

# Multi-media case studies to build adaptive capacity among cereal-based farmers in the inland Pacific Northwest

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## Abstract



Although producers are experienced in responding to a variety of risks – market related, weather-related, and environmental – climate change poses unprecedented risks. Adaptation to new risks will require the development and use of new knowledge; and a capacity for collective learning and innovation. To support farmer to farmer education, we have developed multimedia producer case studies for cereal-based cropping systems in the Pacific Northwest. These case studies, incorporating written and video components, highlight innovative strategies farmers are implementing that enhance resiliency of their farming systems – including cropping intensification, precision nitrogen application, flex cropping, and irrigated cover cropping with mustard. They also span a range of cropping zones, including annual, intermediate, dry, and irrigated. The case studies provide details on how participants successfully adopted these practices, their perspectives on benefits and challenges, and their thoughts on risk and climate change. Final case studies will be available at [www.reacchpna.org](http://www.reacchpna.org), and additional case studies are planned for future years.



## Case Studies

### Precision Nitrogen Application, Eric Odberg, Genesee, ID

Eric Odberg was an early adopter of variable rate nitrogen application in the annual dryland production region of the Pacific Northwest. Eric sees variable rate as just one strategy in his ongoing efforts to keep his operation profitable and provide good stewardship for his land.



<http://youtu.be/DzN8cjlLef0>

*“It’s a win as far as cost savings for me as a producer. And it’s a win for the planet and general populous of less nitrogen going into our environment, whether it’s in the atmosphere or our waterways.”*

### Mustard Cover Cropping, Dale Gies, Moses Lake, WA

Dale Gies has developed an intensive two-year rotation of irrigated wheat, mustard cover crop, and potatoes. This rotation successfully suppresses soil borne diseases and nematodes, such that he doesn’t need to fumigate. Dale also grows vegetable and cover crop seed crops, and consults with farmers around the world about improving disease control through rotations and cover cropping.



*“We’re able to produce good yields, good quality, and improve the soil while we’re doing it.”*

### Enhancing Crop Diversity Steve & Becky Camp, LaCrosse, WA

Steve and Becky Camp are pushing the limits of what’s possible, growing spring canola and camelina, Austrian winter peas, spring peas, and winter barley – all in an area that traditionally grows just winter and spring wheat and spring barley. They also make their own biodiesel from camelina. Their experimentation is guided by holistic thinking, with goals of building soil quality, enhancing resiliency, and reducing long-term risk.



*“If each of those rotations has a direct advantage to the soil health, then I’m going to leave this farm in much better shape than we took it. And that’s one of our goals.”*

### Flex Cropping & Precision Ag Bill Jepsen, Lone, OR

Farmers in northeastern Oregon where Bill Jepsen farms traditionally use a winter wheat - summer fallow rotation to cope with dry conditions and shallow soils. Bill has developed a flex cropping system that lets him replace fallow with annual spring wheat and barley, or occasionally annual crop winter wheat, when he receives enough moisture.



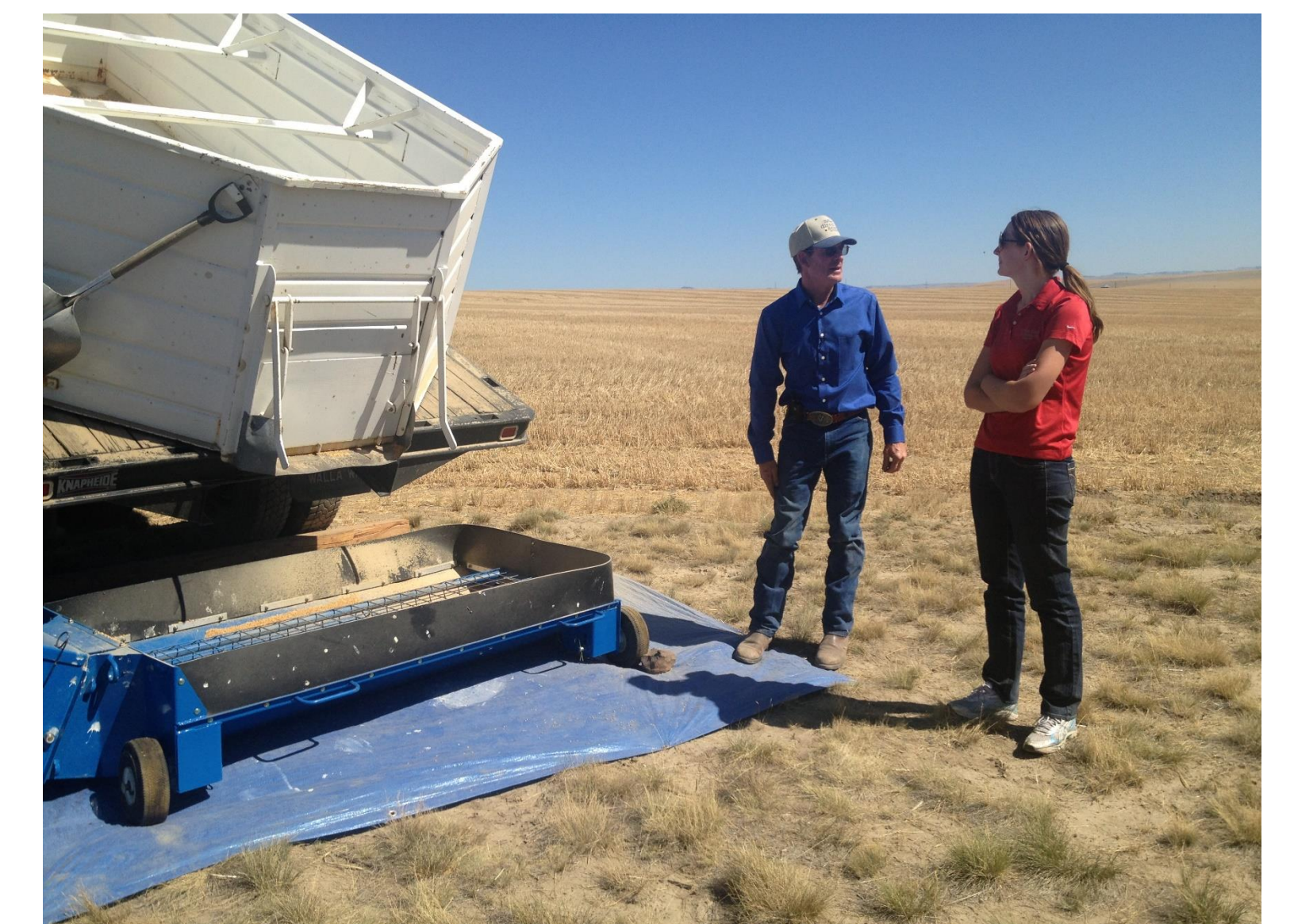
<http://youtu.be/grRKrpfM8FE>

*“Our goal is to make the most amount of profit, over the long haul, ...and the flexible rotation allows us to sneak in an annual crop when we would have nothing growing...At the same time, we can control weeds and...improve our soils.”*

## Background and Methods

While early climate impact assessment studies (Adam et al. 2012; Stockle et.al. 2010) have prioritized agricultural concerns related to climate change, scientists have so far been able to provide only generalizable recommendations regarding adaptation strategies (e.g. develop new plant varieties, new crop protection tools, more farmer innovation). With continuing climate uncertainty, innovative farmers who are already adapting can provide insights into their management, enabling others to join them in their resilient practices.

Adapting to climate change will require the development and use of knowledge and a capacity for collective learning and innovation (Berkhout et al. 2006). Farmer-to-farmer learning through case studies has been shown to develop personal and collective responses for adaptation and strengthen knowledge transfer through social networks (Röling & Wagemakers 1998; Hemstead et al. 2012; Mills-Novoa 2011). Our case studies build on the established trust of peers, focusing on mitigation and adaptation strategies already being used by ground breaking farmers in the inland Pacific Northwest.



Case studies relied on semi-structured interviews to tell farmers’ stories in their own words. Final products will combine written portions with photos and videos that will be accessible through digital formats.

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