



Of Pellets and Poles: Entrepreneurs at Work

Participants in the “When You Get Back Home” conference had a chance to learn first-hand from entrepreneurs who are finding value-added uses for woody biomass. Field reviews included visits to Eureka Pellet Mills in Missoula, and Porterbilt Co. in nearby Hamilton, a traditional fence post company that has found new markets.

Derek Nelson, vice-president of marketing at Eureka, said, “Pellets are America’s homegrown, renewable energy source for the 21st century. Wood pellets reduce our country’s need for expensive imported fuels and emit less than half the EPA mandated level of chimney emissions.”

Wood pellets are upgraded or refined wood fuels that are produced from sawdust, shavings, bark or chips by drying and pressing with air. The wood’s lignin (“natural glue”), under pressure, acts as a binding agent and requires no additional ingredients such as starch binders. Wood pellets resemble rabbit food.

Premium Eureka Pellets, according to Nelson, have been marketed locally and regionally for many years. But because of the great demand for pellets on the east coast, his company is shipping them via rail to eastern distributors. These are sold to customers in 40 pound bags or one-ton pallets of 50 bags.

Burning wood pellets has advantages over burning raw biomass. The moisture content of pellets is substantially lower, 4 to 8 percent, compared to 20 to 60 percent for raw biomass. Less moisture means higher BTU value and easier handling, especially in freezing situations. The density of pellet fuel is also substantially higher than raw biomass (40 pounds per cubic foot vs. 10 to 25 pounds in raw material form). More fuel can be transported in a given truck space and more energy can be stored at the user’s site.

Pellets are more easily and predictably handled. Their uniform shape and size allows for a smaller and simpler feed system, which reduces costs. A full winter supply can often be stored in a 6 foot by 6 foot space and unlike a load of cord wood, pellets are free of leaves, bark, insects and dust.

The pellets sell for about \$2 to \$5 per 40 pound bag, which is equivalent in energy to 1.25 gallons of home heating oil. Also, a 40-pound bag produces only about a half cup of ash and almost no soot buildup.

With escalating home heating oil prices and millions of forested acres earmarked for hazardous fuels reduction, there is a potential for converting poor-quality, small-diameter roundwood to wood pellet fuels that will promote and assist development of sustainable energy, boost local economies, improve forest health and reduce fire risks.

For additional information on wood pellets, visit the Pellets Fuels Institute Web site: www.pelletheat.org.

Porterbilt finds niche for small-wood quality

A fence post is a fence post, unless it is part of a railing for a high-end log home.

That, in a nutshell, has been a key to the success of Porterbilt Co. Owner Ron Porter said his 40-year-old family business got a big boost when manufacturers of high-end log homes set up business in the Bitter Root Valley.

“They need small-diameter materials for decks. Lodgepole pines are straight and tall and have little taper. It’s been our

utopia,” Porter said. “Now we work winter, hunting season, all the time.”

The new business has allowed Porterbilt to mechanize. “We used to handle every fence post 12 times. Today it’s all mechanized. It took the value-added product to be able to mechanize.”

Quality is the key for Porterbilt. Wood for deck railings dries for a year, and then is planed with the care usually given to fine furniture. That’s fitting, since Porterbilt also manufactures custom furniture from some of the same logs that are brought in from local forest thinning projects.

Yes, Porterbilt still manufactures fence posts. These days, it’s posts and a lot more.

For more information on Porterbilt, visit the company’s Web site at www.porterbilt.com.



Ron Porter, president of Porterbilt Co. in Hamilton, Montana, explains how his fence and post business has found a value-added niche with the production of decking materials like this railing for upscale log homes. He uses small-diameter wood to turn out the high-quality items.

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organized volunteer work crews for post-fire treatments. The thousands of hours of volunteer services count as local match for funding that requires that component, including the Emergency Watershed Program funds and for other programs.

‘Healthy forests and communities’

“Our forests are dying, and nothing can help them at the scale of biomass utilization.” That message came from Dave Allen,

a district supervisor in the Western Shasta Resource Conservation District in California and a biomass energy consultant and fuel supply specialist. The district contracts with the Forest Service, BLM, Park Service and other agencies for fuels reduction projects, some that supply wood chips to a nearby electrical generating facility.

Siting and making such facilities financially viable is difficult, said Allen. But by becoming involved, “conservation districts can help industries built plants and guarantee lifetime jobs.”

Agencies like the US Park Service have changed their philosophy on forest health, added Allen’s partner-presenter, Mark Middy, a fuels management specialist at Whiskeytown National Recreation Area. “The Park Service originally had the philosophy, ‘Save everything.’ We’ve learned that you have to manage it or it will go away.” The Western Shasta District has contracted with the Park Service to achieve that.

For more information on biomass and forest health, see NACD’s Forest Resource Web pages at <http://forestry.nacdnet.org/>.



Fueling Change through Cooperation

Regional Conference Leads to National Gathering

This month's special report focuses on lessons learned from the "When You Get Back Home" woody biomass utilization, fuel reduction and forest health conference in Missoula, Montana, Oct. 12-13.

It was the second regional biomass conference sponsored by NACD this year. NACD and other sponsors also coordinated "Status, Trends and Future of the South's Forest and Agricultural Biomass," Aug. 29-31 at the University of Georgia Center for

Continuing Education in Athens, Georgia. NACD Forest Resource Committee Chair Charles Holmes attended both conferences. "Our second conference took an entirely different approach than the first," he said. "In Athens, we focused on technological advances and how that will stimulate biomass utilization. In Missoula, partnerships leading to good work on the ground were featured."

NACD is also a major sponsor of the

March 14-16, 2006, "Bioenergy and Wood Products Conference: Restoring Forests and Strengthening Economies" in Denver, Colorado. The national conference will explore successes in utilizing woody biomass, feature new innovations and stress strong partnerships.

A conference agenda and other materials can be found at www.nationalbiomassconference.org.

Local Solutions for Biomass, Fuels Explored in Montana

Some people say the scope of the forest health and biomass utilization needs in America's West is so great as to be beyond our ability to have an impact. Montana State Forester Robert Harrington is not among them.

"We have the ability to make these projects work," Harrington said during his presentation at the "When You Get Back Home" conference in Missoula. "This is not a crisis, and we should be able to do this."

Harrington framed the work in social terms. "This is not about fuels. It's about communities coming together to solve local problems."

Emphasizing the partnership theme, Oregon-Washington Bureau of Land Management Director Elaine Marquis-Brong noted that the BLM and Oregon Association of Conservation Districts have signed a memorandum of understanding pledging cooperation on resource issues and projects. "This is a vital agreement, a tremendous one," she said. She cited cooperation on grant searches, seed-sharing and other activities. One key to success of large-scale projects is to link several communities, she said, citing a juniper removal project involving several communities and agencies in the Prineville BLM District in Oregon.

Demand for forest health projects to protect communities has grown, she said. "It used to be 'not in my backyard.' Now, with the Healthy Forests Restoration Act and WUI (wildland-urban interface), it's 'only in my backyard.'"

Improving forest health is as much about protecting watersheds as it is trees, said US Forest Service Region 1 Forester Abigail Kimbell. "Clean water may be the most valuable commodity of the 21st century. Clean, low-cost water is precious," she said. Recreation and tourism in the forested watersheds of the West are important to local



Wayne Maahs, a member of NACD's Forest Resource Committee, presides at a session during the NACD-sponsored "When You Get Back Home" conference.

economies, which suffer in the face of catastrophic wildfire. Fuels reduction projects have helped to stop major fires in Colorado, Idaho and Wyoming in recent years, she said. As manufacturing capacity for use of small-diameter biomass grows, "the values generated by manufacturing reduce the cost of treatment," Kimbell added.

'Build a big table'

Among the featured partnerships at the meeting was the work of local partners on the Front Range of the Rocky Mountains in Colorado.

Dozens of groups have worked together to address forest health issues in the Upper South Platte River watershed, said Carol Ekarius, director of the Coalition for the Upper South Platte. "If you don't have a partnership in place before the fire, you won't have it after," she said. CUSP's "big table" includes five federal agencies, a state agency, four county governments, three conservation districts, three towns, water

providers, dozens of nonprofit groups and individuals.

The group works on pre-fire education, fuels reduction, post-fire restoration and other activities. It has been tested by several major fires along the Front Range.

The Jefferson County Conservation District is an active partner in CUSP, said Karen Berry, a district official and member of NACD's Urban, Community and Coastal Resources Committee. She underscored the strengths of districts in such partnerships. "Conservation districts have good relationships with local property owners and local agencies. Our conservation district said that as landowners, we have to take responsibility for our own properties."

In the wake of the 137,000-acre Hayman Fire of 2000, the district served as the first point of contact for affected landowners and

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NACD thanks partner groups that made the "When You Get Back Home" biomass utilization and forest health conference a success. They included the Bitter Root RC&D of Hamilton, Montana, which served as conference host, and several other partners.

Other sponsors included the U.S. Department of the Interior and USDA Forest Service and Natural Resources Conservation Service, the National Association of Conservation Agencies, the National Association of Counties, the National Association of RC&D Councils, the Montana Department of Natural Resources, the National Association of Counties, the National Network of Forest Practitioners, the Western Forestry Leadership Coalition and the Western Governors Association.



'Of Note': Take-Home Messages from Missoula

A goal of the "When You Get Back Home" conference in Missoula, Montana, was to provide information to help local partners accomplish forest health, fuels reduction and biomass utilization goals. Here are some key messages from that conference:

Community Wildfire Protection Plans

"These are ways for communities, folks like yourselves, to get involved," said Montana State Forester Robert Harrington. "They are community-driven, and we have a lot of work to do on private lands."

CWPPs help communities to target fuels treatment priorities and can be used to help provide reliable supplies of biomass for utilization projects, added Regional Forester Abigail Kimbell of USDA Forest Service Region 1. She offered a couple of questions for people to take home: "Is your plan complete? What existing businesses are there to grow the use of biomass?"

Conservation districts and RC&Ds are being encouraged to participate and take leadership roles in developing CWPPs.

Local leadership is crucial to CWPP work because those are the people with the most at stake, said Pat Frost, director of the Trinity Resource Conservation District in California and Joyce Anderson, district ranger in the Trinity Management Unit of the Shasta-Trinity National Forest. Together, Frost and Anderson and their organizations worked to organize locally led fire planning efforts. They also turned to 13 volunteer fire departments in the area to determine risk. Trinity RCD facilitated the efforts, which resulted in prioritized project areas and landowner connections to funding sources to accomplish the projects.

The Bitter Root Resource Conservation and Development Area, Inc., which hosted the Missoula conference, received a grant from the USDA Forest Service - State & Private Forestry to facilitate development of a plan for communities in the Bitter Root Valley.

Diverse groups of valley residents met repeatedly during the winter of 2002-2003 to brainstorm and prioritize potential actions to address the most pressing issues that affect the Valley's ability to reduce the risks associated with wildland fires.

The resulting CWPP is intended to be an adaptive document; one that will be updated

annually or as needed.

For more information, contact RC&D Coordinator Kit Sutherland at bitterrootcd@cybernet1.com or visit <http://www.bitterrootfireplan.org/>.

Emergency Watershed Program

"We don't rehabilitate areas. We stabilize them," said Gene Backhaus, Natural Resources Conservation Service resource conservationist in the Colorado State Office. Local cooperation is a key to moving rapidly on stabilization efforts following fires, he said. Citing the power of partnerships protecting the Upper South Platte River watershed near Denver, he said: "We were working together all along, so it was very easy to work together" after the fire.

Lessons learned from Colorado's post-fire stabilization efforts show that straw mulch plays an important role. "It appears that straw mulch impeding movement to streams is the best treatment," said Backhaus.

Restoration Forestry

The authors of "Mimicking Nature's Fire, Restoring Fire-Prone Forests in the West" said this approach to forest management would benefit from more biomass utilization. Stephen F. Arno and Carl Fielder explained that restoration forestry seeks to mimic historic impacts of stand replacement fires through a combination of mechanical treatments and prescribed and natural fire. "The focus is on what to leave, not what to cut," said Arno. "There's a lot of garbage in these forests. We've got to get that junk out of the woods, and if we could use it as biomass, that would be just great."

Restoration forestry can also accomplish other management goals, including enhancing wildlife habitat and preventing insect depredation. They cited successful work in the Eagle Lake Ranger District of Lassen National Forest in California, where conifer thinning helped to reintroduce aspen, a tree species crucial as a wildlife food source. At Banff National Park, restoration efforts focus on treating fire-dependent stands of lodgepole pines to prevent pine beetle infestations.

Broaden Your Partnerships

The best local partnerships are broad ones, said Carol Ekarius, director of the

Coalition for the Upper South Platte watershed council in Colorado.

One key was to encourage environmental groups to become members of CUSP. "The environmental community is not going to help if you don't bring them to the table."

She noted that few of the area's forest health projects, including fire salvage operations, have been challenged by environmental groups "because they are at the table."

Disciples needed

Biomass utilization's time is at hand, said David A. Dodd, president of DADCO Consulting, an economic consulting and advisory firm based in Shreveport, Louisiana.

"In the northeast this winter, they're predicting \$1,000 a month for heating bills." Biomass utilization can reduce dependence on nonrenewable resources and boost local economies, he said. "Your time is now. This is an opportunity for you. You must get out and spread the word."

Creative utilization in Wyoming

Larry Hicks, natural resource coordinator at the Little Snake River Conservation District in Wyoming and Scott Armentrout of the Medicine Bow National Forest discussed their joint efforts to battle hazardous fuels in the Medicine Bow National Forest under a Forest Service Region 2 Stewardship Contract.

Hicks noted that coal is abundant in Wyoming, making power production from woody biomass infeasible. The district has turned to creative solutions for biomass utilization that include posts, poles, Christmas trees, ornamental trees, commercial timber, house logs and firewood.

Under the contract, the district's responsibilities included sanitation/salvage and understory removal, fir removal, aspen enhancement and spruce and pine beetle treatments.

The partnership is improving forest health, yielding contract cost savings to the National Forest and providing jobs in the Little Snake River Valley.

District Ranger Armentrout said partnering with the district is helping to address multiple resource challenges in the region. Those challenges include hazardous fuels, vegetative diversity, development and sprawl, and insect epidemics.



Fuels for Schools: Let's Get to Work

Community members filled rows of folding chairs in the Thompson Falls Junior High School gymnasium in Montana last month. The junior high band played patriotic songs. Presentations by state and local officials echoed in the old gym, and there were refreshments for all. The community was celebrating the ribbon cutting for the school's new wood-fired boiler.

Thompson Falls, in the heart of heavily forested western Montana, is the latest in a growing list of communities replacing old boilers with wood-fired units that burn chips from forest thinning operations and other sources, boosting local economies, cutting fuel costs and reducing dependence on costly nonrenewable fuels.

For the students gathered in the gymnasium, the Fuels for Schools project meant "one added teacher," noted Superintendent Jerry Pauli. That's because the project is anticipated to save \$60,000 a year in fuel costs. After loan payments in the first year, the district expects to be \$30,000 ahead.

The \$455,000 system was made possible because of a Fuels for Schools partnership. USDA Forest Service Regions 1 and 4 have been national leaders in Fuels for Schools efforts. In Montana, the Forest Service is joined by a partner program in the Department of Natural Resources and Conservation and by resource conservation and development councils.

Montana now has five biomass-heated schools. Another six are under way in the state, and the states of Idaho, Nevada, North Dakota and Utah are building their own success stories.

The Thompson Falls project is an example of public and private interests coming together. A Forest Service grant of \$225,000 was provided through the Northwest Regional RC&D. A \$230,000 loan from First State Bank of Thompson Falls provided key funding. The school district contributed \$25,000 for paving and a loader and a local industry helps to guarantee a supply of wood chips.

'Economic no-brainer'

The Thompson Falls story is one of several demonstration projects. The goal is to move from demonstration to acceptance with the private sector eventually taking over funding, said Dave Atkins, Forest Service Fuels for Schools manager. Atkins

is based in Region 1, Montana and North Dakota, but his work also encompasses promoting the program in Region 4, which includes Idaho, Nevada and Utah.

"One of the things we like with schools is they are the heart of a lot of activities. They provide built-in education and marketing tools," Atkins said. "In our grants to schools, there's a requirement that they include education on biomass and forest health in their curriculum. This becomes a prime opportunity for helping make people more aware of this as tool to help schools as well as forest landowners."

Fuels for Schools also fits nicely into a broader effort to heat schools, hospitals, prisons and other government buildings with wood from forest thinnings or wood waste products. In addition to providing big savings on heating costs, these systems can address concerns about transportation costs in the utilization of biomass. Buildings located close to forest-thinning operations serve as local sources for biomass utilization.

The potential is national in scope. Vermont has about 30 schools heated with biomass. Tim Maker, executive director of the Vermont-based Biomass Energy Resource Center, has provided consulting expertise to Fuels for Schools projects in the West.

"The benefits are local jobs, keeping local dollars at home, reducing energy costs and increasing independence from global energy supplies," Maker told participants at the "When You Get Back Home"

conference in Missoula. "Wood is pretty close to being an economic no-brainer," Maker said. "Wood is here, the technology is available and there are hundreds of examples in the U.S."

Other possibilities, too

While schools offer highly visible environments for wood-fired heating systems, other government building offer great potential, said Nick Salmon of CTA Architects. "Hospitals and prisons, which operate 24-7, have high viability," he said. Local fuel resource inventories will help determine project viability, he said. Keeping project costs down is essential, he said.

A key question to ask is whether boiler replacement is necessary, added Chris Allen of Chris Allen and Associates, a consulting firm. If the answer is yes, a wood-fired boiler can be an investment in the local economy, he said.

While wood-fired burners are good alternatives to burning slash piles, there are air quality considerations, said Bob Habeck, air program manager in the Montana Department of Environmental Quality. Major considerations are particulate matter and carbon dioxide.

Wood boilers are point sources for air quality considerations, he noted, while forest fires and burning slash piles aren't considered in that category.

Participants in the Missoula conference also had the opportunity to visit Darby School, the first Fuels for Schools pilot.



Community members and project partners from around the state and nation turned out for a ribbon-cutting ceremony celebrating the new wood-fired school boiler installed at Thompson Falls Junior High School in Montana. Here, the junior high band performs after speech-making on stage.