REACCH
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Annual Meeting 2013 *Speed* Science Presentations

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Climate Change and Adaptation in PNW Wheat Systems -

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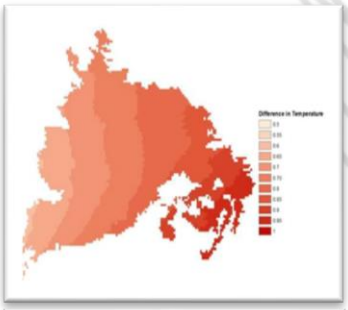
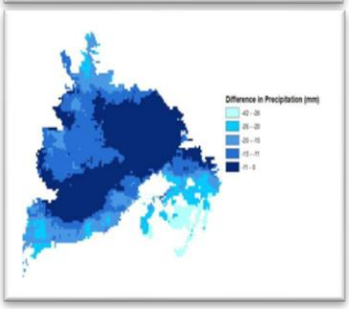
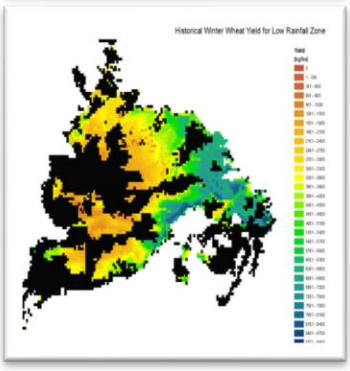




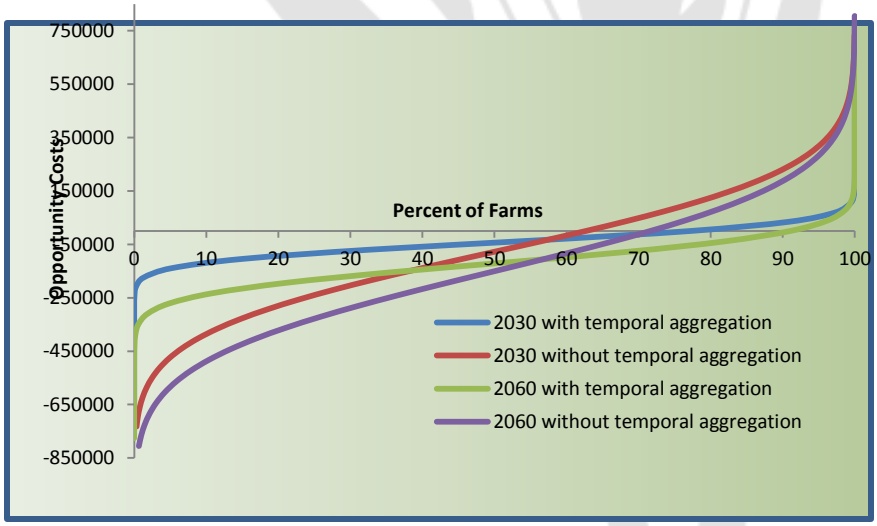


Pictures shown, from top to bottom, are:
1) Future temperature (2006-2035) minus baseline temperature (1979-2010)
2) Future precipitation (2006-2035) minus baseline precipitation (1979-2010)
3) Simulated historical WW yield from C. Stockle CropSyst analysis.

The purpose of this research is to evaluate the economic impact of climate change on cereal production, and to improve our understanding of the adoption of technologies such as direct seeding that may provide useful adaptations to climate change in the Pacific Northwest (PNW).

This analysis will investigate the mean and higher order effects of climate change on distributions of agricultural net returns, and also evaluate the factors affecting adoption of direct seeding technology. These elements will then be incorporated into analysis of climate impact and adaptation using the TOA-MD model, and will compare results obtained from CropSyst simulations and from econometric models.

Preliminary analysis of the winter wheat system using the TOA-MD model and CropSyst simulations suggest that the majority of wheat producers in the PNW are likely to benefit from the combined effects of climate change and CO2 fertilization (figure below shows percent of farms predicted to gain from climate change without adaptation, under alternative methods of data aggregation).



This presentation was given at REACCH 2013 Annual Meeting. This handout and supplemental video are available at reacchpna.org. Funded through Award # 2011-68002-30191 from the USDA National Institute for Food and Agriculture.

USDA United States Department of Agriculture | National Institute of Food and Agriculture | OSU Oregon State University | University of Idaho | Washington State University | ARS Agricultural Research Service