

RTI News

Spring 2004

Newsletter of the Rural Technology Initiative

Volume 4, No. 3



Shortages of Resource Science Professionals Lead to Opportunities for Education

Washington's rural, timber-dependent communities have changed dramatically over the last two decades. In 2002, the Washington Employment Security Department reported the widest urban to rural income disparity in 30 years. A number of state and federal programs have been designed to help residents of rural, timber-dependent communities broaden their employment opportunities through advancements in education. Many of these programs, such as

Running Start, Timber Worker Displacement, and Workforce Training, have provided tuition assistance packages for rural residents to attend Washington State's 34 Community and Technical Colleges (CTCs). With enrollments declining in areas of study like natural resource sciences, assisting student transfers from 2-year colleges to state universities is an opportunity which will both benefit public education and also provide needed recruitment for forestry colleges.

As early as 1994, forest industry leaders recognized that enrollments in university wood-technology programs were declining precipitously while career opportunities in wood-based fields were increasing. From 1995-2003, national enrollments at professional forestry schools and colleges declined by 40%. A recent report from the USDA Forest Service warns of a growing shortage of qualified natural resource professionals needed to fill positions vacated by retiring baby boomers. Anecdotal reports from state, private, and tribal forest management organizations confirm similar needs.

Stewardship of America's forests to ensure sustainable ecosystems and reliable flows of forest products will require educated forestry professionals capable of addressing complex resource management challenges. Such professionals are most needed in rural forested areas. Rural residents with historic ties to the land and resource industries are great candidates to fill the growing number of forestry positions, but opportunities for higher education for this same

group of candidates appear to be limited. Technologies for innovative educational deliveries that create greater flexibilities and broader access are needed in order to increase student enrollments in forest resource programs.

Failing to address these shortages of trained natural resource professionals could have profound implications. Rural communities will be left further behind economically if natural resource management jobs go unfilled, which could lead to state unemployment rates staying well above the national average. At the national level, a shortage of trained forestry professionals

will hamper the ability of public agencies and private

"From 1995 to 2003, national enrollments at professional forestry schools and colleges declined by 40%."

industries to properly manage the nation's forests. Further consequences might include increases in forest product imports, which will worsen national trade deficits while unprecedented fuel loads in Inland West forests result in costly and destructive wildfires.

CTCs provide an important link between the residents of rural areas and natural resource science programs at state universities. The number of CTC students in Washington preparing to transfer to a 4-year program is projected to increase at a rate of 5% per year. A number of WA CTCs have natural resource programs that are recognized throughout the region for excellence. The graduates of CTCs represent a significant source of well-prepared students that could fill the gaps in forestry school enrollments and go on to take the resource management jobs being vacated by a retiring work force. However, students enrolled in CTCs have always faced formidable obstacles to their pursuit of higher education. Many students must deal with such barriers as poor academic performance in high school, limited English-language skills, and financial hardships. Many are non-traditional students who are place- or situation-bound people with jobs, homes, and family obligations and are older than the typical college student. Innovative educational deliveries that create greater flexibilities and broader access are needed to increase opportunities for transfer-student enrollments in 4-year forest resource programs.

The Western Instructors of Natural Resource Technologies (WINRT) is an organization dedicated to continuous quality improvements in CTC natural resource education. RTI is helping by bringing topical lectures and short courses in

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RTI Director's Notes

RTI is now in its fifth year of operation, and our mission continues to be one of technology transfer. Technology transfer can take many different forms. This newsletter includes a progress report on our direct training courses, which continue to be a key part of our delivery strategy. These trainings are well-received by participants, and the impacts are beginning to spread beyond those who have directly participated, as those who have been trained go on to train others. In addition to direct training, we are also delivering technology to the field through field guides. Barry Moore and Barry Southerland report on a new field guide that will help landowners and consultants assess stream channel conditions and pursue strategies that will maximize the effectiveness of riparian management efforts.

Technology transfer can also come in the form of education, bringing research knowledge from the universities to rural communities that can benefit from it. Janean Creighton reports on a variety of wildlife education programs that WSU Extension has been offering throughout the state to help landowners meet their wildlife management goals. In addition to bringing university knowledge to rural communities, it is also important to bring people from rural communities to the

universities. Larry Mason reports on education opportunities in natural resource sciences that will help students complete 4-year degrees and then return to rural communities to meet the increasing need for new resource management professionals. RTI is working to facilitate these opportunities and build relationships between community colleges and state universities.

This newsletter covers just a few of the ways in which RTI is pursuing its mission of technology transfer. Our website is another key part of our delivery strategy, making our research and education tools, including streaming video, easily accessible to a global audience. Others are following our lead in capturing short-course material on streaming video as a cost-effective way to tell a story to a wider audience. We will continue to explore and develop new technologies and pursue innovative ways to improve delivery.

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Stream Assessment Field Guide for Forest Landowners

One of the ways that RTI is increasing technology transfer to the field is by creating field guides. RTI is currently working on a field guide for assessing stream-bank stability and stream type. This field guide will help forest landowners and consultants make site-specific determinations of where a stream reach falls in a stream channel evolution sequence. This is important information, as it can predict the long-term effectiveness of riparian buffers for protecting habitat and water quality. In cases where a riparian buffer is likely to be lost due to channel migration, a more cost-effective alternate plan can be implemented for restoring the geomorphology of the channel to better meet riparian goals.

So far the assessment guide has been developed for what are known as glacial/fluvial valleys. This is a very common landscape type on both the eastern and western Cascade slopes. Streams in this type of valley are the most important for an overall restoration strategy. They provide the greatest percentage of habitat for threatened and endangered species, and they are also some of the most heavily impacted by human use.

typical riparian management strategies are not likely to be effective. Geomorphic stream restoration involves stabilizing the form of the stream channel such that it maintains its relative dimensions and can move sediment without losing or accumulating it over time. By establishing a template to guide proper channel design, this restoration process can be less costly, be more aesthetically pleasing, provide better fish habitat, not transfer energy and problems upstream or downstream, and provide for long-term stability. It should also make it easier to obtain financial assistance.

The stream assessment field guide will help landowners to better meet site-specific riparian management needs and goals by identifying stream reaches where riparian buffers will not be successful. The geomorphic restoration template then guides the restoration design to maximize effectiveness. This work is being expanded to include other valley types, with an emphasis on critical habitat types and heavily impacted areas.

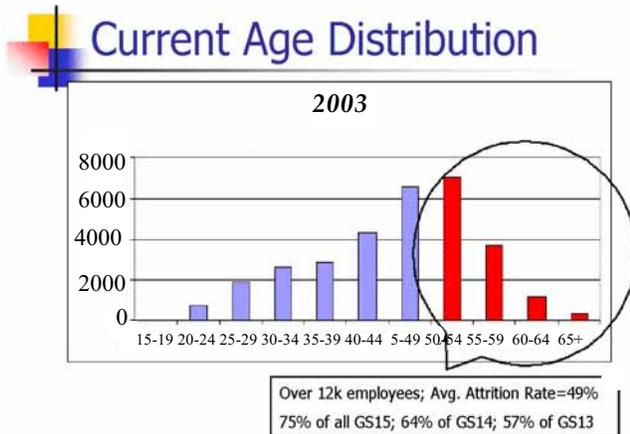


- Barry Southerland and Barry Moore, Dept of Natural Resource Sciences, WSU -

Work is also being done on a template to guide geomorphic stream restoration in cases where the stream assessment guide suggests that

"Shortages" continued from page one

forestry technologies such as the Landscape Management System (LMS) to CTC campuses. RTI is working with WINRT members and other CTCs to develop technologies such as streaming video (<http://www.ruraltech.org/video/index.asp>) that will help to reduce costs, minimize time away from home, and increase access for CTC students wishing to pursue higher education in resource sciences. Lectures and presentations are already available from the web or by compact disk. If you or someone that you know has interest in learning more about opportunities for higher education in natural resource management, please contact RTI to see what resources we have that may help.



- Larry Mason, RTI Staff -

Wildlife Education for Landowners

Wildlife conservation is an increasingly important education and outreach topic for non-industrial private forest (NIPF) landowners in Washington State. NIPFs account for almost 20% of Washington's forestlands, providing important habitat for a large number of wildlife species. NIPF landowners have a unique opportunity to enhance wildlife conservation both on their own land as well as state-wide. Recent studies of NIPF landowners in Washington indicate that wildlife conservation is an important reason for land ownership. Healthy local wildlife populations benefit both rural and urban communities through aesthetic value and enhancing quality of life

WSU Extension, a key RTI partner, has been involved with a variety of wildlife education programs throughout Washington and Idaho. These programs reached approximately 350 people in 2003, half of which were NIPF landowners. Other participants included loggers, youth organizations, and other interested public. At the 2003 Fall Education Seminar at Pack Forest in Eatonville, WA, a collaborative effort between WSU, UW, and researchers from state agencies and private industry provided an



extensive wildlife education program. Participants were able to learn about a wide range of wildlife topics, including wild turkeys, small mammals, songbirds, bats, ungulates, and bears. Streaming video of this program is available on the RTI website (http://www.ruraltech.org/video/fall_forestry_2003/index.asp).

WSU Extension has also partnered with the WSU Department of Natural Resource Sciences and the WSU Community Service Learning Center to develop an innovative pilot project that connects wildlife students with private landowners. Extension educators arranged field visits for students enrolled in a sophomore-level wildlife management course. The students identified wildlife issues that were important to landowners and wrote a series of extension bulletins covering these issues. The students also prepared PowerPoint presentations that were televised through the WSU videoconferencing system out to the WSU Learning Centers around the state. This project has helped students to better understand the role of extension in the community and the link between research and the application of that research. The project also helped students to better understand the wildlife management issues facing landowners, and landowners were able to provide input to the university regarding their educational and research needs.



- Janean Creighton, WSU Extension -

RTI Training Sessions Offer Hands-On Learning in Core Technologies

Direct, hands-on training sessions continue to be an effective approach to transferring technology to rural communities. RTI offers training sessions for three core technologies: the Landscape Management System (LMS), Geographic Information Systems (GIS), and Global Positioning Systems (GPS). Most of these sessions have been designed as 2-3 day short courses to accommodate rural audiences who have indicated that such a format suits them best for learning major programs. These training sessions are offered several times each year at locations throughout Western and Eastern Washington. Attendees have evaluated the training sessions highly (Table 1), with the biggest criticism being that there isn't enough time to learn all there is to know!

Table 1: Evaluation ratings of RTI training sessions

Training Type	Average Rating (out of 5)
LMS	4.3
GIS	4.6
GPS	4.0
ALL	4.4

To date, 220 people have attended RTI core technology training sessions, with LMS attendees accounting for over half of this number (Table 2). The attendee base covers a wide range of affiliations, including NIPF landowners, tribal, educators, consultants, government, and industry (Figure 1). Part of RTI's strategy with core technology training is to "train the trainers." With 60% of the attendees being educators, consultants, or affiliated with a government agency (including local, state, and federal), there is a multiplier effect that enables the technology to reach a far greater number of people than those who have been directly trained by RTI. The results of the training are now embedded in a number of other outreach activities, including coached planning and multiple field extension activities. In addition, the training and technology tools are available on the RTI website, which provides access to an even larger audience.

Table 2: Number of attendees to date

Training Type	Number of Attendees
LMS	112
GIS	61
GPS	47
ALL	220

In addition to core technology training sessions, RTI has offered workshops on other topics, such as the Forests and Fish Rules and innovative management and marketing. RTI has also collaborated with the Washington Department of Natural Resources Small Forest Landowner Office (SFLO) and the Washington Department of Ecology (DOE) to develop roads training

workshops for small landowners. These workshops were held this spring at three locations around the state.

RTI will continue to offer trainings in core technologies and other topics relevant to rural communities. A GPS training is scheduled for June 20-22, followed by a GIS training September 19-21, both at the University of Washington's Pack Forest in Eatonville, WA. The next LMS training December 8-10 at Skagit Community College in Mt. Vernon, WA. For more information about these offerings, please visit the RTI website at <http://www.ruraltech.org/training/>.

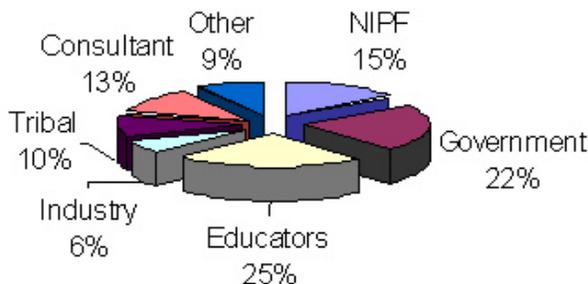
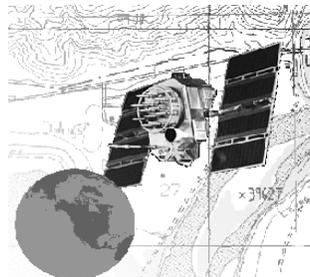


Figure 1: Affiliations of training attendees.

Spring Training Opportunities

RTI offers affordable training opportunities throughout the year to non-industrial forest landowners, tribal foresters, consultants, rural educators, and other interested parties in the use of global positioning systems (GPS), geographic information systems (GIS), and the Landscape Management System (LMS). All training workshops are certified for Continuing Forestry Education credits by the Society of American Foresters.

GPS Workshop June 20-22, 2004



Location: Pack Forest, Eatonville, WA
Cost: \$350

Visit the GPS workshop webpage at: www.ruraltech.org/training/#gps or call (206)-543-8684 to register.

LMS Update



The Landscape Management System (LMS) is continually being enhanced. In addition to the new version (3.0) due out this Fall, the following are some of the recent, or soon to be, additions you can now find on LMS:

- **LMS 2.0.45r7 (includes Economatic 1.0)**
Released March, 2004
- **Inventory Wizard 2.0**
Released March, 2004
- **Economic 1.1 with Scenario Analyzer**
Available June, 2004
- **Sort Table Wizard 1.0**
Available June, 2004
- **LMS 3.0**
Available Fall, 2004

Free downloads available from <http://lms.cfr.washington.edu/lmsdownload.php> (CD-ROMs are also available free of charge upon request).



Save the Date



Saturday September 18, 2004

Family Forest Field Day

Francis, WA

Contact Steve Gibbs at steve.gibbs@wadnr.gov

Sunday, September 19 - Tuesday, September 21, 2004

GIS Training Workshop

Pack Forest, Eatonville, WA

Contact Nicole Stevens at (206) 543-8684 or nms@cfr.washington.edu

Saturday November 6, 2004

Fall Education Seminar: *Technology in the Woods*

Pack Forest, Eatonville, WA

Contact Don Hanley at (206) 685-4960 or dhanley@u.washington.edu

Wednesday, December 8 - Friday, December 10, 2004

LMS Training Workshop

Skagit Valley College, Mt. Vernon, WA

Contact Nicole Stevens at (206) 543-8684 or nms@cfr.washington.edu

Thursday January 13, 2005

Introduction to LMS (1-day workshop)

Space is very limited - Contact Don Hanley at (206) 685-4960 or dhanley@u.washington.edu

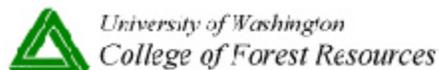
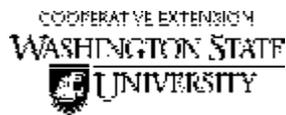


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