

March 2006

Desert Exposure

Seeing the Forest for the Trees

Combining environmentalism with enterprise, Gila WoodNet helps thin and restore forests by creating markets for wood too small for sawmills.



Story and photos by
David A. Fryxell

If you've noticed Gordon West's operation at all, while warily navigating the speed traps east of Silver City on Hwy. 180, it's probably the log cabin that caught your eye. Nestled between the National Guard armory and the new funeral home at the Santa Clara intersection, the cabin-in-progress looks nothing like the rough-hewn houses we associate with Abe Lincoln doing his school-work by firelight. Its lines against the bluebird-colored sky are as clean and precise as an architect's drawing, the logs more like, well, boards than hunks torn off a tree. You'd be ready to move in as soon as the cabin's finished, maybe before.

But Gordon West just crosses his plaid-sleeved arms and squints at the cabin behind the glinting circles of his glasses. He says mildly, "Oh, that's all junk wood."

The mission of Gila WoodNet, the not-for-profit that West co-founded in 1999, and its neighboring for-profit business and largest customer, Santa Clara Woodworks, is to find

uses for such "junk wood"—generally, trees with trunks 12 inches in diameter at breast height and smaller. By creating a market for trees beneath the notice of most commercial logging, Gila WoodNet hopes to make it economically viable to do what, unchecked, nature would otherwise accomplish with forest fires: Clean up area forests and let the larger trees thrive.

So what would loggers or the forest service do with such "junk" trees

if not for Gila WoodNet? West tries hard not to let his face—which has the look of a benign children's TV show host—betray how stupid this question is. "They don't do anything with it," he replies patiently. "It's just left out there until it gets burned in a forest fire."

The problem, of course, is that by limiting forest fires, we haven't let the small stuff get burned away. As the Gila WoodNet Web site (www.gilawoodnet.org).



Gordon West and his "unilogger."

gilawoodnet.com) puts it, “There is widespread agreement among most interest groups that our forests are generally overcrowded with small trees, a result of 100 years of management practices that removed larger trees while excluding most natural fire. Gila WoodNet’s role in the forest is to bring back a more natural forest structure by thinning and removing smaller trees.”

Thinning the forest ultimately reduces the risk of serious fires by reducing the available fuel, increasing the spacing between trees and removing “ladder fuels” that can help a fire escalate to larger trees. It also increases the water available for larger trees and may limit bark-beetle infestations.

“We try to replicate what we think fire would have done if it had not been excluded or managed for the past hundred years,” West explains. “It looks pretty nice when we’re done—often it’s hard to tell anything has been done, but we may have cleared half the trees.”

Gila WoodNet works in partnership with Todd Schulke of the Center for Biological Diversity and with the Silver City Ranger District of the US Forest Service. As then-District Ranger Gerry Engel put it in an interview shortly after the partnership was forged, it was “a lucky coincidence of having the right people in the same place at the same time.” The relationship shows that “people of different views can actually get something done on the ground,” according to Engel, adding, “We agreed to leave professional egos at home.”

Smiling, West describes Gila WoodNet’s relationship with the forest

service as “as much of a partnership as you can have without violating any laws.”

Schulke, the Pinos Altos-based Forest Programs Director of the Center for Biological Diversity, says, “It’s provided an opportunity for us to build agreement on how to manage forests and restoration while creating jobs and businesses at the same time. It’s a convergence of ecological and social values that’s unique in the Southwest, if not in all of the West. There are other forest-restoration programs and small-diameter tree utilization efforts, but Gila WoodNet puts those together in combination with an ecological sensibility and innovative thinning and business practices. It’s a whole package.”

“A lot of people think the issue is ‘enviros’ versus industry people,” West adds. “There’s actually very little of that. It’s mostly more subtle issues relating to money.”

Indeed, for Gila WoodNet to succeed, it’s not enough simply to invent low-impact methods to clear the forest of smaller trees. West and his crew then have to find ways to turn that harvest into money-making products.

Logs for cabins are only the beginning. Gila WoodNet also sells machine-peeled poles, juniper posts, machine-peeled vigas, slabs and on down the food chain to firewood, wood chips, mulch, sawdust and bark. It must constantly innovate to push the most lucrative uses further down the line, using smaller trees for things for which sawmills would demand 16-inch-diameter trees or larger.

For the community, too, jobs get created more from creative uses of the wood than simply cutting it. West is working on gizmos to quadruple the amount of trees that can be cut and removed with the same size crew. Current forest service thinning techniques can cost as much as \$1,000 an acre—that’s not economical. “A bunch of people with chain saws is too expensive and too slow,” he says, noting that workers’ compensation costs can run to 80 percent of payroll for logging work. “Hundreds of people in the woods—nah. It’s hard, dirty work. The jobs are when you get the trees down here.”

Gila WoodNet itself employs seven people, according to manager Dana Bates. But that’s just the stone hitting the water, not the ripples. Add three more jobs at the small adjacent sawmill, operated by a Mexican firm, plus Santa Clara Woodworks, plus various others working in and around the property—the “net,” as in “network,” of Gila WoodNet, if you will. West figures, “The whole cascade of related jobs adds up to 30 to 40 jobs directly doing something with wood.”

He takes the math a step further: “We plan to eventually plateau at 300-400 acres a year; there are about 10,000 acres within 50 miles of here that qualify to be mechanically thinned. That’ll last us 20-30 years just doing the first thinning. Economic developers like to put in multipliers—I’m always suspicious of these, so let’s use a low multiplier of five. That gives you one full-time job for every acre thinned—that’s the bottom line. If you just went through with a bunch of guys and a chainsaw, it’d all be over in a couple of days and you’d have nothing.”

Instead, you have the “trolls.” That’s what the cluster of workers and craftspeople around Gila WoodNet call themselves. Many are independent contractors, attracted to the opportunities and easygoing atmosphere at Gila WoodNet like iron filings to a magnet. Jim Smigulec—universally known as “Goose”—crafts furniture, custom doors and everything from bedposts to bread tables in a corner of a building just a log’s throw from Gila WoodNet’s clanking, snorting firewood cutter. Blacksmith Jim Pepperel, who trained in Santa Fe, is making the artistic metal pieces for an array of log trusses that Santa Clara Woodworks is building for a house in the Dos Griegos subdivision. (Although West has no interest in the hassles of being a general contractor, he will work with contractors on specific parts of a project.) Pepperel, says West, is among those helping to create a “local style,” which he describes as a mix of Arts and Crafts and “mountain style”—best exemplified, to date, by the furniture Santa Clara Woodworks made for Bear Mountain Lodge near Silver City (see the January 2006 Desert Exposure).

West likens the network of people and enterprises gathered here to the cells of an organism. “An organism is not generally made up of just one or two cells,” he says. “This is a lot more complex than the tiers of a traditional corporate hierarchy, but in the long run it’s more beneficial and more stable.”

“If somebody can do it, then by golly we can,” says “Goose” Smigulec. “We’ve got the same number of arms and legs as anybody else.” He explains the organic way the array of “trolls” has grown: “You bring

in somebody and then they bring in somebody.”

West adds, “Someday we’re going to put up a sign that says, ‘The Trollworks.’”

Gordon West has been working with wood, one way or another, since 1977. He moved to southern New Mexico from northern Idaho, where he operated a small wood-working shop and was also active with a local environmental group. “We were trying to change the way logging was done up there,” he says. “So I know both sides of the issues, which turns out to be pretty important. There’s a lot of attitude on both sides that there doesn’t need to be.”

When he moved to Grant County, he intended to concentrate on cabin building. But when he contacted the forest service about trying some of the ideas he’d come up with back in Idaho, officials said their hands were tied. “They just didn’t know that wasn’t true,” West adds with a chuckle.

Todd Schulke recalls, “Gordon was looking for cabin logs, and the forest service directed him to me. It ended up being a lot bigger and longer-term than he anticipated, I guess.”

“Todd didn’t trust me at first,” says West. “Then he went on the Web and looked up the group I’d worked with in Idaho. When he saw my picture, I guess he figured I was bona fide.”

Between the two of them, the idea for Gila WoodNet was born. As a nonprofit corporation, it could qualify for federal grants and funding from donors such as the Ford Foundation. “There’s never enough

money, but we’re still going,” says West. “It’s tough, but we’re doing better than most.”

From its inception, Gila WoodNet aimed to tackle the most difficult challenges in forest thinning—not the easy stuff. “We wanted to stay away from big trees, big logs and sawmills,” West explains. “We wanted to force ourselves to deal with the biomass from forest thinning, the wood that’s too small to use for traditional things except in small quantities. To get the higher-value stuff, you have to figure out what to do with the rest of it. Gila WoodNet was created to try to address the root problems, not just to get some wood business going.

“It’s ecologically driven, not market driven. We’re trying to make a business out of what nobody has made a business out of before.”

That challenge didn’t faze him, though. West says he wasn’t afraid of the environmentalists or the forest service, since he’d been on both sides of their issues. And he knew why builders are often loathe to use logs—which are heavy and lack the reference lines of sawmilled boards—since he’d been a builder, too.

The first hurdle was to develop a “prescription” for forest thinning that was ecologically driven—“which trees do you mark, where do you cut,” as West explains it. Gila WoodNet’s prescription has since been adopted not just in this corner of New Mexico but throughout the Southwest, supplanting the previous conventional wisdom.

Next Gila WoodNet had to come up with equipment “tweaked” for this

sort of work. “Traditional logging equipment is expensive and huge, designed to plow through the acres,” says West, leading the way through the cluttered yard to a vehicle that looks vaguely like the bare, blackened skeleton of a farm tractor—his “unilogger.”

Doing it himself, cannibalizing other machines, saved 80 percent of the cost of buying a “log forwarder” from Scandinavia, where the best are built, West figures. It also meant that “people in other communities could replicate it without really serious skills. I’m sort of a farmer-mechanic fabricator—though in the process I’ve developed a lot more skills—so if I’m able to do it, somebody else could.”

West wanted to develop equipment that could go in, cut small trees and get them out again to be loaded on a truck, all with minimum damage to the landscape—without leaving lasting tire tracks, for example. “Cutting trees is really pretty benign. It’s getting them out that does the damage. Logs weigh a lot, and loggers often drag them out. If you drag them out with limbs and leaves attached, that takes a lot of valuable biomass out of the forest that it’s better to leave behind.”

To solve the problem, West started with a Nikken NWD 3000 articulated 4x4 fitted with a Nokka 3966 crane, which can adjust to fit the logs’ length. It pulls a trailer that exactly follows the unilogger’s tracks, even if loaded down with 30-foot logs. An orange grapple attachment can be switched with a bright yellow mechanism that incorporates a chain saw. This can be rotated to control the direction the tree falls—again, minimizing collateral forest

damage. Working “like an inchworm,” the gizmo crawls the tree trunk, shearing branches off, cutting and measuring as it goes. Finally, the unilogger winches the logs out and onto the trailer.

But West’s ingenuity doesn’t stop once the trees have been gently removed from the forest. Back in Santa Clara, the larger logs—a definition Gila WoodNet is now pushing to trees as small as five to seven inches in diameter—will be peeled and then dried in passive-solar kilns. Using little more than black plastic and circulating air, the kilns easily achieve 85-90 degrees throughout. On a 70-degree day outside, West says, the air blowing into the kiln can be as hot as 180 degrees. A full load of green wood will dry to less than 10 percent moisture in about three weeks.

Logs for uses such as the trusses they’re now building will go through another invention, which incorporates a two-way band saw and allows precise cutting of logs that are as convenient to use as sawmilled boards. But logs are stronger than boards of the same size, West notes: “A log is just as strong as it was when it was a tree. The engineering that went into making that tree was very clever, and we try to do as little to that as possible.”

He plucks a pencil and starts to draw on the flat side of a log. “A 12-inch log is stronger than a 12-inch beam,” he says, sketching a circle to represent the log and, within it, a square representing the largest possible beam that could be cut from that log. The log, West says, will be three times stronger than the beam. Sticking with logs lets Gila WoodNet use trees that are less than half

the size a sawmill would require.

Led by a pair of hyperkinetic Jack Russell terriers, West leads the way up the hill to Gila WoodNet’s log-processing operation. Figuring out what to do with the highest-value 20 percent of the wood from forest thinning is only part of the equation, he explains. The real trick is productively getting rid of the other 80 percent, all the way down to the sawdust.

“Something happens to almost all of it,” says Dana Bates, whom West hired to run Gila WoodNet’s day-to-day operations. “It would have to, or we’d wind up with a mountain of stuff here in no time.”

West relents to the insistent Jack Russell at his feet and tosses a piece of wood—about a quarter the size of the dog—for the terrier to retrieve. “That’s ultimately the problem,” he adds, watching the dog disappear over a pile of logs like a marshmallow fired from a cannon. “How do you get rid of all of it? The real issue, of course, is how do you get enough money to pay for getting rid of it all? That’s starting to look possible.”

A couple of years ago, Gila WoodNet thought a deal to heat the nearby Fort Bayard medical center with wood chips would solve the problem. But that seemingly win-win solution, which would involve converting a natural-gas boiler, has been mired in government bureaucracy. “If and when it happens,” says West, tossing a stick to the second demanding dog, “that would balance out our entire operation.”

In the meantime, Gila WoodNet keeps finding other uses for its

products. Cobre High School has just bought a load of wood chips for its new ballfields, Bates reports.

The operation also is becoming increasingly automated and efficient, with a long conveyor for logs soon to come online. An operator will eyeball the logs on the line and sort them by quality as they pass; lesser-quality logs can then be diverted to the guillotine-like firewood processor or to the wood chipper. “You won’t see guys manhandling logs anymore,” says West.

Though the Ponderosa pine firewood delivers just 75-80 percent of the BTUs of premium firewood, it’s only half the price—\$79 a cord. Gila WoodNet is trying to educate its customers to buy firewood earlier in the year, so the green logs have time to season, Bates adds.

As Bates takes over the chore of throwing sticks for the terriers, West says, “Dana always rolls his eyes when I say this, but we’re actually doing better at this than almost anybody in the Southwest.”

In fact, West has just gotten back from Gallup, NM, where he was advising a local group on setting up an enterprise modeled on Gila WoodNet. His ultimate goal, after all, is not merely to find a breakeven, jobs-creating way to do the right thing for the forest in this neck of the woods—it’s to “develop methods to remove and utilize small trees resulting from forest restoration thinning projects” that can be applied throughout the region. Planting the seeds, in short, for Gila WoodNets wherever Mother Nature needs a hand.

If that means combining environ-

mentalism and capitalism to create products for the harvested trees, so be it. “We definitely have a foot in the real world,” West says. “It’s kind of a breakthrough.”

Schulke, whose Center for Biological Diversity has often been a flash-point for bitter controversy, says his involvement with this project has been different. “When you get people out in the woods and they take a look at what we’ve done—the grasses and other herbaceous plants starting to grow at ground level, the trees with room to grow—and then you tell them it’s creating jobs at the same time, any controversy evaporates pretty quickly. It’s not that we have all the answers—we’re constantly fine-tuning and learning. But this does address a wide range of values and gets past the controversy for a change.”

Gordon West looks around at the hectic, clanking, fresh-cut-wood-smelling scene, where various “trolls” are as active as Jack Russell terriers, and allows a thin smile to crease his face. “When I tour people around now, I’m amazed,” he says. “I can’t believe we’ve done all this.”