RTI Impact Report
Rural forest community issues *September 2004*

The Rural Technology Initiative: A Collaborative University of Washington/Washington State University Technology Transfer Center Serving Rural Timber Communities

Increasing complexity as a result of changing environmental regulations, recognition that new research findings are well ahead of implementation, and the substantial and widening gap between urban and timber rural incomes in Washington State suggests the need for more rapid technology transfer to the state's rural timber communities. The Rural Technology Initiative (RTI) was established in January 2000 as a pilot project managed cooperatively by the University of Washington's (UW) College of Forest Resources (CFR) and Washington State University's (WSU) Cooperative Extension. A rural advisory board representing non-industrial private forestland (NIPF) owners, tribal forest managers, forestry consultants, forest industry, labor unions, conservation and economic development districts, the U.S.D.A Forest Service, and local community organizations was established; it has set priorities for technology transfer needs. RTI is funded in part by USDA-FS Cooperative Programs and RTI augments base funding with other science and technology grants.

Priorities and Needs Assessments

Priorities.

The RTI advisory board identified four initial priorities:

- Landscape management case studies of (1) Forest and Fish Agreement impacts on NIPF owners under a range of alternative strategies; (2) dry-site thinning and critical habitat management alternatives; and (3) carbon credit protocols.
- Training and assistance for NIPF, tribal foresters and forestry consultants in response to an RTI-conducted needs assessment.
- Scientifically credible habitat models for landscape management alternatives and monitoring programs to demonstrate treatment impacts.
- Value-enhancing certified data for managed forests.

Needs Assessments.

RTI carried out needs assessments:

- Surveyed consulting foresters' needs, including training topics, level of training, and times and locations for delivery. With a 40% response rate, training topics considered important or very important included the following: regulatory interpretation; riparian protection; tax and estate planning; Geographic Information Systems Instruction (GIS); Global Positioning System Instruction (GPS), unstable slope and road impacts on water resources, Instruction in the Landscape Management System (LMS), spreadsheets and data management; and growth and yield. A majority of respondents felt that new technology can help land owners and managers more efficiently meet regulatory requirements at lower costs.
- Analyzed and interpreted data from two NIPF landowner surveys in Washington State preparatory to the development of a habitat conservation planning approach.

Activities

Short Course Training and Technical Support.

Training and technical support are critical to expanding the use of technology. RTI:

- Modified the Landscape Management System (LMS) software developed at UW to increase user friendliness, such as the inclusion of the Inventory Wizard, Econometric, Site Index Calculator & Log Sort Wizard.

- Conducted numerous LMS training sessions for consultants, educators, NIPFs, and tribal foresters.
- Developed a user-friendly LMS tutorial with software made available at no charge on CD or download from *http://lms.cfr.washington.edu/lms2.html*.
- Developed templates for management alternatives that are being integrated with WSU/DNR coached planning classes to assist NIPF owners in developing Forest Stewardship plans.

> ▲ *David Jenner, small forest landowner: "I want to thank you all for doing such a great job with the (Landscape Management System) training."*

Riparian Management Case Studies.

To understand the impact of new riparian regulations, RTI:

- Analyzed impacts of management alternatives.
- Prepared economic impact case studies on small sized forested parcels, analyzed the economic impact of a base case and four management alternatives allowed under the Forest and Fish Agreement. Total Forest Value losses ranged from 27% to 36% under the "best case" scenario, and from 45% to 83% under the "worst case" scenario.
- Developed an assessment procedure to evaluate alternative plans for their ability to produce desired future environmental conditions and economics sufficient for sustainable forest management.

> ▲ *Chan Norenberg, former President Washington Farm Forestry Association: "You people are doing a great job; this is the technical leg-up that Washington's farm foresters desperately need."*

Wildlife Habitat and Riparian Function Modeling.

To develop credible data on the impacts of forest management on habitat and stream conditions, RTI:

- Developed models directly linking habitat-suitability measures to the evolution of forest stands under management.
- Convened a panel of forest scientists to plan the development of better models and to identify gaps in needed coverage. The panel circulated a draft plan identifying upland habitat, riparian zone habitat, and in stream functionality and modeling needs.
- Used the Satsop Management Plan (Grays Harbor County) as a pilot test and case study for developing upland habitat models based on the Fish & Wildlife Habitat Evaluation Procedure. Using LMS, a range of management alternatives and resulting Habitat Suitability Indices can be evaluated for their impacts over time.
- Evaluated in-stream functionality indicators identified by NCASI (stream bank stability, sediment reduction, chemical removal, shade and temperature, large woody debris, particulate matter) in order to develop similar forest-dependent in stream functionality measures linked to LMS.
- Developed management plans and assessment methods for a multi- and small-owner Habitat Conservation Plans.

> ▲ *Sherry Fox, landowner and member of the Advisory Board: "RTI provides nonindustrial forestland owners and tribes with the technical support to undertake planning for certification, habitat conservation, carbon sequestration, fires risk reduction and other important strategies….you need only to look at their website at www.ruraltech.org. Their achievements are impressive."*

Fire Risk Reduction.
Increased numbers of intense crown fires are symptomatic of a changed management paradigm, e.g. fire suppression and insufficient attention to stand structure. RTI:

- Evaluated the impact of alternative fuel reduction treatments on fire risk.
- Developed tools linked to LMS that support development of fire risk reduction strategies.
- Demonstrated that the benefits of fuel treatments that reduce fire risk, when non-market benefits (saving habitat, fire fighting and relocation costs, fatalities, facilities losses, carbon, and water) are included, are much greater than the cost of treatment.
- Demonstrated that archival evidence of pre-European Eastside forests can serve as a measure of crowning potential for eastside forests. Developed metrics will be used to provide guidance to land managers in designing future landscapes to meet biodiversity goals and reduce fire hazard.

> ▲ *Kathleen Hemenway, PhD, Wildlife Hazard Mitigation – Research: "I read 'Investigation of Alternative Strategies for Design, Layout, and Administration of Fuel Removal Projects' and I think it is a wonderful analysis."*

Forest and Log-value Enhancement.
In evaluating management treatments that increase log values, RTI:

- Characterized species requirements and treatments that increase the market value of logs while managing for habitat values.

Road Management.
To facilitate road management plans required under the Forest and Fish Agreement that protect against slope failure and sedimentation, RTI:

- Developed software programs providing computerized road layout assistance and assessment of the efficiency of cross-drain layouts.
- Developed case studies that identify the cost of required changes to roads and culverts, that consider road density planning for NIPFs, an identification of preferred alternatives to comply with Forest and Fish requirements.
- Estimated total NIPF costs that led to legislative change more favorable to sustainable production.
- Produced an Extension Bulletin, Roads on Small Acreage Forests, which describes basic road principles for NIPF landowners.

Eastside Riparian Management and Forest Health.
Riparian regulations require leaving dense buffers that increase fire and disease risks. To understand how to avoid these problems, RTI:

- Using LMS, developed alternative plans for the dry site ponderosa pine and mixed conifer regions, which will reduce fire risk, and beetle kill and result in lower management costs while also storing more carbon.

> ▲ *James Walls: "Program Coordinator, Sustainable Northwest: "I am currently working in Oregon with the Nature Conservancy, a private landowner and the Forest Service on projects utilizing LMS. We are calculating carbon credits and applying other leading edge technology utilizing LMS. The great thing about technology like LMS is it's free and available for downloading off the Internet. Any forester in the United States can download LMS and utilize it."*

Impact on NIPFs.
To assess the impact of regulations on small forest landowners, the legislature requested development of a database of land parcels, RTI:

- Developed a tax parcel database of NIPF landowners for all counties in Washington State.
- Demonstrated that NIPF owners dominate the interface acreage between urban/suburban areas and the riparian lowlands. These areas are regarded as key riparian habitats for many wildlife species.

Publications and Outreach Education.
In addition to training programs, RTI made findings available via Web, newsletter, fact sheets, and other publications, RTI:

- Prepared and distributed quarterly activity reports.
- Published 2 to 3 newsletters each year.
- Contributed timely articles to Forest Stewardship Notes, a WSU Extension publication that is distributed to over 16,000 NIPF landowners and others biannually.
- Provided over 30 fact sheets available from the website.
- Presented talks and posters at many events such as Washington Farm Forestry Association, Intertribal Timber Council and Society of America Foresters meetings.

> ♟ *Robert Wahpat, Chairman, Yakama Nation Tribal Council: "The RTI …has worked closely with the Yakama Nation Tribal and Bureau of Indian Affairs forestry staffs. The Yakama Nation needs tools such as RTI, combining the educational and technical support from the best science at our universities, to assist in achieving the balance of economic development and environmental protection in our forests."*

- Developed streaming videos to support distance learning (e.g., a Sudden Oak Death workshop video was distributed within one week to field foresters by several companies; videos on buffer management demonstrations are reducing the need for costly field demos).
- Developed streaming videos of traditional Extension Educational opportunities, such as Coached Planning Sessions, Fall Educational Workshop, Human Dimensions Symposium.
  Developed and delivered outreach courses on LMS, GPS, GIS, Internet use, road layout, and fire risk reduction; and are developing, a course on forest tax and estate planning.
- Provided technical tools and assistance to community colleges.

> ♟ *Daniel Underwood, Peninsula College Professor: "RTI, by making possible access to 'state of the art' forest science, from models to computer simulation, has provided a much-needed public good in rural communities. I attended the LMS training session I was able to use LMS in class upon my return to campus."*

Graduate Students.
In addition, RTI funds both UW and WSU graduate students, who work with campus faculty and Extension Specialists and Agents; these students receive valuable training and enter the job market with better technological skills.

Contacts:
Bruce Lippke, Director, RTI, University of Washington, (206) 616-3218 or blippke@u.washington.edu.
Don Hanley, Co-Director, RTI; Extension Forester, Washington State University (206) 685-4960 or dhanley@u.washington.edu.
Web site: *www.ruraltech.org*

University of Washington College of Forest Resources
Washington State University
USDA-FS Cooperative Forestry