmers produce more than 300 different high-quality crops and food products from diverse agroecosystems across the state. Washington's farmers are excellent stewards of the land, but are increasingly challenged by



soil problems that impact production. In Eastern Washington, dryland wheat farmers face pressures from soil acidification and soil borne diseases that limit yields and rotation options for valuable cereal and grain legume crops. In the irrigated Columbia Basin, soil borne pests and diseases reduce yields and the frequency with which potatoes can be produced so that the potato industry can't keep pace with growing market demand by Pacific Rim countries. The tree fruit industry struggles to control soil-borne disease that kill newly replanted orchards and fruit disorders linked to soil processes that limit production and fruit quality. Yields of high-value specialty crops in Western

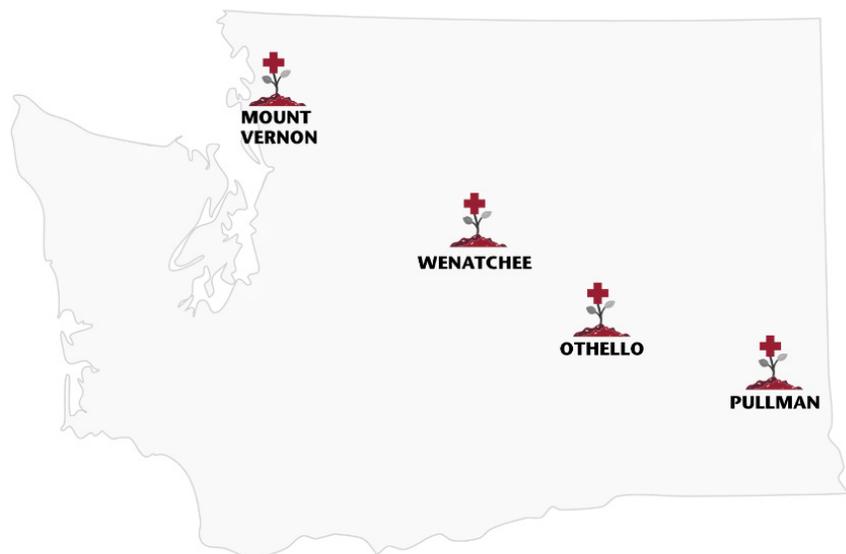
Washington are limited by production methods using heavy machinery and intensive tillage while soils are wet that, while necessary, degrade soil structure, resulting in compaction, slow water infiltration, poor drainage, and increases in soil-borne diseases.

THE OPPORTUNITY

Better understanding soil health is the next frontier for agriculture and represents the most important knowledge gap needed to take sustainable food production to the next level. Improved soil health is key to promoting shorter, more profitable rotations, suppressing disease, and producing higher yields of more nutritious foods.

Soil health is “*the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans*” (USDA). Soil health is critical to maintaining and enhancing the productivity of agricultural land, its ability to produce healthy food while protecting the environment. As is the case with human health, recent scientific advances have enhanced the ability to study and understand soil processes, in particular the soil microbiome, that are fundamental to measuring and managing soil health.

The Soil Health Initiative will help Washington maintain its leadership role in quality food production by creating key infrastructure necessary to establish the current baseline for the state of soil health in Washington, identify and link innovative management practices to improved soil health and functions, and promote outreach that puts practices to work on the ground for the benefit of Washington’s farmers and communities. Investments in soil health research will promote the optimization of soil chemical, physical and biological functions for food production, and develop new management strategies to increase yields, quality, and the nutritional value of crops by better managing the soil in our fields.



THE REQUEST

In 2019, the Legislature made an initial investment to launch the Washington State Soil Health Initiative so that Washington State University, the Washington State Department of Agriculture and Washington State Conservation Commission partners could conduct an analysis of baseline soil health statewide and produce a soil health research roadmap for the state. It also established the state’s second long-term agroecosystem research and extension site in Mount Vernon, joining a pre-existing site near Pullman. WSU is requesting an additional \$788,000 in the 2020 supplemental operating budget – carrying a \$3.152 million four-year impact – to bolster research and extension infrastructure and capacity to better understand the underpinnings of healthy soil throughout Washington’s diverse agroecological landscape.