State & Private Forestry
Technology Marketing Unit (TMU)
Forest Products Laboratory
Madison, Wisconsin

2003
Accomplishments

Zuni Furniture Enterprise

Zuni Furniture Enterprise (New Mexico) began in 1991 through a small economic development grant from the USDA Forest Service. It has emerged into a viable small business that employs local craftspeople. Products include benches, mirrors, tables with chairs, jewelry boxes, bedroom sets, and award plaques.

Currently, Zuni is participating in our National Small-Scale Wood Energy Demonstration Program. A BioMax 15 was installed at Zuni Furniture in October 2003. The BioMax 15 is a state-of-the-art, transportable, fully automated, and environmentally friendly biopower system that burns forest residues to produce electricity and heat suitable for small enterprises, rural homes, and schools. At Zuni Furniture, the BioMax 15 provides power for some of their small woodworking machines.

Indigenous Community Enterprises (ICE)

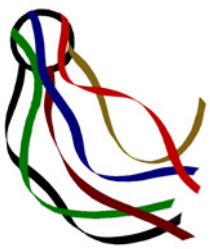
Estelle J. Bowman is the new Executive Director of ICE's Hogan project in Flagstaff, Arizona. TMU Program Manager Susan LeVan visited Estelle in September 2003. We look forward to working with Estelle and continuing our partnership.

In the beginning of the Hogan project, the TMU partnered with ICE and provided technical information regarding the Hogan structure. We will continue to partner with ICE through our National Small-Scale Wood Energy Demonstration Program. After testing a 5-kW biomass unit at the Forest Products Laboratory, the unit will be installed in an Elder Hogan in the Navajo community to provide heat and power. There are lots of applications for the 5-kW biomass units, especially in areas that are not grid connected. During LeVan's visit, Estelle gave her a tour of their ceremonial Hogan (photo at left), which was built from small-diameter roundwood and is located on the Northern Arizona University campus in Flagstaff.

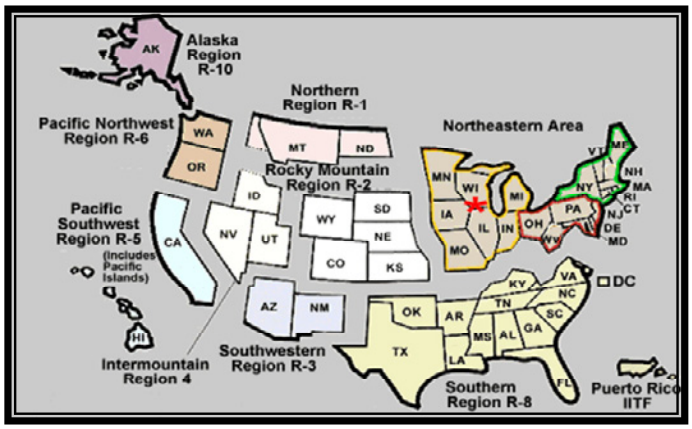
Fort Apache Timber Company

On September 30, 2003, the TMU was invited to present a technical assistance program to the Fort Apache Timber Company, which is owned and operated by the White Mountain Apache Tribe in Whiteriver, Arizona. After the presentation, the TMU staff was given a tour of their sawmill and remanufacturing plant. The photo at left is an overview of Fort Apache's sawmill operation, taken from their remanufacturing plant.

The "Circle of Colors" has great significance in certain Native American cultures. It represents the interrelationships of people, the earth, and the sky. All things—trees, animals, fish, birds, soil, water, and air—are connected by the circle. In it, all are important and all contribute to the survival and good of all others. All are due respect, care, and protection.



Solving Problems Through Technical Assistance



Nationwide, we provided technical assistance through a variety of ways this past year.	
Workshops & clinics	25
Site visits & technical assistance	208
Presentations at conferences/meetings	57
Phone inquiries, letters & visitors	1,944
Publications distributed	35,000
Authored/coauthored publications	32

More Technical Assistance Available for You!

In addition to our TMU staff in Madison, there are now staff stationed in the field: Dean Graham in Regions 1 & 4 (406–329–3230), Tim Reader in Regions 2 & 3 (970–247–5250), and Tommy Loggins in Region 8 (404–347–2451). The position in Regions 5 & 6 is in the process of being filled. Additional staff will enable us to be more responsive in identifying your technical assistance needs.

Grading Logs From Small-Diameter Trees

An alternative use for logs from small-diameter trees is in structural applications such as round-wood trusses, floor joists for log homes, and post and frame construction. Currently, properties are assigned to round timber graded by visual methods. However, these methods were developed for large-diameter logs. Little data exist to demonstrate how well visual rules predict the properties of logs in the 4- to 7-in.-diameter range. We have partnered with research to evaluate visual and mechanical grading techniques for logs from small-diameter ponderosa pine and Douglas-fir trees. The study is in progress.

In 2003, TMU granted the following proposals (RFPs):	
Cheyenne Log Homes Eagar, AZ	Product development using underutilized trees
Pikes Peak Lumber Co. Westminster, CO	Portable sawmill and solar kiln
P&M Plastics, Inc. Mountainair, NM	Developing new forest-based industry
Mount Wachusett Community College Gardner, MA	Low-valued wood as a gasification fuel
Watershed Research & Training Center Hayfork, CA	Green finger jointing
State of New Hampshire Concord, NH	Bio-oil commercialization plan
Northwest Wood Products Association Bend, OR	Small-capacity dry kiln
Latah County Parks and Recreation Moscow, ID	Small-diameter roundwood shelters
Intermountain Resources Inc. Monrose, CO	Biomass cogeneration plant
University of Wisconsin Stevens Point, WI	Sawmill yield projections & financial feasibility analyses
Dwayne Walker Eagar, AZ	Creating acrylic wood tiles from small-diameter woods
Colorado State Forest Service Ft. Collins, CO	Challenges faced by companies utilizing small-diameter material
Central Oregon Intergovernment Council Redmond, OR	Economic feasibility of small log processing facilities
River Valley Growth Council Rumford, ME	Super-insulated housing demo project

Our Customers: Tribal Enterprises • Rural Communities • Landowners • Forestry-Based Businesses • RC&D Councils Rural & Urban Economic Development Councils • State & Federal Agencies • National Forest System

Making a Difference by Demonstrating New Technologies

Community Pavilion in Westcliffe, Colorado

The TMU provided financial and technical assistance to the town of Westcliffe to build a 32- by 64-ft park pavilion made from small-diameter roundwood that was removed from forest fuel reduction activities. The pavilion was built to encourage creative uses for small-diameter (3- to 6-in.) roundwood and provide a large public gathering place within the community. The Westcliffe park is a venue for numerous civic events such as the Jazz in the Sangre's Festival, the Hayfever Bluegrass Festival, and Western Days. Expanding the market for small-diameter roundwood provides economic incentive for its removal from overgrown forest stands throughout the West. Removal is needed to improve forest health and reduce the risk of damaging wildfire.

Connecting people to resources, ideas, and one another so we can care for our forests and sustain our communities

Filtering Water Using Juniper

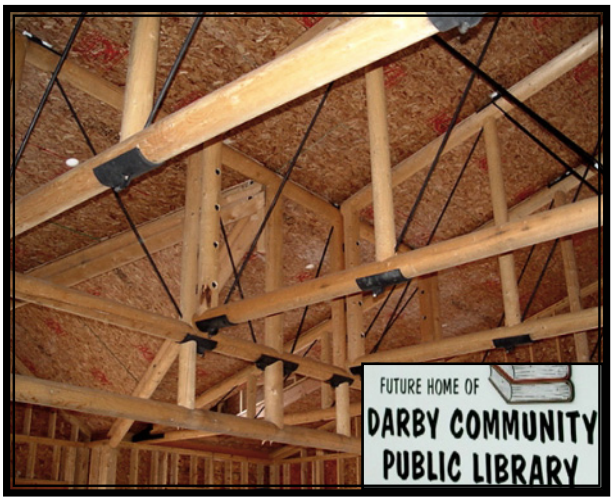
Only 0.0008% of the total water on earth is available and renewable in rivers and lakes for human and agricultural use. It is estimated that global spending on water filtration will increase from $17 billion in 1998 to $75 billion by 2020.

The TMU helped demonstrate one of the Forest Products Laboratory's research programs on water filters made from wood and agricultural fibers. The demonstration proved that these filters can successfully remove heavy metals, oils, phosphates, and pesticides from water. This has lead to a number of promising opportunities. One such opportunity is scheduled in 2004 where water filtration mats made from juniper fiber will be installed to remove contaminants from the Charter Oak Mining Site in the Helena National Forest (Montana).

Here's how it works. Water running in the troughs passes through the fiber filters, which are modified with chemicals to adsorb the targeted contaminant. Fiber filters remove contaminants before the runoff enters a larger water supply system. The technology may prove to be an inexpensive means of removing water pollution.

Friends of the Darby Library, Montana

The TMU partnered with the "Friends of the Darby Library" in Darby to help build a new 3000-ft² library that will showcase small-diameter timbers. We provided the funds and technical expertise for the architectural and engineering design for the library building that will use small-diameter roundwood as a structural building element. Construction material will be from fire-killed trees. Preliminary drawings were developed by an architect and engineering firm, with input from the TMU, and construction has started on the building. Benefits of this project include expanded business opportunities for Porterbilt Post and Pole (a local small business), builders of trusses, use of fire-killed material from Bitterroot fires, and demonstration of economical profits from forest fuel reduction activities.



How to Reach Us: Technology Marketing Unit, Forest Products Laboratory, One Gifford Pinchot Drive, Madison, WI 53726–2398
Phone: 608–231–9200 • Fax: 608–231–9592 • Website: www.fpl.fs.fed.us/tmu

Improving the Use of Wood Through Technology Transfer

All documents are free and available from our website, e-mail request, or just give us a call.

Review of Log Sort Yards **(FPL–GTR–132)**
by John "Rusty" Dramm

This report provides a general overview of current log sort yard operations in the United States, including an extensive literature review and information collected during on-site visits to several operations. Log sort yards provide many services in marketing wood and fiber by concentrating, merchandising, processing, sorting, and adding value to logs. Such operations supply forest products firms with the desired raw materials, which helps improve their bottom line by reducing the number of marginal logs processed. Ultimately, sorting logs leads to better use of the available timber resource. Successful log sort yards are self-sufficient and have well-established markets and a steady supply of wood. Log sort yard concepts and analyses described in this report have broad applications.

Small log sort yards may hold the key to effective forestland restoration and fuels reduction treatment while providing rural jobs and opportuni ties for value-added options for small-diameter and underutilized trees.

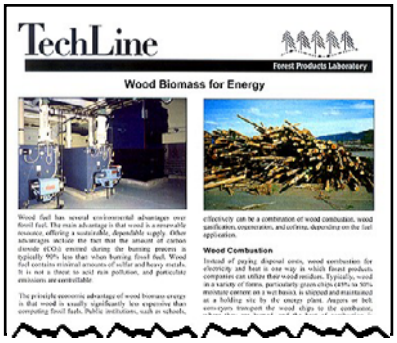
Successful Approaches to Recycling Urban Wood Waste **(FPL–GTR–133)**
by Solid Waste Association of North America

This report presents eight case studies of successful urban wood waste recycling projects and businesses. The studies represent a variety of approaches that have been successfully used for the recovery of urban wood waste. Each study includes a description of the company, partici-pants, benefits, type and quantity of wood waste processed, recovered products, economics, and contact for addition information. These case studies are testimony to the fact that wood waste can be successfully recovered from the waste stream in ways that are economical, benefit the environment, and conserve natural resources. Case studies are from the states of California, New Jersey, Minnesota, North Carolina, Washington, Texas, Michigan, and Maryland.

Uses for Small-Diameter and Low-Value Forest Thinnings
by Susan L. LeVan-Green and Jean M. Livingston
***Ecological Restoration*, March 2003**

Many potential uses for small-diameter and low-valued forest thinnings are described in this report. The trick is finding the right use within the economics of the location, manufacturing process, and potential market. Sometimes good ideas are technically possible but not economically feasible. Technological advances and new research into potential product options are helping to open the doors for communities to develop rural enterprises that add value to small-diameter thinnings. Researchers and others are continuing their efforts to find value-added uses for this material, while forest restoration is taking place.

See www.fpl.fs.fed.us/tmu for additional listings.


TechLine
Forest Products Laboratory
Wood Biomass for Energy

Just Released!

Techlines summarize recent research results, new technologies, or give how-to instructions. We have more than 40 Techlines available. Here are some of our latest releases:

- *Bandsaw Cracking: Troubleshooting Causes*
- *Biomass for Small-Scale Heat and Power*
- *New Primer Improves Adhesive Bonds*
- *Sawmill Technical Assistance*
- *Wood Biomass for Energy*


USDA Forest Service
State & Private Forestry
The Forest Products Conservation & Recycling Review
Miscellaneous News

TMU Newsletter

Every other month we write and distribute a news-letter to about 800 subscribers, describ-ing technology transfer activities, meetings, work-shops, success stories, and other items of interest to those in the forest products industry. If you would like to be one of our subscribers, let us know if you want to receive issues electronically or by the U.S. Postal Service.

November 2003