

**2004 STEEP PROJECT PROGRESS REPORT**  
**(November 2003 through October 2004)**

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

**INVESTIGATORS:**

**PNW STEEP Extension Cropping Systems Specialists Team**

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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 2003 through October 2004

**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://pnwsteeep.wsu.edu>)
- 4) PNW Direct Seed Systems E-mail List Server
- 5) NW Direct Seed Cropping Systems Conferences
- 6) Field Days and Tours on Conservation Tillage Systems

**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 2003 through October 2004. Two issues of the *PNW STEEP Extension Conservation Tillage Update* newsletters were completed. Three *PNW Conservation Tillage Handbook Series* publication (distributed through

the *Update* newsletter issues) were added to the *Handbook*. Five publications and numerous presentations (to a total audience of more than 3000) by Team members also focused on new technologies from STEEP and related programs. The project Web site “PNW STEEP Conservation Tillage Systems Technology Source” (<http://pnwsteep.wsu.edu>) was updated with the new Handbook Series publications and Update issues, the 2004 STEEP Annual Report, 2004 NW Direct Seed Conference Proceedings. The PNW Direct Seed E-mail List Server was maintained with a network of about 250 clients. The January 6-8, 2004 Northwest Direct Seed Cropping Systems Conference was held in Pendleton, Oregon. It featured 24 speakers, including 10 growers, from Idaho, Oregon, Washington. A detailed proceeding was distributed at the Conference and added to the Web site. The 2005 Northwest Direct Seed Cropping Systems Conference and Trade Show has been developed for January 13-14 in Spokane. It will feature speakers, including scientists and growers, from Idaho, Oregon, Washington, Brazil, Canada, and Europe. Field days and tours organized by Team members highlighted direct seeding and/or more intensive cropping and crop options with a total attendance of more than 3000.

**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 FY2004 (May 2004 and November 2004).

The current *Update* mailing list is over 2,850, including PNW producers (about 1,960), 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.

**2) PNW Conservation Tillage Handbook Series** – Three new *PNW Handbook Series* were distributed through the May 2004 and November 2004 issues of the *PNW Conservation Tillage Update* newsletter for addition to the *Handbook*, and were added to the Internet version of the *Handbook* on our PNW Web site (<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*. Since the *Handbook* was published in 1990, 53 new *Series* publications have been completed. The *Handbook* now contains 152 *Handbook Series* publications and is a major reference on conservation tillage systems technologies in the Northwest.

**3) Web Site - PNW STEEP Conservation Tillage Systems Technology Source** (<http://pnwsteep.wsu.edu>) -- The Internet and E-mail are rapidly becoming a major communications and technology access tools for PNW Ag support personnel and growers. Most 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. A 2001 USDA National Agricultural Statistics Service study showed that an average of 58% of PNW growers have Internet access, up dramatically from 18% in 1997 and 40% in 1999. Idaho leads

the nation with 62%. Along with the growth in Internet and E-mail use, Northwest growers are increasingly moving towards direct seeding and more intensive cropping systems to improve production efficiency and profitability, cropland productivity, and environmental protection. The PNW STEEP Web site and new 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 200 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 four new Handbook Series distributed in 2004.

There is a Web site page for the NW Direct Seed Cropping Systems Conferences (see Conferences #5 below) where you can select the 1998 through 2004 Conferences. The Conference page has a direct access Web site URL (<http://pnwsteep.wsu.edu/directseed>) that is utilized in publicizing the Conferences and providing access later to the proceedings and Conference video information. In advance of the Conferences, the Conference pages include: Conference overview; preliminary agenda; Conference brochure; sponsorship prospectus; Conference registration; poster exhibition registration; hotel registration and a link to the Spokane Ag Expo Web site. Templates have also been created to permit online completion, printing and mailing / faxing, the Conference sponsorship prospectus, Conference registration and poster exhibition registration.

Other new features on this Web site include: a new page on the Columbia Plateau Wind Erosion / Air Quality Project, with the 78-page, full-color project publication titled "Farming With the Wind" added to the Web page 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 American.

**4) PNW Direct Seed E-mail / Internet List Server** – This List Server offers an exciting communications link on new information resources, events, research results, technology innovations 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 initial address list in early 2000 included about 230 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. From this initial base network, the List Server has expanded with interested growers and other Ag support personnel across the region. The List Server grew to 310 by November 2000, 400 by November 2002 and currently is over 470. More than 60 messages have been posted on the List Server in the past year. 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 Conferences** – The seventh annual Conference was held on January 6-8, 2004 in Pendleton, Oregon. It was attended by 360 growers and Ag support personnel. The Conference was organized as a service to Northwest growers by two groups: 1) the PNW STEEP program through the STEEP Extension Team and 2) the PNW Direct Seed Association. It was co-sponsored by 12 Ag companies and agencies, and developed and promoted in cooperation with 12 PNW grower organizations and Ag support groups.

The program featured 24 speakers, including 10 growers, from Idaho, Oregon, and Washington. A Direct Seed Poster Exhibition also featured 32 posters. Some major program areas focused on management strategies for direct seed cropping systems include: changes in nutrient cycling and fertility management over time; managing for improved soil biology and direct seed benefits to soil health; redesigning crop rotations; and Brassica crop selection and management.

Publicity efforts were conducted in cooperation with the main PNW grower organizations in the Inland Northwest dryland cropping region to get Conference brochures to NW growers and Ag support personnel. These included: ID Grain Producers Association, OR Wheat Growers League, WA Assoc. of Wheat Growers, ID Assoc. of Soil and Water Conservation Districts, OR Assoc. of Conservation Districts, WA Assoc. of Conservation Districts, and USA Dry Pea and Lentil Council. Collaborative publicity efforts were also arranged to provide brochures or the Conference articles and the Website URL to NW Ag service industry field staff through many of the major Ag service companies and Ag industry organizations, including the Far West Agri-Business Association.

The Conference Website was kept up to date with the latest program and Conference information. It included also on-line registration for Conference co-sponsorships, Conference pre-registration and poster exhibition registration.

**Planning the 2005 Northwest Direct Seed Cropping Systems Conference and Trade Show** – The eight annual Conference and new Trade Show will be held on January 13-14, 2005 at the Maribeu Park Inn in Spokane, WA. The Conference registration will include entrance. The Direct Seed Conference will include a commercial trade show featuring commercial exhibits.

The Conference is again being organized as a service to Northwest growers by two groups: 1) the PNW STEEP program through the STEEP Extension Team and 2) the PNW Direct Seed Association. The Conference will be co-sponsored by a number of Ag support companies and agencies, and developed in cooperation with 12 PNW grower organizations and Ag support.

The program will feature 21 speakers, including 7 growers, from Idaho, Oregon, Washington,. A Direct Seed Poster Exhibition will also highlight research and educational projects in the region. Conference presentations will provide the latest in direct seed systems research results, equipment and management innovations, and experiences. Activities and accomplishments of PNDSA in 2004 will also be highlighted. At least 10 industry representatives will present new commercial innovations in direct seed drills and openers for seed and fertilizer placement, residue management and hillside stability.

Publicity efforts will be conducted in cooperation with the main PNW grower organizations in the Inland Northwest dryland cropping region to get Conference brochures to NW growers and Ag support personnel. Direct brochure mailings are planned through ID Grain Producers Association, OR Wheat Growers League, and WA Assoc. of Wheat Growers. Collaborative publicity efforts with the brochures and/or Conference articles and the Website URL are also underway with the ID Assoc. of Soil and Water Conservation Districts, OR Assoc. of Conservation Districts, WA Assoc. of Conservation Districts, USA Dry Pea and Lentil Council, and NW Ag service companies and organizations, including the Far West Agri-Business Association.

The Conference Website (<http://pnwsteep.wsu.edu/directseed>) is being kept up to date with the latest program and Conference information. It includes a Conference overview, STEEP Review program, updated agenda, speaker pictures and biographical summaries, Conference brochure, sponsorship and trade show prospectus, sponsor and exhibitor listings, poster exhibition, hotel reservations, and Conference pre-registration.

**6) Conservation Tillage Field Days and Tours** – The Team compiled descriptions of field days, tours and other events in 2004 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 June 2004 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. These events included:

- May 27 – Field Day at the OSU Hyslop Farm near Corvallis, OR - organized by Karow and Bill Young (100 attended)
- June 8 -- Field Day at OSU Columbia Basin Agricultural Research Center at Pendleton - organized with assistance from Wysocki (100 attended)
- June 9 -- Field Day at OSU Columbia Basin Agricultural Research Center at Moro - organized with assistance from Wysocki (100 attended)
- June 10 -- Field Day at WSU Dryland Research Station at Lind - organized by Schillinger (170 attended)
- June 15 -- ClearWater Direct Seeders (grower group in eastern WA and northern ID) field – organized by David Barton, UI Latah Co. Extension, with assistance from Veseth (45 attended)
- June 24 -- Direct Seed Research Field Day at the USDA-ARS / WSU Palouse Conservation Field Station near Pullman - organized by Veseth (140 attended)
- June 30 -- Field Day at the WSU Wilke Farm near Davenport – organized by Tonks (130 attended)
- July 7 -- Field Day on UI Canola, Rapeseed and Mustard Research Program - organized by Jack Brown, UI Brassica Breeder, with assistance from Guy (120 attended)

**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.

## **PUBLICATIONS**

### **Pacific Northwest Extension Publications (PNW Conservation Tillage Handbook Series)**

Juergens, L. A., D.L. Young, W. Schillinger, and H. R. Hinman December 2003. Economics of Alternative No-Till Spring Crop Rotations in Washington's Wheat-Fallow Region. Pacific Northwest Conservation Tillage Handbook Series No. 19 Chapter 10,. PNW Extension publication in Idaho, Oregon and Washington.

Schillinger, W.F., R.I. Papendick, S.O. Guy, P.E. Rasmussen, and C. van Kessel. December 2003. Dryland Cropping in the Western United States. Pacific Northwest Conservation Tillage Handbook Series No. 28 Chapter 2, PNW Extension publication in Idaho, Oregon and Washington.

Schillinger, W. F., D. L. Douglas Young, D. Rowell, H. Shaffer, and S. Schofstoll. May 2004. Cropping Systems Research in the World's Driest Rainfed Wheat Region. Pacific Northwest Conservation Tillage Handbook Series No. 29 Chapter 2.

### **Pacific Northwest Extension Conservation Tillage Update (newsletter)**

Koenig, R., D. Roe, and D. Wysocki, R. May 2004. Pacific Northwest STEEP Conservation Tillage Update newsletter. University of Idaho, Oregon State University and Washington State University.

Koenig, R., D. Roe, and D. Wysocki, R. November 2004 Pacific Northwest STEEP Conservation Tillage Update newsletter. University of Idaho, Oregon State University and Washington State University.

### **Proceedings**

Wysocki, D. J. Jan. 2004. Editor. Proceedings of Seventh Northwest Direct Seed Cropping Systems Conference. Jan. 6-8, 2004, Pendleton, Oregon. NW Direct Seed Conference, 3180 W. Clearwater, Suite E, Kennewick, WA and on the Web (<http://pnwsteeep.wsu.edu>)