



# REACCH long-term research sites

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Wheat is the main crop throughout most of the inland Pacific Northwest, but environmental, economic, and social drivers can alter suitability of wheat varieties, crop rotations, markets, and management practices from location to location. The effects of climate change on wheat production are still uncertain, but are likely to further impact these drivers. To better understand cropping system dynamics throughout the region, nine long-term

research farms and partner institutions have been established in different agroecological zones (AEZs) within northern Idaho, north central Oregon, and eastern Washington. Regional-scale research allows scientists to address the diversity among wheat production systems and to identify unique concerns for specific systems. Research sites and the major focus areas for projects at each are summarized below.



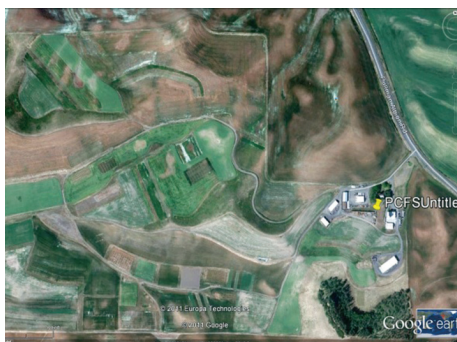
**Kambitsch Farm, Moscow, Idaho:** Trials were established in 1999 to examine conservation tillage and residue management effects on soil properties and crop growth in the annual cropping AEZ. Photo by Brad Bull.



**Cook Agronomy Farm, Pullman, Washington:** Trials were established in 1999 to focus on site-specific nitrogen management, crop intensification and diversification, residue management, and modeling biophysical processes and economic performance in no-till wheat-based systems in the annual cropping AEZ. Officially designated by the U.S. Department of Agriculture as a Long-Term Agricultural Research Site (LTAR). Photo courtesy of Washington State University.



**Columbia Basin Agricultural Research Center, Moro, Oregon:** Trials were established in 2003 to focus on low rainfall transition from Conservation Reserve Program (CRP) to crop production, focusing on fertility, fall and spring plantings, and wireworm control. Additional long-term experiments at this site focus on direct-seed, residue management, and crop intensification and diversification in the grain-fallow AEZ. Photo by Stephen Machado.



**Palouse Conservation Field Station, Pullman, Washington:** Trials were established in 2001 to focus on crop rotation, rotational nitrogen cycling and management, variable nitrogen rate application, and crop diversification and intensification in a no-till wheat-based system in the annual cropping AEZ. Photo from Google Earth.

## IMPACT

Long-term agricultural research sites can provide a historical account of environmental quality aspects and farm management practices over several decades. Detailed records and archives can help us understand agriculture's past and ensure the viability of the region's cereal-based agriculture into the future.



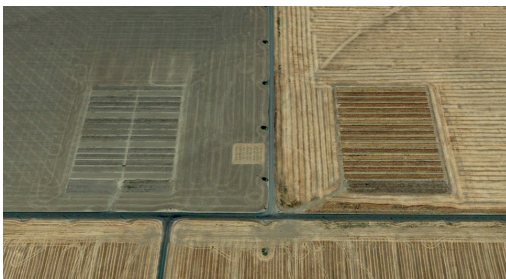
**Wilke Farm, Davenport, Washington:** Trials were established in 1998 to focus on crop intensification and diversification, site-specific nitrogen management, and flex cropping in a direct-seed, no-till fallow system in the annual crop-fallow transition AEZ. Farm-scale plots have been added in 2004 to make research practices more realistic. Photo by Aaron Esser.



**Columbia Basin Agricultural Research Center, Pendleton, Oregon:** Trials were established beginning in 1931 to focus on tillage and residue management, variety development, nitrogen fertility, recycled carbon and nitrogen, crop intensification and diversification, soil ecology, and pathogens in the annual crop-fallow transition AEZ. Oldest replicated research experiments in the western United States for residue management, tillage, and fertility. Photo by Stephen Machado.



**Jirava Farm, Ritzville, Washington:** Trials were established in 1997 and focus on long-term alternative cropping systems, conservation tillage, Rhizoctonia control, and residue management in the grain-fallow AEZ, with the goal of reducing fallow by using intensive cropping. Photo courtesy of Washington State University.



**Hennings Farm, Ralston, Washington:** Trials were established in 1995 and focus on replacing wheat-fallow systems with no-till winter triticale, spring crops, and high-residue farming for soil moisture conservation, weed control, plant pathology, agronomy, and economics for diverse crops and rotations in the grain-fallow AEZ. Photo by Dennis Roe.



**Irrigated Agriculture Research and Extension Center, Prosser, Washington:** Trials were established in 2011 as a new experiment to investigate winter cover crop and no-till management effects on crop productivity, water and nitrogen use efficiencies, erosion control, and greenhouse gas emissions in the irrigated AEZ. Photo courtesy of Washington State University.