EVERGREEN

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"We Can Start Today"

Ben and Dale Flanagan
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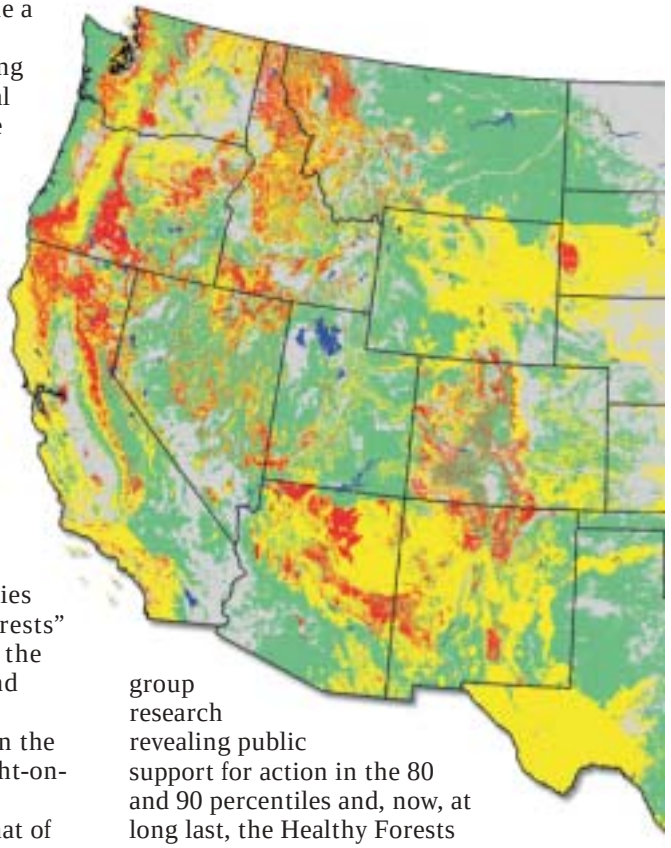
A Call To Arms

In this special report we issue a call to arms. It is time for the country to get serious about caring for its diseased and dying national forests. Every scientific report we can find, all of them written by fire ecologists who know the West's fire dependent ecosystems very well, urges immediate implementation of a large-scale, long range thinning program designed to restore a more natural range of disturbance patterns in fire dependent forests. Minus such a program, millions of acres of treasured national forest will likely be reduced to ash and ruin over the next two decades. Pecking around the edges, thinning near communities under the guise of "restoring forests" is tantamount to whistling past the graveyard. It may look and sound good, but it solves nothing.

All of the tools needed to begin the rescue work are in place now: light-on-the-land logging systems whose ground pressures are less than that of a walking human, high speed, high recovery milling technologies capable of turning trees no more than six inches in diameter into high performance engineered wood products for burgeoning homebuilding markets, miniature power plants, fueled by woody debris, capable of heating, lighting and cooling individual buildings, third-party forest certification systems that provide reliable tools for monitoring environmental performance in forestry operations, a wealth of peer-reviewed science that supports the need for thinning [and describes the likely outcome in detail], focus group research revealing public support for action in the 80 and 90 percentiles and, now, at long last, the Healthy Forests Restoration Act, signed into law by the President last December.



As we declare in our cover story, "We can start today!"

The unlikely thread that runs through our story, and ties it together, is a machine: the Timberjack-John Deere biomass bundler, an odd looking marriage of state-of-the-art harvesting technology and round-bailing hardware that has been around on farms for a half-century. You can be forgiven for thinking it is a marriage of Deere's legendary prowess in farm machinery and Timberjack's widely admired timber harvesting systems, but it is not. Timberjack developed the technology several years ago for tandem use with its cut-to-length harvesting systems, principally in Nordic countries, where forest plantations and biomass power plants are both commonplace. Deere bought Timberjack about two years ago for $600 million, in a deal that seems to have benefited both companies mightily.

We first saw the bundler working in the Panhandle National Forest in northern Idaho about a year ago. It was being field-tested by the Forest Service in partnership with Timberjack-Deere. We were so impressed by what we saw that we followed it back to Montana where it was put through its paces in a private lands thinning project designed to protect nearby homes from wildfire. In all, the Forest Service tested the bundler on seven different sites last summer, most of them in the fire-ravaged West.

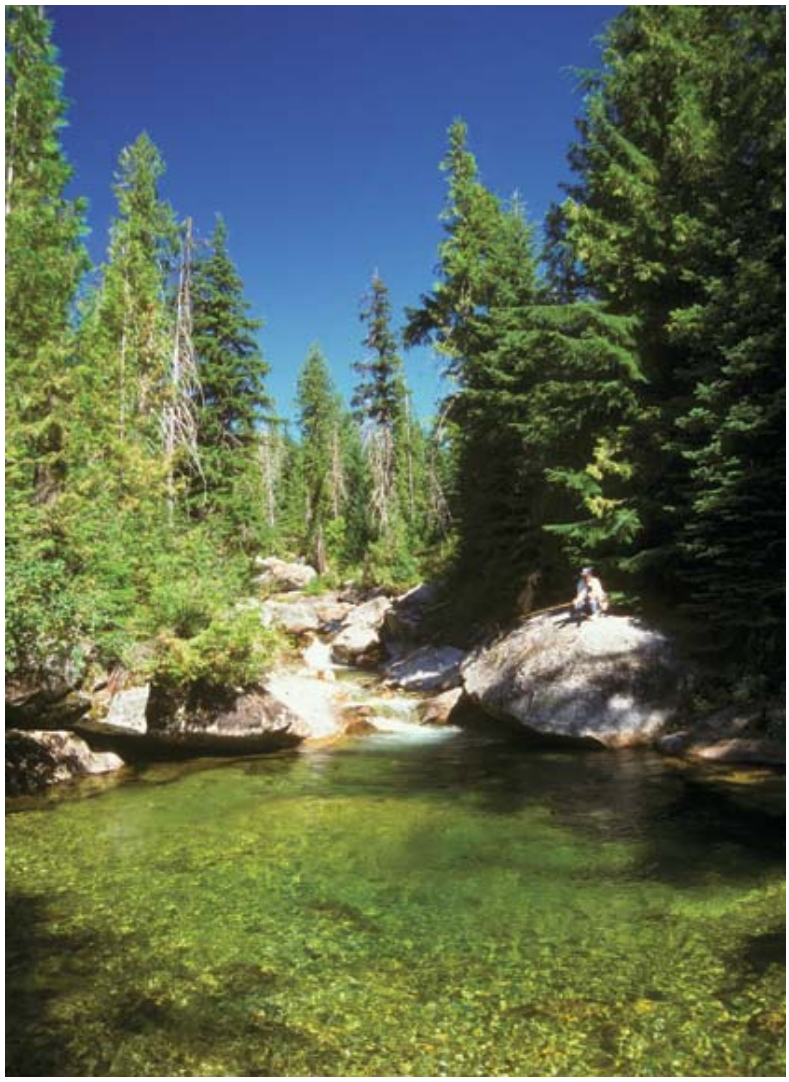
What made the bundler's performance all the more impressive was that it is not designed to be used in the steep and often unpredictable environs in which the Forest Service tested it. It is designed to work in forest plantations where the terrain is flat and the trees are evenly spaced. In such a configuration, the bundler follows a cut-to-length harvester up one row of trees and down the next, bailing limbs and treetops as it goes. Despite this misapplication, observers say the bundler performed well.

The biomass bundler is important

The map above, developed by the Fire Modeling Institute and the U.S. Forest Service Fire Sciences Laboratory at Missoula, Montana, illustrates the wildfire risk throughout the 11 western states. Red areas are in Condition Class 3, meaning the risk of losing one or more ecosystem components is high. Yellow areas are in Condition Class 2, meaning the risk of ecosystem loss is moderate. Green areas are in Condition Class 1, meaning the risk of loss is low. Across the West, some 67 million acres are in Condition Class 2 or 3. 28 million acres are in Condition Class 3. For more information log on to www.fs.fed.us/fire/fuelman/curcond2000/maps/cc2000.pdf (**Cover photo:** Stephanie Steck, Northern Lights, Bigfork, MT)

for actual and symbolic reasons. In an actual sense, it offers land managers yet another impressive tool for removing the *least valuable* material from at-risk forests, but unlike other mechanical harvesting systems which produce logs for sawmills or pulp mills, it packages its final product in bales ready for delivery to power plants. Just *two bales*, averaging about 1,000 pounds apiece, yield enough electric energy to run an average home for a month.

Symbolically, the bundler represents the creative spirit of our advancing civilization, our ability to design and build machines capable of successfully completing almost every task we can envision. Although it is not yet commercially available in North America, 30 bundlers are operating worldwide including nine in Finland, three in Spain two in Sweden, one in Italy and another in Switzerland. We found three companies in Idaho and Montana willing to buy bundlers, *but only if the federal government will assure them of enough work to cover its $600,000 price tag.*



Jim Petersen

Clean air, clean water, abundant fish and wildlife habitat and a wealth of year-round recreation opportunity: these are the forest values Americans endorse most frequently in survey after survey. Small wonder then that public support for the Bush Administration's forest health agenda runs in the 80–90% range. Faced with the an unprecedented wildfire crisis the nation is rejecting failed preservationist forest policies that consign treasured national forests to the horrors of catastrophic wildfire.

But our story is far more than a story about a machine. As our cover photograph suggests, this is mainly a story about people who work in forests and are capable of starting today. Dale Flanagan and his son, Ben, who appear on our cover, are but two of the West's highly skilled, technologically advanced loggers. The Flanagans work mainly on private lands in western Montana, but the kind of work they do is precisely what the federal government should be doing on public lands under the aegis of the Healthy Forests Restoration Act: thinning dense forests to reduce the risk of wildfire while also increasing forest growth and species diversity.

To get at the heart of this story we traveled the back roads of western Montana, northern Idaho and eastern Washington for several weeks, talking with loggers, mill owners, Forest Service and Bureau of Land Management personnel, anyone willing to visit with us about what they think it is going to take to implement the Bush Administration's healthy forests agenda on physical scales that are large enough to be ecologically and economically meaningful.

The Forest Service estimates that some 67 million acres of federal forestland in the West need treatment, 28 million immediately. But the agency's forestry culture was so damaged by Al Gore during the Clinton years that it is still having trouble moving beyond the pilot project stage. Such projects, which are designed to show the public what is possible, and to encourage local collaboration, usually along well-traveled routes near communities, do indeed build knowledge and good will, but they do nothing to reduce the fiery threat that looms just beyond the so-called wildland-urban interface. We will never get ahead of this crisis if we persist in our 10-acres-at-a-time incubator approach. We have to ramp up now, ecologically and economically.

You will likely need road maps of Montana, Washington and Idaho to find some of the communities we visited in the course of our investigation: Colville, Republic and Usk in Washington; Plummer, Chilco, St. Maries, Moyie Springs, Laclede and Bonners Ferry in Idaho; and Columbia Falls, Seeley Lake, Eureka, Missoula and Lolo in western Montana. We chose these communities because they are home to family owned sawmills that are key to successful implementation of the Healthy Forests Restoration Act in the northern Rockies. If these surviving mills run out of logs before the Act is fully implemented, you can forget about rescuing the West's national forests from wildfire. There won't be anyone left to do the work: no loggers to remove dead and dying trees and no mills to process and market still useable wood fiber scientists tell us must be removed from at risk forests if ecological collapse is to be avoided.

From two earlier *Evergreen* reports, "The New Pioneers" and "Time Is Running Out For Southwest Forests" you already know that, save for two struggling New Mexico sawmills [owned by the Mescalero Apache Tribe], and one in Arizona [owned by the White Mountain Apache Tribe] there is no milling infrastructure left

in the Southwest. The Forest Service is shopping for bidders for a 10-year 150,000-acre stewardship contract on Arizona's Apache-Sitgreaves National Forest, not far from where firefighters finally stopped the 2002 Rodeo-Chediski Fire. The contract could be the salvation of the White Mountain mill, which the tribe would like to modernize, but it is too distant from Mescalero mills to be much help to them. Both Louisiana-Pacific and unrelated Savannah Pacific are also rumored to be considering investments in the Southwest: L-P in a panel operation of some sort and SP in a sawmill that would utilize a patented gluing process that hardens soft pine. But minus federal assurances of stable and adequate fiber supplies the investments are unlikely to materialize. "We can't invest in a new mill without knowing where the wood will come from," White Mountain chief Dallas Massey told us last year. "So while we see a great potential we don't see much certainty."

Jim Petersen

Jim Petersen

Jim Petersen

Timberjack-John Deere's biomass bundler at work on a Forest Service test site in the Panhandle National Forest near Bonners Ferry, Idaho in May 2003: note the complete absence of soil disturbance. [Bottom left] The bundler assembles a biomass bale on private forestland in Montana's Bitterroot Valley in July of 2003. Smoke from a nearby forest fire nearly obliterated the sun the morning this photograph was taken, giving it a yellowish tint. [Bottom right] After shredding, biomass bales are ready to burn.

Regular *Evergreen* readers will quickly discern that this story dovetails nicely with our last issue, "Giant Minds, Giant Ideas," which profiled the U.S. Forest Service's venerable Forest Products Laboratory at Madison, Wisconsin.
If you haven't read the story, you'll find it posted on our website, www.evergreenmagazine.org. You may be surprised to learn that all of the technologically advanced structural and panel products used in home construction today began as basic research at the lab, as did the impressive array of paper-based packaging materials we use daily. But in recent years the lab has turned its attention to one of the most vexing environmental problems our society has faced since forest conservation and wood science became a single cause in 1887: how to utilize countless millions of small diameter trees—and millions more tons of woody biomass—that are choking the life out of forests, both east and west of the Mississippi.

We want to thank those who gave so generously of their time during this investigation: Duane Vaagen, Josh Anderson and Bob Heater, Vaagen Brothers Lumber Company, Colville, Washington; Steve and Sam Hermann, Ponderay Valley Fiber, Usk, Washington; Bill Hermann, Hermann Brothers Logging Company, Port Angeles, Washington; Dave Wellman, Bearhaven Consulting, Maple Valley, Washington; Art DuFault, Bureau of Land Management, Laclede, Idaho; Bob Boeh, Riley Creek Lumber Company, Laclede; Barry Wynsma, U.S. Forest Service, Bonners Ferry, Idaho; Todd Brinkmeyer and Tim Rickard, Plummer Forest Products, Plummer, Idaho; Jim Riley, Intermountain Forestry Association, Coeur d'Alene, Idaho; Bob Rummer, U.S. Forest Service, Auburn, Alabama; John Manz, Registered Professional Forester, Accredited Logging Professional and Evergreen Foundation board member, Seeley Lake, Montana; Tim Love, U.S. Forest Service, Seeley Lake; Gordi Sanders, Pyramid Lumber Company, Seeley Lake; Ron Buentemeier, Stoltze Land and Lumber Company, Columbia Falls, Montana; Jim Hurst, Owens & Hurst Lumber Company, Eureka, Montana; Dale Flanagan, Flanagan's Quality Contracting, Missoula, Montana; John Waverek, U.S. Forest Service, Missoula; Paul and Dick Rossignol Jr., Lolo, Montana; Carl Fiedler, research associate professor, University of Montana School of Forestry, Missoula and Charles Keegan III, Director, Forest Industry Research, University of Montana Bureau of Business Research, Missoula; Mikko Rysa, Don Switzer and Clark Johnson, John Deere, Moline, Illinois.

We also want to thank those whose generous contributions made this report possible: Timberjack-John Deere, the Paul Bunyan Foundation, the Oregon Logging Conference, the Jeld-Wen Foundation and the Lematta Foundation. We appreciate their ongoing support for our research and educational outreach more than words can say.

Onward we go,
Jim Petersen, Publisher

"There is a time and a place for use of weapons. You should not have a favorite weapon. To become over-familiar with one weapon is as much a fault as to not know it sufficiently well. You should not copy others, but use weapons that you can handle properly. It is bad for commanders and troopers to have likes and dislikes. These are things you must learn thoroughly."

Miyamoto Musashi, samurai warrior and kendo fighter, from his treatise, Go Rin No Sho, May 12, 1645, Victor Harris translation, quoted from a speech by John Manz, ìCut-To-Length vs. Conventional Harvesting,î September 21, 1994

We Can Start Today!

An essay by Jim Petersen

John Manz may be the only forester on earth who is both a student and admirer of Japanese samurai warrior and kendo fighter Miyamoto Musashi [See quote top of page]. But no one who knows the former Marine Corps fighter pilot well is surprised that he would use Musashi's writings to illustrate the need for loggers and mill owners to think in the broadest possible terms about the tools of their trade and the very nature of their customer relationships.

Mr. Manz, who was Weyerhaeuser's director of applied technology for woods operations until his retirement three years ago, is a hot item on the lecture circuit today, not just because he is a brilliant strategic thinker but, equally, because the West's loggers and mill owners are doing a lot of soul searching these days.

In Mr. Manz, who was recently named a Distinguished Alumnus by the University of Montana School of Forestry and Conservation, they have found someone who is not only capable of thinking outside the box but, more usefully, someone who is capable of helping them find their way out of the financial box many found themselves in after the federal timber sale program collapsed in the mid-1990s.

It is no secret that the federal government is anxious to establish a new working relationship with the West's surviving mills. Without their help there is zero chance the healthy forests agenda envisioned by Congress and the Bush Administration will ever get off the ground. But the region's major forest products manufacturers don't see much future in helping the government restart a timber sale program that might well undermine their own future profitability, to the detriment of already restless shareholders. Only the West's family-owned sawmilling and logging companies, all privately held, are thinking what seemed unthinkable before Congress approved the Healthy Forests Restoration Act: maybe it is time to kiss and make up.

"We will either learn to deal with small diameter trees or we will watch them burn," the ever-pragmatic Mr. Manz said during a lecture at last month's

Aftermath of the 5,000 acre Togo Mountain Fire that burned west of Colville, Washington in August, 2003. Thanks to prompt work by the Colville National Forest staff, salvage work began here last January. Vaagen Brothers Lumber Co. bought the sale for $1.2 million. The harvest yielded about ten million board feet of trees 8 to 12 inches in diameter.

Intermountain Logging Conference in Spokane, Washington. "Using technology we can make fine wood products out of every tree species we have in western forests, including lodgepole, which many still consider a junk species, when in fact it performs very well in compression tests, which means you can make great studs from it."

Mr. Manz' take it or leave it message is both timely and straightforward: change is never easy, but the future cannot and will not be held back. And in his view, the future for the West's sawmills and loggers lies in leading the public into a new environmental era characterized by healthier, more fire resistant, actively managed forests.

"The appropriate use of harvesting and milling technologies is the key to successful implementation of the Healthy Forests Restoration Act," Mr. Manz said in a recent interview. "We can draw on a world full of technologies, but no one technology will work best in every situation, which is why it is vital that federal land management decision-making be driven down to the local level where it once resided. Only then will management policies and strategies reflect local forest conditions and community needs."

Jim Petersen

Jim Petersen

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Dale Flanagan's Timberjack harvester processes a tree in a thinning on private land just off Highway 12 west of Lolo, Montana. Mr. Flanagan has more than $1 million invested in a light-on-the-land cut-to-length [CTL] harvesting system. Most of his customers are Tree Farmers who are willing to pay more for what they perceive to be the higher quality work CTL technology yields. [Bottom left] The $90,000 processing head on his harvester automatically cuts, de-limbs, measures and cuts the tree into optimum log lengths, all in one motion. [Bottom right] Mr. Flanagan's son, Ben, eases his loaded log forwarder down a narrow pathway. Note the absence of soil disturbance.

To illustrate the points he makes in his lecture, Mr. Manz often quotes from an impressive array of business visionaries including Dr. Gary Hamel of the London Business School, his University of Michigan colleague Dr. C. K. Prahalad, Lee Iacocca, father of the Chrysler minivan, Akio Morita, Sony chairman for many years and, of course, Miyamoto Musashi. He is fond of pointing out that Sony holds a commanding lead in consumer electronics because of its skill in leading customers toward new products conceived and designed by Sony engineers, rather than relying solely on customers for their input, a strategy that Chrysler emulated when it introduced its now legendary minivan. "Lee Iacocca often said that in the ten years the minivan was in development Chrysler never received a single letter from a housewife asking that the company invent one," Mr. Manz observes. "To the skeptics, this absence of directed customer input meant the minivan would fail. Obviously, Chrysler thought otherwise. The lesson here is that being exclusively customer-driven leaves a lot to be desired. A better approach would be to focus on the customer, then use our knowledge and expertise to lead them in new directions. Where the West's forests are concerned, the public wants change but it does not know what is possible. It is up to the surviving industry to provide leadership by communicating the possibilities."

And so the inevitable question: is the Timberjack-John Deere biomass bundler the next Chrysler minivan? It's a stretch, but to the extent that we did not know we needed bundlers anymore than we knew we needed minivans the answer is a qualified yes; the qualification being that the federal government must again demonstrate that it can be a reliable provider of competitively-priced biomass, which means it may have to sell at a loss to rebuild its position in the market.

"The bundler is a very interesting, very tough machine," says Bob Rummer, Project Leader for the Forest Service's forest operations research center at Auburn, Alabama. Mr. Rummer supervised field tests on the machine last summer and is now putting it through its paces in the Southeast. "It performed well, despite the fact that we put it in work situations for which it really wasn't designed."

Mr. Rummer sees the bundler as yet another tool land managers can use where other tools aren't workable, for example in areas where piling and burning biomass would create smoke- related health problems or where burning piles might pose an added fire risk in already tinder dry forests.

"The bundler is a zero-smoke tool," Mr. Rummer observes. "This gives it a decided edge in some circumstances, but let's be clear here: there are no silver bullets, no one size-fits-all approach that will help us in our efforts to reduce forest density and the risk of wildfire in the West. We have to use every tool in the box."

What may be most surprising about the bundler is that, despite its $600,000 price tag and its higher operating cost, it is cost competitive with other more labor-intensive treatments:

$23–$28 per bone dry ton versus about $42 per ton for piling and burning, including a $12 per ton value assigned to the biomass itself, but *excluding* the avoided cost of million dollar a day wildfires that have become commonplace in the West."

Mr. Rummer is clearly very excited about the possibilities the bundler symbolizes, and he wants very much to continue the field-testing relationship between the Forest Service and Deere. "It gets us away from a 'can't do' mentality and moves us in the direction of proactive planning and problem solving. The machine did everything Deere said it would do, including bale about 20 bales per hour. It's true more conventional logging systems can do similar work for less money but they don't produce ready-for-the-power plant biomass logs."

Proactive planning will indeed be very important, not just where the choice of sophisticated harvesting machines is concerned but, more broadly, in developing robust markets for the wall of wood the Healthy Forests Restoration Act may yield: an estimated 1.493 billion bone-dry ton wood [mainly trees 2–8 inches in diameter] scattered across some 67 million acres of western forestland, including 576 million tons scattered over 28 million acres of ready-to-burn Category 3 forests. Suffice it to say, the nation faces a daunting task.

Jim Petersen

Jim Petersen

Moments after Dale Flanagan processed these logs, son Ben had them loaded on his forwarder for the trip down the hill to the log decks. This thinning yielded pulpwood, veneer logs, timbers, sawlogs, posts, poles and house logs. [Bottom] Aftermath of a campground thinning Mr. Flanagan completed for the Forest Service in Patte Canyon, a heavily used recreation area just south of Missoula. He also thinned a dense stand near a popular ski area overlooking downtown Missoula because the Forest Service feared it might burn, prompting an environmentalist living nearby to ask if the same work could be done next to his home to protect it

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When Dale Flanagan quit college in 1974 he headed for an Alaska logging camp thinking he would spend the rest of his life working in big wood, never dreaming that the day would come when, to stay in a business he loves, he would plunk down more than $1 million on yet to be invented "light on the land" logging technology. But he has. Mr. Flanagan owns and operates a Timberjack harvester with a $90,000 processing head that measures, cuts and de-limbs trees in a single continuous motion. He also owns a forwarder, a strange-looking miniature log truck that loads and transports de-limbed logs from the harvest site to a log landing where self-loading log trucks pick them up for the trip to the mill. The two machines, which Timberjack perfected in Finland, have found a prosperous home in U.S. forests in recent years, in part because of their versatility, but also because they exert less ground pressure [despite their weight] than a walking human, a real plus where soil compaction is a concern, which is most everywhere logging occurs.

"It's expensive technology, but it fits with my land ethic and the needs of our customers," Mr. Flanagan explains. "We're guided by a simple belief that the job people see us do is our signature. I tell my sons we better be proud of the way it looks because we are going to get to look at it for quite a few years."

Most of Mr. Flanagan's customers are private landowners willing to pay more for what they perceive to be the higher quality work he does. And, indeed, he does go to great lengths to please his clientele, among them Paul and Dick Rossignol Jr., sons of the late Dick Rossignol, at one time one of the West's largest logging contractors. The sons inherited commercial timberlands their father bought in the 1950s in the Bitterroot Valley south of Missoula. With Mr. Flanagan's help, they've developed thinning and planting programs designed to restore the ponderosa-larch forests that once dominated their land.

"He does excellent work," Paul Rossignol observes. "And he has the right kind of equipment for the job I want done. We're removing as much white fir as possible because it isn't resistant to fire, and it competes like crazy against the residual ponderosa and larch stands we want to promote. Dale's equipment enables us to recover higher log values from harvested trees. The result is that the work has paid for itself and then some."

The Forest Service's John Waverek also speaks highly of both Mr. Flanagan's work and his land ethic. "He did a very nice job for us on a visually sensitive thinning overlooking Missoula," he says. "We picked him knowing full well that his logging system would produce a cost effective result, but in the end even the skeptics in our office had to admit he'd done a terrific job for us."

But it was not smooth sailing in the beginning. When the thinning project was announced a local environmental group appealed, but the appeal was rejected. Then a neighbor new to the area wrote a letter to the Forest Service expressing a fear that a log truck driver might rape his school age daughter at the bus stop. But after the job was done a retired environmental studies teacher, and frequent logging critic, asked if federal funding might be available to pay for thinning his adjacent home site in the same way.

"We have a big job ahead of us," Mr. Flanagan says, reflecting on public misperceptions and fears about logging, loggers and the Bush Administration's forestry initiatives. "There is so much misunderstanding of who we are and what we do. Fortunately, we have lots of efficient, light-on-the-land tools available. Yes, there are still a few bad apples in the woods that give all of us a bad name, but they won't be around much longer. No one will hire them."

So would Mr. Flanagan add a $600,000 biomass bundler to his million-dollar plus harvesting system if he could keep it busy? "Yes, I probably would if I the work was there, but we still fight the mill owner perception that the operating costs of cut-to-length logging systems are too high to yield competitively priced logs. Everyone wants to be associated with the visually pleasing work these systems do, but not everyone is willing to pay for it."

The cost misperception does not end with technologically advanced logging systems. Taxpayer watchdog groups have joined environmental groups in arguing that restoration forestry is itself too expensive to be undertaken beyond the necessity of fire proofing communities that lie in harm's way. But years of research and field studies by two noted University of Montana scholars, silviculturist Carl Fiedler and economist Charles Keegan III, prove this isn't the case. Restoration forestry can pay its own way, though both men are quick to point out that finding a way to make federal forest restoration pay for itself was not part of their research.

"It simply turns out that if you design treatments to address ecological conditions, restoration will, in many cases, pay for itself, especially if an adequate and relatively diverse industry is present," explains Dr. Keegan.

"But what we were looking for in our research were treatments that addressed the factors that restoration must consider: stand structure and condition and species and age class distribution," Mr. Fiedler adds.

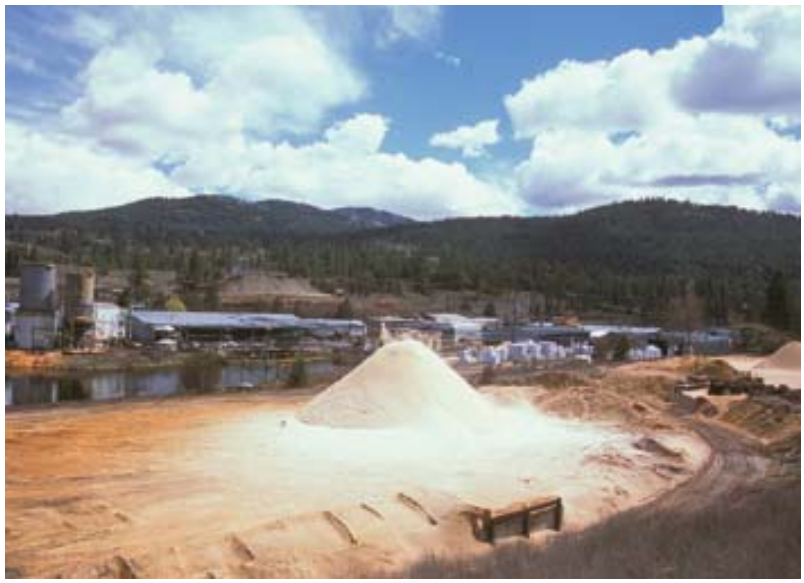
Messrs. Keegan and Fiedler have developed models for forests in New Mexico and Montana that estimate the cost of varying silvicultural treatments. As such, the models do indeed reveal whether or not public subsidy is needed to complete the desired work. They show that, on acres that would benefit most from treatment, comprehensive restoration treatments can pay their own way on about half the identified Montana acres and about one-fourth the New Mexico acres.

"Some have suggested that we threw big trees into the equations to show that some of this work could pay for itself," Dr. Keegan says. "This isn't true. The models are based on doing good ecosystem-based work."

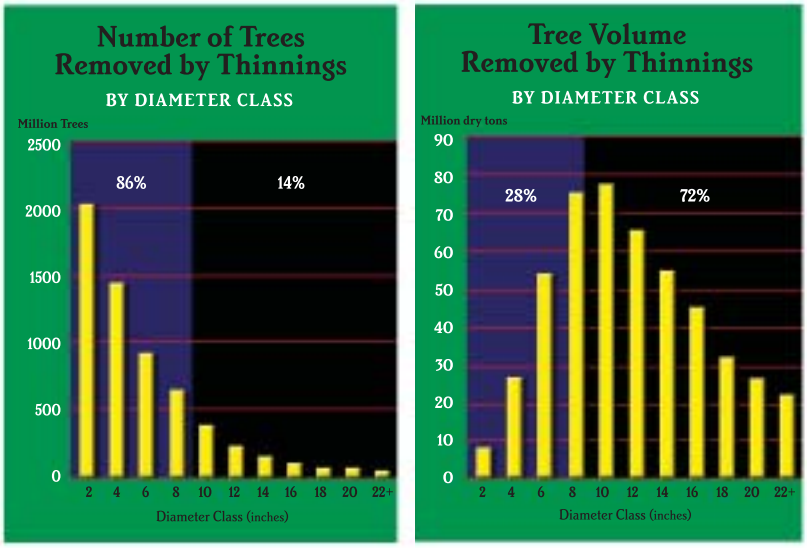
"With these at-risk stands you have to play the hand you are dealt, looking back in time for forest conditions that seemed to sustain themselves, then looking ahead to try to figure out what is possible given the forest we have today," Mr. Fiedler explains.

The two men will soon complete a new a government-funded assessment of milling capacity. "The concern in the Forest Service is that there is insufficient milling capacity in the Intermountain West if restoration work begins in earnest," Dr. Keegan explains. "We hope to answer two questions: What kinds of fiber will be generated from forest treatments and, assuming large scale treatments, is there still sufficient milling capacity to process and market the fiber?"

Developing uses for small diameter trees and biomass, and recruiting infrastructure investments that will run into the billions of dollars, is a huge challenge for federal resource management agencies that, for the most part, no longer enjoy the respect and confidence of mill owners, investors and lenders. But, as Dr. Keegan observes, it is much cheaper for existing mills to add shifts and new technology than it is to build new mills, especially if the builders lack the experience and knowledge that the West's surviving mills have.



Jim Petersen



E.T. Hinchcliffe

Just days after this 2003 photograph was taken time ran out for the Vaagen Brothers Lumber Company mill at Republic, Washington. The mill, which employed about 100 and had an annual payroll of over $3 million ran out of wood, despite its' proximity to both the Colville and Okanogan national forests. [Bottom] These charts, developed by the USFS Forest Products Laboratory, illustrate the number and size of trees that could be removed from Condition Class 2 and 3 forests in the West. 86% of the trees are 2-8 inches in diameter. In all, 28% of the trees would be removed, 72% would remain.

If Duane Vaagen's unbridled enthusiasm is in any way representative of the mindset among the West's surviving mill owners, the Forest Service ought to be a lot more worried about its own ability to meet the public's high hopes for forest restoration, and a lot less worried about whether the survivors will want to reconcile their differences with the beleaguered agency. They will, when fact overcomes speculation.

Mr. Vaagen owns Vaagen Brothers Lumber Company at Colville, Washington, about 90 miles north of Spokane, in the heart of the Colville National Forest, one of the sickest in the entire West. His late father built the family's first mill a few miles east of Colville in the early 1950s. It was moved to its present site on the edge of the downtown business district in the 1970s. Symbolically, the huge lighted gantry crane used to unload log trucks can be seen from anywhere in town, day or night.

"We are definitely a big part of this community and we intend to be in perpetuity," Mr. Vaagen says of his hometown and his commitment to restoration forestry. "Good things are starting to happen, thanks to the more hopeful attitude the Healthy Forest Restoration Act has instilled in our local Forest Service staff. They've really stepped up to the plate."

Indeed they have. Last August a wildfire burned about 5,000 acres on Togo Mountain west of Colville. They completed an environmental assessment by November and sold the sale December 30, after an appeal by environmentalists was rejected because the group missed a court-imposed filing deadline.

"It was amazing to watch," Mr. Vaagen recalls with considerable admiration. "There were Forest Service people working nights and weekends to get the sale sold by year-end. Some even postponed their vacations. We bought the sale for $1.2 million and went to work in the snow the first week in January."

Mr. Vaagen expects the sale to yield between eight and ten million board feet, mainly in trees eight to 12 inches in diameter, enough to run his mill for about eight weeks. "But the numbers don't matter," he insists. "What *does* matter is that wood quality is very high because we got to harvest the trees before they rotted. The Forest Service deserves a lot of credit for staying focused throughout the hysteria."

It's doubtful that anyone has spent more time crunching numbers that tell the restoration story more meaningfully than Mr. Vaagen. "Think about this for a moment," he says, calculator in hand. "It takes 100 truckloads of logs a day to run our mill. That may seem like a lot but it isn't. There are 400,000 acres available for thinning on the Colville National Forest. If you thin just 100 acres a day, and you figure 200 working days in a year, you can thin 20,000 acres a year or 400,000 acres in 20 years. Then you start all over because the acres you worked on 20 years ago need thinning again. You can do this in perpetuity at no cost to taxpayers. Moreover, in the case of Colville, every truckload of logs pumps $1,500 into our local economy, or about $750,000 a day for something that grows back! That's the power of a well managed forest."

But Colville still has a long way to go before it matches Mr. Vaagen's hopes, if it ever does. He currently buys his logs wherever he can find them: from Washington's coastal Olympic Peninsula to Sheridan, Wyoming. Even Canada. "It's okay for nature to burn up a forest," he declares in a rare moment of frustration, "but it is *not* okay for us to implement forest management prescriptions that replicate this area's history of frequent, low intensity fire? The public needs to ask what's wrong with this picture."

Technology has saved Mr. Vaagen's bacon, in this case the Hew Saw, a remarkably fast and efficient sawing technology he first saw in Finland more than 20 years ago. "All of the trees that are harvested in Finland are small, but wood quality is very high, and I liked the appearance of Finland's forests," he recalls. "It wasn't hard to see that there was a place

Jim Petersen

Assessment Area Statistics by State

* Less than 100,000 acres

State	Land Area (million acres)			Treatment Opportunities (million acres)		
	Total	Forestland	Timberland	Timberland	Class 2 + 3	Class 3
AZ	72.7	19.4	3.5	3.1	2.9	1.9
CA	99.8	40.2	17.8	13.4	11.8	5.5
CO	66.4	21.4	11.6	9.5	6.0	2.5
ID	53.0	21.6	16.8	12.1	8.0	3.3
KS	52.4	1.5	1.5	1.3	0.4	0.2
MT	93.2	23.3	19.2	14.3	9.5	3.7
NE	49.2	0.9	0.9	0.7	0.1	*
NV	70.3	10.2	0.4	0.2	0.1	*
NM	77.7	16.7	4.4	3.9	3.3	2.1
ND	44.2	0.7	0.4	0.4	*	*
OR	61.4	29.7	23.8	16.9	12.2	5.6
SD	48.6	1.6	1.5	1.1	0.9	0.6
UT	52.6	15.7	4.7	3.6	1.2	0.1
WA	42.6	21.8	17.3	12.4	8.5	2.5
WY	62.1	11.0	5.7	4.0	1.9	0.4
Total	**946.1**	**235.7**	**129.6**	**96.9**	**66.9**	**28.5**

Class 2 areas need prescribed fire or mechanical treatment to resore ecosystem function
Class 3 areas need mechanical treatemnt proior to using fire as a restorative tool

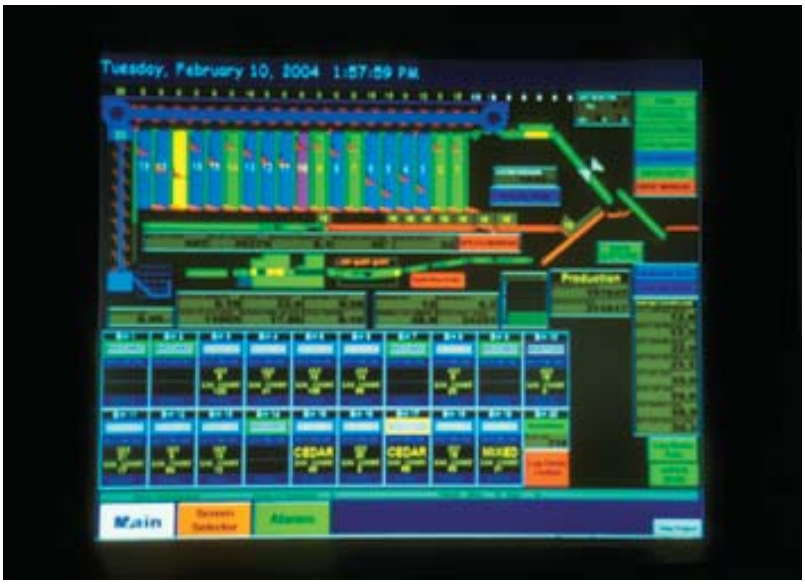
E.T. Hinchcliffe

Duane Vaagen, right, shows Art DuFault through his Colville sawmilling operation. Mr. DuFault recently retired from the Bureau of Land Management, only to be re-hired on a contract that will keep him busy assessing milling infrastructure and forest restoration possibilities in the West. He spent more than 30 years with the Forest Service before joining the BLM. [Bottom] This Forest Service table quantifies restoration opportunities on Condition Class 2 and 3 forests in the West. Condition Class 3 areas require thinning before prescribed fire can be re-introduced. Asterisk indicates less than 100,000 acres.

for it in eastern Washington, so I bought one. Now we're on our second one, and we're thinking about mounting one on a trailer so we can quickly and easily move it from job to job, just like logging equipment."

Through sheer will power and determination Mr. Vaagen has created an excellent market for small diameter timber harvested from forests in the Colville area. What makes his success all the more remarkable is that he sells his lumber into the notoriously picky truss market. Not so many years ago truss makers would have given short shrift to lumber made from small diameter trees, but Mr. Vaagen has demonstrated that tight-ringed larch and fir trees that dominate much of the Interior West are very strong and well suited for use in laminated trusses.

Mr. Vaagen has also embraced cut-to-length logging systems, not because he thinks they are any better than other mechanized harvesting systems, but because they produce a visually pleasing, less environmentally intrusive result that has captured the public's fancy in recent years. "About 30%of our wood comes from cut-to-length operations," he says. "The wood is more expensive, but public and customer satisfaction are central to our company's long term vision."



Jim Petersen


Jim Petersen

This computer monitor tracks every function associated with Ponderay Valley Fiber's Hew Saw at Usk, Washington. The saw, which runs about two times faster than a factory-built Hew Saw, is the brainchild of Steve Hermann, his son Sam and E L Automation. It cuts 12,000 to 17,000 logs per shift: average diameter 5.5 inches. Like all other mill owners in the Interior West, the Hermanns consider it an unexpected bonus when they are able to buy timber from the dying federal forests that typically surround their mills. [Bottom] Logs railed to Usk from the private forests on Washington's Olympic Peninsula.

An hour east of Colville, across the heavily timbered mountain range that divides the Colville and Ponderay valleys lays Usk, a just-off-the-highway town that is so small that the only sign announcing its presence can be easily missed. But in Usk you will find milling technology so wondrous that even Hew Saw engineers from Finland came to pay homage: Ponderay Valley Fiber's computer modified Hew Saw, the sawmilling equivalent of a nitro-fueled dragster. It is a sight to behold.

"Our objective is to run faster and increase log yield," explains an ever-quiet Steve Hermann.

Faster? Ponderay Valley Fiber's Hew Saw, which is monitored by two men from an insulated, climate controlled room, already cuts an astonishing half-million board feet of lumber a day, 12,000 to 17,000 logs per shift! Average diameter: 5.5 inches. Indeed, the logs pass through the enclosed saw so quickly that it is difficult to photograph them. Easier to picture are the 1x4's, 2x3's, 2x4's, 2x6's and 2x8's that the saw spits onto a conveyer that hurries them on to an automatic lumber sorter. But the key to the operation is an automatic log sorter that Mr. Hermann invented and is patenting. Its job is to batch logs by size and keep them evenly spaced on the conveyor that carries them from sorting bins to the saw. The more uniform the log size and closer the spacing between logs, the faster the saw can run: 60-65 logs per minute now.

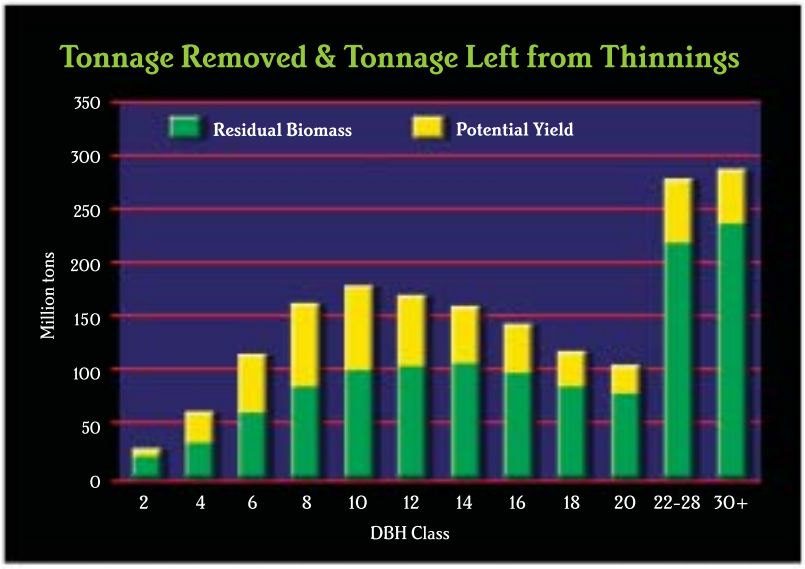
The sorter and the saw are controlled by software that Mr. Hermann, his son Sam and E L Automation developed. It is the combination of the two modifications that separate this Hew Saw from all other Hew Saws in the world. Out of the box, Hew Saws run at about 300 lineal feet per minute, less than one-half the speed of this saw. Equally impressive, the Hermanns have figured out how to match log size and cutting speed in a way that yields uniformly sized wood chips, always a plus when you are trying to get a leg up on competitors in the chaotic and unforgiving global chip market.

Like other mill owners in the Interior West, Mr. Hermann no longer depends on the federal government for logs. "We figure they are a bonus," he explains. "Most of our wood comes from private lands or state lands in Washington and Idaho. We've worked hard to cultivate the timber stand enhancement market, so virtually all of our logs are small and come from thinnings."

Duane Vaagen and Steve Hermann are not the only mill owners in the Interior West cultivating small log markets or catering to small private landowners. Everyone is. And everyone has a technological wrinkle or two up their sleeve: a way to make their mill run a little faster or eek a few more boards from each log. Not one of them believes he will fail. The other guy will. They don't wish each other bad luck, at least not publicly. In fact they often sell logs to one another that are too big or too small for their own operations. But at the end of the day, "If only one of us is to

survive, let it be me, not him." It has been this way in the sawmill game since the industry reached the Pacific Ocean and realized it could march no further. And whether consumers know it or not, they have benefited mightily from this ritual test of wills and skills, for nowhere beyond American shores will they find such an abundance of high quality wood products at such comparatively low prices. Credit the entrepreneurial genius of the West's often-cantankerous, fiercely competitive independent sawmill owners. I would not want to live in a world with only one sawmill in it. Neither should you.

Jim Petersen



E.T. Hinchcliffe

Bob Rummer, project leader for the Forest Service's operations research center at Auburn, Alabama, explains his project to guests touring the Timberjack-John Deere biomass bundler field test conducted last year near Bonners Ferry, Idaho. [Bottom] This Forest Service chart illustrates tons of residual and removable biomass on Category 2 and 3 forests across the West. Thinning on all Category 2 and 3 forests, 67 million acres in all, would yield 1.493 billion tons of bone-dry woody biomass, about 26 percent of current annual U.S. roundwood production if cut over 20 years.

Innovation has been the watchword at Stoltze Land and Lumber Company for a very long time. The mill, based at Columbia Falls, Montana, bought the first mechanical harvester in Montana—and the third in the entire West—in 1969. Over the last five years the company has invested $6 million in small log milling technology. It can now mill trees with five-inch tops, and would buy the technology needed to process three-inch tops if the logs were available.

"Money for investments in technology has never been a problem," Stoltze General Manager Ron Buentemeier says of his relationship with the heirs of F.H. Stoltze, the company's founder. "We looked at Hew Saw in 1988, but could not see the necessary volume coming from nearby federal forests, so we didn't make the investment. We also tried to enter the biomass energy market, but were unsuccessful in our efforts to negotiate a favorable rate with the public utilities commission. We would also buy a biomass bundler if we could find the log volume to support the investment, but we can't."

Of all the surviving mill managers in the West, Mr. Buentemeier is the most pragmatic. He has been around the milling business since his father moved the family west from Minnesota to Columbia Falls in the 1940s. Over the years he has watched the Flathead National Forest timber sale program dwindle to a point of irrelevance.

"Only 28.6% of the Flathead National Forest is still available for management," says the always-precise Mr. Buentemeier. "The other 71.4% is off the table, set aside in no-management reserves that are, in essence, consigned to wildfire. On the *available* land base, 41 truckloads of logs grow daily and 36 more loads die, 77 loads in all. To get ahead of our stand density problem we need to be harvesting *at least* 77 loads daily. But we aren't. We are harvesting 10.9 loads. 67.9 loads per day wait for wildfire. You tell me, is the Forest Service protecting the public's natural resources?"

Apart from the daily struggle to find logs to feed the mill, what frustrates Mr. Buentemeier the most is the fact that all of the woods and milling technologies needed to launch the large scale, long-term restoration project Congress mandated are in place. "We could go to work on this problem tomorrow," he says, "but the Forest Service seems to be stuck in its same old rut. I fear the system is broken."

Mr. Buentemeier is far from alone in his fear. The main reason so little private investment capital has yet to flow toward forest restoration infrastructure is that, while every mill owner *wants* to believe better days lie ahead few, if any, do in fact think the Forest Service and the Bureau of Land Management still possess the personnel needed to fully implement the Healthy Forests Restoration Act. So great is their skepticism that there is not yet any talk about adding shifts [a bell weather sign] except to accommodate a currently red hot lumber market.

"I don't want to string my employees along or give them reason for new hope," one mill owner said privately. "When I see the federal government get serious I'll get serious. The ball is in their court."

But there are signs, if only intermittent, that the Forest Service and Bureau of Land Management are awakening to their new realities. Of the bright spots, none shines brighter than the Clearwater Stewardship Project, a brilliantly conceived joint venture involving the Lolo National Forest, Pyramid Lumber Company and a quite diverse coalition of community interests that supported the project near Seeley Lake, at the southern tip of Montana's spectacular Swan Valley.

"It was a terrific project," says Gordi Sanders, resource manager for Pyramid Lumber Company, successful bidder on the project. "We didn't make any money but we kept our employees and local logging contractors working, and we learned that we had a lot more in common with our diverse community than any of us thought. I have nothing but praise for the Forest Service for the leadership they provided at all levels, and for designing a process that was so transparent anyone with an interest could follow it."

From Mr. Sanders' vantage point, stewardship contracting *is* the future for mills like Pyramid, and he is hopeful the project's success will inspire replica projects in other communities and on other national forests across the Interior West.

"Like most family-owned mills, Pyramid doesn't own timberland," Mr. Sanders explains. "But we are surrounded by federal forests that need thinning if catastrophic wildfire is to be avoided. It is in our best interest to learn how to work with others who have very different points of view where forests and forestry are concerned. We have found common ground in our mutual interest in achieving community and ecosystem health. We have agreed that a healthy forest and a healthy community go hand in hand."

Jim Petersen

Jim Petersen

Seeley Lake District Ranger, Tim Love, beside a spectacular Swan Valley overlook that was constructed as part of the Clearwater Stewardship project. The project, a partnership between the Forest Service and family-owned Pyramid Lumber Company, enjoyed wide community support. [Bottom] The aftermath of a thinning and fuels management project just down the road from Pyramid's mill. Because it is so aesthetically appealing, many believe it was part of the stewardship project, but it was a standard timber sale designed to protect aging western larch trees that grace the back side of Seeley Lake.

The "goods for services" approach that is the basis for stewardship contracting remains controversial with some environmentalists, but it certainly worked well at Seeley Lake. Pyramid got the timber from 600 acres it thinned, mainly diseased lodgepole, larch and Douglas fir, and the Forest Service got 18 new vault toilets in nearby campgrounds, a new concrete bridge, some new culverts, a spectacular new roadside vista with a sweeping view of the Swan Range, an interpretive center, many miles of road improvements and some campground improvements. Pyramid's contractors even put several miles of road to bed to help protect the area's growing grizzly bear population.

Several environmental groups, including the Missoula-based Ecology Center and the Alliance for the Wild Rockies, appealed the project but none sued to stop it, a fact that surprised many, but apparently not Mr. Sanders. "I think most environmental groups are resigned to the fact that stewardship contracting is here to stay. They know that restoration forestry enjoys very strong public support, and that zero cut is a non-starter with people who understand that thinning programs yield huge environmental benefits. From past experience, the timber industry has learned that when it gets sideways with the public it loses. Environmentalists are now learning the same lesson."

Maybe so, but the Clearwater project is a howling success for yet another infinitely more important reason. "We obeyed the law, used the stewardship tool the way it was intended to be used, involved every special interest group in the area and produced a product that I think the public can be very proud of," observes District Ranger, Tim Love. It is very hard to argue against this approach, environmentally, aesthetically or economically."

John Manz is a member of Mr. Love's handpicked monitoring committee. It is a role for which he is eminently suited, not just because he is a fine forester and systems analyst, but also because Seeley Lake is home now. He and his wife, Luci, a Montana native, settled there after he retired from Weyerhaeuser.

"The potential for stewardship contracting is huge," Mr. Manz observes. "But it signifies change and change is always painful. We don't know if we are watching a sunrise or the sunset. As Miyamoto Musashi instructed in 1645, we must master all of the disciplines that lead to success. We must be patient, good listeners, competent decision makers, risk management oriented, financially prudent, careful negotiators and customer focused. Above all, we must study hard and practice diligently to ensure that we know how to use all of the technologies, so that we are never vulnerable to the risks inherent in having only one sword, because in a one-sword world I guarantee that the first picture we see will be a sunset, and not the sunrise it truly was."

The Sun Is Rising

"In the future, two kinds of professionals will work in the public's forests: surgeons and garbage collectors.

The surgeons will be the forest caretakers. It will be their job to remove dead and dying trees, to thin youthful forests in ways that improve stand quality and resiliency, sustain wildlife habitat and increase plant diversity while also reducing the risk of wildfire or insect and disease infestations.

The garbage collectors will gather and transport the lowest quality wood fiber, probably to biomass plants and, further in the future, other facilities that will transform seeming worthless wood fiber into an impressive array of cellulose-based chemicals that will gradually replace plastics and other air polluting materials made from fossil fuels.'

Jim Petersen, "Where Do We Go From Here," a speech, Intermountain Logging Conference, Spokane, Washington, April 6, 2004, adapted from an interview with John Manz, Clearwater Stewardship Monitoring Committee and Evergreen Foundation board member

We live in exciting times.

Since we published our last issue Congress passed the Healthy Forests Restoration Act by overwhelming bipartisan majorities in both the House and Senate.

With satisfaction written all over his face, President Bush signed the bill into law in a ceremony in the old Agricultural Auditorium Dec. 3, 2003.

Jim Petersen

Now the long process of righting many environmental and cultural wrongs can begin. Rural western communities reduced to wreckage by Clinton-Gore environmental policies have hope.

By a quite wide margin, the public has rejected the Sierra Club's "Zero Cut" campaign in favor of active forest management. Moreover, focus group work completed last month reveals that catastrophic wildfire *did not* fall off the public's radar screen last winter as it has in winter's past. Support for forest restoration is still riding in the 70 and 80 percentiles, a fact that astonishes even experienced pollsters who track everything from wars to the economy and health care.

Many environmentalists are now on our side too. After years of doom saying, they seem to have grown tired of their own dreary message. Yes, there are still radicals out there, but they are becoming increasingly irrelevant. A public fed up with their lies and deceit, and the real damage they have done to both our environment and our rural economies, will soon toss them in history's ashbin. Good riddance.

Now it is time to get to work. We have communities and forests to heal and bridges of common understanding to build. It is a good sign that those who are meeting in the middle seem to agree that healthy forests and healthy communities go hand in hand. They always have. But this is going to take time, and it will not always be smooth sailing. Still, there are clear signs the Forest Service and Bureau of Land Management are taking seriously the public's strong belief that today's unnatural wildfires constitute a grave danger to communities, forests and human life. We want to publicly acknowledge their good work—and thank them for it.

We want to thank the many groups that worked in support of the Healthy Forests Restoration Act. Among them: the Boone & Crockett Club, the Ruffed Grouse Society, Safari Club, the National Wild Turkey Federation, the Mississippi Wildlife Foundation, the National Rifle Association, the National Association of Forest Service Retirees; the Farm Bureau and its affiliates, the Coalition of Arizona and New Mexico Counties, the Black Hills Multiple Use Association, Oregonians for Food and Shelter, the American Land Rights Association, Women in Timber chapters across the West, the Alliance for America, the National Forest Counties and Schools Coalition and its affiliate groups, the Pulp & Paper Workers Resource Council and their affiliate unions, the American Forest Resource Council, Environmental Economic Communities Organization and its affiliates, and Communities for a Great Northwest.

We also want to thank the surgeons and garbage collectors—those intrepid men and women who are laying their own money on the line, investing in woods and milling technologies that are key to restoration of the West's forests and rangelands. Without their faith and vision, restoration forestry will remain a distant dream. But ever so slowly the dream is coming into full view—and the sun is rising.

The Evergreen Foundation

An Interview with John Deere's Mikko Rysa

Editor's Note: In April, Evergreen sat down with Mikko Rysa for a wide ranging interview concerning John Deere's Timberjack research and development program. Mr. Rysa is Vice President, Worldwide Forestry Sales and Marketing for Deere's Worldwide Construction and Forestry Division. He was chairman of the board of Timberjack when Deere acquired it for $600 million in 2000. Mr. Rysa is a graduate of the Helsinki School of Economics and holds a Master of Forestry Degree from Helsinki University. He is a citizen of Finland.

Evergreen: Mr. Rysa, you've been with Timberjack for more than 20 years. Were you surprised when John Deere bought the company?

Mr. Rysa: Yes I was, but on balance I think it has been a good deal for both entities. With its very strong research and development program, Timberjack has been a global leader in harvesting technology for many years. In John Deere we have a company with great purchasing power, legendary customer support and a very impressive North American distribution system.

Evergreen: Where are Timberjack's product lines made?

Mr. Rysa: We build our feller bunchers, track harvesters and knuckle-boom loaders in Woodstock, Ontario, our skidders in Davenport, Iowa and our cut-to-length systems, including the biomass bundler, in Joensuu, Finland.

Evergreen: In how many countries would we find Timberjack machines operating?

Mr. Rysa: 80 or 90 I suppose; every country in the world where advanced forestry is practiced.

Evergreen: Timberjack and the Forest Service are involved in a partnership designed to field test your company's biomass bundler. Would you like to continue the relationship?

Mr. Rysa: Yes, definitely. We believe we can help the Forest Service better apply available harvesting technology, especially as it concerns thinning the West's overly dense national forests. But let's be candid. Federal forests aren't as important to our customers as they once were so they aren't as important to us as a company. We still want to be good citizens, and help in any way we can, but how much research and development capital should we allocate to this problem? Frankly, we don't know, but we hope to get some of our questions answered later this year when we meet with key federal officials. We will try to do whatever is asked of us.

Dave Krysko for Timberjack-John Deere

Mikko Rysa, Vice President, Worldwide Forestry Sales and Marketing, John Deere, Construction and Forestry Division

Evergreen: Wasn't the biomass bundler designed for use in forest plantations rather than the unpredictable landscapes in which the Forest Service field-tested it?

Mr. Rysa: Yes, it was. There was a need for a machine that could follow behind our timber processors and log forwarders picking up the limbs and treetops that harvesting yields. About 15% of Finland's energy comes from woody biomass, so there is a good market for all logging residues. Currently, demand for biomass bales is about three times greater than supply, so the bundler market is definitely growing. And, as the Forest Service's field test results reveal, the bundler also does quite well in many different situations you would never find in a plantation setting.

Evergreen: Would you characterize the West's wildfire crisis as a growth industry for Timberjack-John Deere?

Mr. Rysa: The economics aren't there yet. If markets aren't found for the small trees and biomass that must be removed from forests there won't be markets for our harvesting technologies either. But economics aren't the only measure. Reducing the risk of catastrophic wildfire in the West's forests also makes good environmental sense.

Evergreen: Are there better markets for small diameter trees in the Nordic countries?

Mr. Rysa: Oh my yes, especially biomass. There are lots of small power plants in all of the Nordic countries, especially Sweden. Finland has committed to increasing its biomass capacity because it believes wood-based energy products will be good for its image as a global environmental leader.

Evergreen: How should we address this problem in the U.S.?

Mr. Rysa: If your government is really serious about protecting the public's natural assets it needs to get involved financing harvesting and biomass generating technologies. There is no other way to create markets for the wood. No one else is going to make the initial investment because there are so many political risks. But once these technologies are in place and operating, new markets for the wood will quickly develop and private capital will again flow to forest and wood processing facilities.

Evergreen: Are you aware that many U.S. forest products companies are now investing their capital in new lumber and papermaking operations in other countries, principally in the southern hemisphere?

Mr. Rysa: Yes, I am, and I think it is a very serious problem. Frankly, there is too much investor impatience on Wall Street. Too much importance is attached to quarterly earnings. European and Asian investors are far more patient.

Evergreen: Research and development-wise, where is Timberjack-John Deere headed?

Mr. Rysa: I think you will see a combining of systems technologies. Before long, machines will be able to perform multiple tasks, and they will be lighter and more energy efficient than they are today. We've been headed this direction since the 1970s. Back then, the total weight of the various pieces of a woods system ranged from 100 to 120 tons. Today, that same system weighs about 35 tons and carries about 75% less petroleum into the woods. It's fair to say our machines are a lot friendlier to the environment than they were 30 years ago. This trend will continue.

Evergreen: What about miniaturization? Do you see any chance for, say, machines half the size they are today?

Mr. Rysa: It is the everlasting question. Many want smaller harvesters and forwarders, especially in Europe, and many do not, especially in the U.S. Of course, everyone wants the same or better performance! Seriously though, the critical issue is soil compaction, which is a function of the number of times the machine passes over a particular area, not its weight. Because the larger machines can lift or carry more weight they get more done with each pass or movement through the harvest area, so there is less soil compaction, even though they are heavier. Smaller machines are more fuel efficient, but less stable, so there are tradeoffs associated with their use. I expect we will continue to build machines in three sizes and let our customers choose the ones they believe will work best for them.

Evergreen: What is the forestry future for Timberjack-Deere in the U.S. & Canada?

Mr. Rysa: Oh, I almost hate to answer your question, but I will. When I see the terrible destruction your wildfires are causing I think it is a pity that forests in the two countries are not better managed. There is so much untapped potential. Please understand, I am a foreigner, a European from Finland. We understand the value of land better than you do. It isn't endless. We can't afford to waste it and neither can you. Why not concentrate commercial management in areas where your trees grow best? Grow 100% of the wood you need on, say, 30% of your available land base. Then you can have your parks and recreation areas on the other 70% of your land base. You will be far more efficient and have much better managed forests in the end.

Evergreen: What countries do you think hold the greatest untapped potential for Timberjack and John Deere?

Mr. Rysa: Ranked in order I would say Russia, Asia Pacific, including China, and Brazil hold the greatest potential.

Evergreen: How do you want your company to be known?

Mr. Rysa: We want to be known for producing top quality harvesting technology, for outstanding customer service and support, and for providing vision and leadership in solving environmental problems that challenge our global society and customers in forestry, agriculture and construction.

The Timberjack-John Deere bundler assembles a biomass bale in a field test conducted last summer on private forestland south of Missoula, Montana. About 30 of the $600,000 machines are operating worldwide, none in the U.S. But in the course of our investigation we found three companies in Idaho and Montana willing to buy the machines on federal government assurance of a supply of wood fiber sufficient to justify the investment.

The Evergreen Foundation: Exploring the art and science of forestry

The Evergreen Foundation is a non-profit forestry research and educational organization dedicated to the advancement of science-based forestry and forest policy. To this end, we publish *Evergreen*, a periodic journal designed to keep Foundation members and others abreast of issues and events impacting forestry, forest communities and the forest products industry.

In our research, writing and publishing activities, we work closely with forest ecologists, silviculturists, soil scientists, geneticists, botanists, hydrologists, fish and wildlife biologists, historians, economists, engineers, chemists, private landowners and state and federal agencies responsible for managing and protecting the nation's publicly owned forest resources.

All statistical information appearing in *Evergreen* is taken from publicly supported federal and state forest databases in place since the 1950s. Industry information is also used, but only when it can be independently verified.

All *Evergreen* manuscripts are reviewed before publication to ensure their accuracy and completeness. Reviewers include those interviewed as well as scientists, economists and others who are familiar with the subject matter. While not a peer review, this rigorous process makes for strong, fact-based presentations on which the Evergreen Foundation stakes its reputation.

Evergreen was founded in 1986. Initial funding came from a small group of Southern Oregon lumber companies interested in promoting wider citizen involvement in the federal government's congressionally mandated forest planning process. In the years since its' founding, *Evergreen* has assumed a much wider role, providing public forums for scientists, policymakers, landowners, federal and state resource managers and community leaders across the nation.

Support for our educational mission comes from Foundation members and other public and private sector organizations that share our commitment to science-based forestry. We also generate revenue from reprint sales - and from "Our Daily Wood," a hand-finished four-pound wood block that is the volumetric equivalent of the amount of wood fiber consumed ever 24 hours by every person on the Earth.

The Foundation operates under Internal Revenue Service 501(c)(3) regulations that govern the conduct of tax-exempt organizations created for charitable, religious, educational or scientific purposes. As such, we do not lobby or litigate. Forestry education is our only business. Contributions to the Foundation are tax deductible to the full extent the law allows. To become a member or order reprints of this issue, please log on to our website www.evergreenmagazine.org. For more information concerning our work, contact Kathleen Petersen, Development Director, The Evergreen Foundation, P.O. Box 1290, Bigfork, Montana.

White House photo

Provider Pals, a youth cultural exchange program based in Libby, Montana is the recipient of the first-ever Preserve America Presidential Award. The President and Mrs. Bush presented the award to Provider Pals executive director, Bruce Vincent, in a May 3 Oval Office ceremony. Among those present, Kootenai National Forest Supervisor, Bob Castaneda, who nominated Provider Pals for the award. Provider Pals uses the Kootenai's old Raven Work Center for its summer camp. Thanks are due the Ford Motor Company and the Montana Ford Dealers Association for their generous support for Provider Pals and the Evergreen Foundation. Montana's Ford dealers recently retired the lease on the Foundation's 2001 Ford pickup. Evergreen is also a long-time Provider Pals supporter and Mr. Vincent is, in turn, an Evergreen Foundation director.