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

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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

INTERIM REPORT: November 2005 through September 2006

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 2005 through September 2006. Two issues of the PNW STEEP Extension Conservation Tillage Update newsletters were
completed. One *PNW Conservation Tillage Handbook Series* publication (distributed through the *Update* newsletter issues) was added to the *Handbook*. The project Web site “PNW STEEP Conservation Tillage Systems Technology Source” ([http://pnwsteep.wsu.edu](http://pnwsteep.wsu.edu)) was updated with the new Handbook Series publications and Update issues, the 2005 STEEP Annual Report. The website receives about 2500 hit per day. 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. The PIs organized a poster session at this January 2006 Direct Seed Conference in Kennewick, which was attended by about 400. 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 2,200. A STEEP review and strategic Planning session was organized in Pasco, about 70 scientist and growers participated.

**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 FY2006 (November 2004 and May 2005).

   The current *Update* mailing list was revised and updated through survey cards included the *Update*. The mail 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** One new *PNW Handbook Series* was distributed through the *PNW Conservation Tillage Update* newsletter. It was added to the *Handbook*, and to the Internet version of the *Handbook* on the STEEP Web site ([http://pnwsteep.wsu.edu](http://pnwsteep.wsu.edu)). The Series titles and authors are listed at the end of this report. Printed copies in the *Update* are 3-hole punched and ready for insertion into the large 3-ring binder *Handbook*. The *Handbook* now contains 158 *Handbook Series* publications and is a major reference on conservation tillage systems technologies in the Northwest. This concludes the traditional paper distribution for the handbook. 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://pnwsteep.wsu.edu](http://pnwsteep.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 2500 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 distributed in FY 2006.

The1998 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 2006 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.

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. The PNDSA Conference and Trade Show was held on January 5 and 6, 2006 at the Three Rivers Convention Center in Kennewick, with an attendance of 400 and a slightly positive budget. PI’s 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 2006 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 listing was distributed in May 2006 through mailings to Extension Ag Educators, Conservation Districts, USDA-NRCS offices, the main Ag service companies and fieldmen. The event descriptions were also 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, 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 23 meeting presentations at grower meeting throughout the project period to a combined audience of over 2,200. The audience included growers, agency personnel, field consultants and university and ARS faculty.

8) STEEP Review

A review of the STEEP program was held in Pasco, WA on February 22 and 23. About 70 researchers, growers and industry representatives participated. A strategic planning session was held to gauge the direction and needs of the STEEP program. Results of the session are posted on the STEEP website and were included in the 2006 STEEP call for proposals.

9) STEEP Impact Assessment

An impact assessment of the STEEP program was started 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. So far, data analysis, computer simulations, and farmer interviews have been used to achieve this goal. Results are expected to be available late 2006.

EXPECTED OUTCOMES:
The Project has 4 expected outcomes or impacts:

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.