

2007 STEEP PROJECT FINAL REPORT **(November 2006 through September 2007)**

PROJECT TITLE: Expanding Access to PNW Direct Seed and Conservation Tillage Systems technologies

INVESTIGATORS:

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Cooperators:

Other PNW extension specialists and educators; researchers on STEEP and related projects; conservation districts; USDA-NRCS; producer organizations; Ag-support industry

FINAL REPORT: November 2006 through September 2007

PROJECT OBJECTIVES: Increase grower awareness and adaptation of STEEP and related research technologies as integrated components of conservation tillage systems through continuation and expansion of technology transfer efforts including:

- 1) PNW STEEP Extension Conservation Tillage Update
- 2) PNW Conservation Tillage Handbook Series
- 3) Internet Web site -- PNW STEEP Conservation Tillage Systems Technology Source (<http://pnwsteep.wsu.edu>)
- 4) PNW Direct Seed Systems E-mail List Server
- 5) Field Days and Tours on Conservation Tillage Systems
- 6) Meeting Presentations

KEY WORDS: Direct seed cropping systems

STATEMENT OF PROBLEM: Lack of access to new research technologies by PNW growers and agricultural support personnel limits the success and slows the adaptation and adoption of conservation tillage systems in the region.

AGRONOMIC ZONES OF INTEREST: All Pacific Northwest cropland agronomic zones can benefit from this technology transfer program on conservation tillage systems, particularly those agronomic zones targeted in STEEP research projects.

ABSTRACT OF ACCOMPLISHMENTS: A variety of technology transfer programs and products have been included in this STEEP project from November 2006 through September 2007. Two issues of the *PNW STEEP Extension Conservation Tillage Update* newsletters were completed. The project Web site "PNW STEEP Conservation Tillage Systems Technology

Source” (<http://pnwsteeep.wsu.edu>) was updated with the new Handbook Series publications and Update issues, the 2006 STEEP Annual Report. The website receives about 3,000 hits per day, up from previous years. The PNW Direct Seed E-mail List Server was maintained with a network of over 500. The organization of the Pacific Northwest Direct Seed Conference was successfully transferred to the PNDSA in 2005, STEEP outreach personnel remain active in organizing this conference. The PIs organized a STEEP Research poster session at the January 2007 Direct Seed Conference in Kennewick, which was attended by about 500. Team members highlighted direct seeding and/or more intensive cropping and crop options at field days, tours and meeting presentations with a total attendance of more than 2,500. Lacking continued STEEP funding, no STEEP review or strategic planning session was organized.

RESULTS AND INTERPRETATION: Specialists on the PNW STEEP Extension Cropping Systems Team worked with STEEP and related program researchers, other extension specialist and educators, and Ag support personnel to summarize new “state-of-the-art” conservation tillage management technologies from an integrated cropping systems approach. The following is a description of the project accomplishments by technology transfer methods during this project period:

1) PNW STEEP Extension Conservation Tillage Update This newsletter continues to be an effective PNW technology transfer tool. A total of two issues were published in FY2007 (November 2006 and May 2007).

The current *Update* mailing list includes producers, county extension agents, conservation districts, NRCS staff, and Ag service industry, Ag media and other support personnel. The *Update* also provides a conservation tillage systems information resource for local Extension and Conservation District newsletters and education programs, and for the Ag media. The current mailing list contains about 700 addresses, about 50% of the recipients prefer to receive their Updates in electronic format

2) PNW Conservation Tillage Handbook Series The *PNW Handbook Series* is available and searchable on the STEEP Web site (<http://pnwsteeep.wsu.edu>). Several printed copies of the large 3-ring binder *Handbook* were mailed out. The *Handbook* now contains 158 *Handbook Series* publications and is a major reference on conservation tillage systems technologies in the Northwest. Future articles will be published as PNW Extension publications and placed on the Internet version of the Handbook. The article will be posted in printable and searchable format.

3) Web Site - PNW STEEP Conservation Tillage Systems Technology Source (<http://pnwsteeep.wsu.edu>) Internet and E-mail are now the major communication and technology access tools for PNW Ag support personnel and growers. All offices of cooperative extension, conservation districts, NRCS, Ag service industries, and an increasing number of growers in the Pacific Northwest have Internet / E-mail access. Data from a USDA National Agricultural Statistics Service study showed for 2002 (the last year data is available) that 58 percent of PNW growers have Internet access. The level is much higher today. Also the access of broad band internet has also increased significantly. Access to broad band permit rapid downloads of information and quick internet browsing. Most producers, industry consultants and agency all communicate by E-mail. PNW STEEP Web site and the PNW Direct Seed E-mail/Web List Server (see # 4 below) are helping meet this expanding PNW demand for computer technology access and an improved communications network on direct seed cropping systems. The STEEP Web site currently averages over 3,000 hits per day and provides access to

conservation tillage systems technology developed through STEEP and related NW research programs. The entire *PNW Conservation Tillage Handbook Series* is now on the Web site, including the new Handbook Series.

The 1998 through 2005 Conferences Proceedings are included at this site. The Conference page has a URL (<http://pnwsteep.wsu.edu/directseed>) that provides access to the proceedings and conference video information. A link was made to the PNDSA web site in advance of the 2007 conference, which has become the responsibility of the PNDSA.

Also the Web site includes: the Columbia Plateau Wind Erosion / Air Quality Project, with the 78-page, publication titled "Farming With the Wind" added as a PDF file (to view and print in print form); color photo additions with the STEEP logo; logos of UI, OSU and WSU at the top of the Web index pages; and navigation enhancements for the PNW Direct Seed List Server) Web page. A calendar of events on direct seed systems is continually updated with applicable events in the Northwest and North America.

An electronic copy of the out-of-print 1978 publication *The Cooperative Palouse River Basin Study* was produced and placed on the STEEP website. This reference is frequently cited and sought after by researchers and students. In absence of paper copies, this offers an alternative source to access the information.

4) PNW Direct Seed E-mail / Internet List Server This List Server offers a communications link on new information resources, events, research results, technology innovations, discussions and experiences from the dryland production regions of the Inland Northwest. It also helps provide access to direct seed systems technology that may be adapted to Northwest production conditions from other regions and countries. Messages are received by e-mail and are also stored on the List Server Web site for later reference, and for access by those added to the List Server over time.

The address list includes over 500 university and USDA-ARS researchers, extension specialists, county/area Ag extension educators, conservation districts, USDA-NRCS staff, PNW grower organizations, Ag industries representatives and growers from across the dryland cropping areas of the Inland Northwest. Publicity efforts will continue on the availability of this new technology access and communications tool. The List Server Web site can be accessed for subscription and viewing of messages through the PNW STEEP Web site (<http://pnwsteep.wsu.edu>). Subscription requests can also be sent to Team members. All interested growers and Ag support personnel are encouraged to participate in the List Server. The goal is to help develop a stronger communication network and partnership among growers, researchers, Ag-support groups and agencies, and Ag industry to accelerate the development and grower adaptation of direct seed systems in the region.

5) Northwest Direct Seed Cropping Systems Conference The PI's of this project successfully transferred responsibility for the organization of the PNW Direct Seed Conference to the PNDSA in 2005. The PNDSA continues to organize the Conference and Trade Show. This year it was held on January 11 and 12, 2007 at the Three Rivers Convention Center in Kennewick, with an attendance of 500 and a slightly positive budget. PI's assisted in the organization of the conference, and organized a poster session at the conference, highlighting STEEP research.

6) Conservation Tillage Field Days and Tours The Team compiled descriptions of field days, tours and other events in 2007 highlighting new cropping systems technologies for direct seeding in the Inland Northwest and applicable areas of the Northern Great Plains and Canadian Prairie Provinces. The event descriptions were included in the May issue of the PNW

Extension Conservation Tillage Update newsletter (included in registration materials at a number of the field days below), put on the PNW Conservation Tillage Systems Information Source Web site, and sent on the PNW Direct Seed E-mail List Server.

Many of the Team members were involved in organizing field days, tours and trials that featured conservation tillage and/or more intensive cropping systems and crop options.

Several foreign visitors were hosted by the PIs, including conservation farmers from Australia, Finland and Ireland.

7) Meeting Presentations The PI's conducted 24 meeting presentations at grower meeting throughout the project period to a combined audience of over 2,500. The audience included growers, agency personnel, field consultants and university and ARS faculty.

8) STEEP Review

Due to lack of continued STEEP funding, no review of the STEEP program was held this year.

9) STEEP Impact Assessment

An impact assessment of the STEEP program was completed with the help of retired, long-term STEEP researchers. Goal of this assessment is to quantify, and qualify, the impacts the STEEP program has had on farming, economy, policy and environment in the PNW. Data analysis, computer simulations, and farmer interviews have been used to achieve this goal. A 28-page STEEP Impact Assessment Report, and a 4-page Executive Summary were published and distributed to Congressional delegates of Washington, Oregon and Idaho.

IMPACTS OF RESEARCH:

- 1) Increased PNW grower and Ag support personnel access to new conservation tillage systems technology developed through STEEP and related research efforts.
- 2) Increased effectiveness and profitability of growers' conservation tillage systems in the PNW as a result of access to and incorporation of appropriate new technologies and management strategies into grower's production systems.
- 3) Increased rate and extent of grower adaptation and adoption of conservation tillage systems as a result of improved effectiveness and profitability, plus a corresponding reduction in cropland soil erosion impacts on air and water quality.
- 4) Increased grower and Ag support industry / group recognition of and support for STEEP and related Northwest research and education programs on more intensive cropping systems under conservation tillage.

INTERACTIONS (COOPERATION) WITH OTHER SCIENTISTS CONDUCTING

RELATED ACTIVITIES: A primary focus of this project is to collaborate with scientists on STEEP and related projects to integrate new technology on conservation tillage systems into effective educational programs and materials for Northwest growers and Ag support personnel. Many of the Team specialists are also investigators on other STEEP or related research projects.

PUBLICATIONS AND PRESENTATIONS:

- Eight Conservation tillage updates
- Four Handbook series articles
- Over 100 Extension presentations
- One STEEP Impact Assessment Report, and Executive Summary
- Over 500 posts to the Direct Seed Listserv