



*On the cover:  
Stacked lumber at Pacific Lumber Co.'s Scotia headquarters.  
Photo by Kyana Taillon*

by JIM HIGHT

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REDWOOD IS TO LUMBER what black angus is to beef and Mercedes is to cars: a specialized and highly valuable brand.

Uniquely beautiful and resistant to rot and insects, redwood lumber sells for two to three times as much as other softwoods.

And because redwood is produced almost exclusively in Humboldt and Mendocino counties, it keeps many North Coast timber operators playing profitably in the increasingly competitive global lumber game.

But some people who follow the timber industry say that the large redwood companies are selling inferior wood and undermining redwood's image in the

process -- something akin to DaimlerChrysler marketing Dodge Neons as Mercedes luxury sedans.

"They've managed to pull the wool over consumers' eyes," says Michael Evenson *[photo at right]*, a forest activist who owns Old Growth Timbers, a company on Highway 101 between Eureka and Arcata that sells recycled lumber from dismantled buildings. "After 10 years [in an outdoor setting], second growth isn't going to perform very well."

The problem, according to Evenson and others, stems from even-aged management, the practice of clearcutting many acres at once, replanting redwoods, then clear-cutting again as early as 40 years later.

"With their relatively short [logging] rotations, these trees aren't getting that big," says John Rogers, president of the Institute for Sustainable Forestry (ISF), a Redway nonprofit founded in 1991 to study and promote alternatives to industrial logging. "[The wood] has lots of knots [and the quality] is not that good."

Rogers, Evenson and others predict buyers will eventually become disenchanted with redwood and start buying more western red cedar, redwood's arch-competitor, as well as imported tropical woods like ipé and composite materials such as Trex plastic/wood decking.

Timber executives dismiss these concerns. "The redwood industry right now is selling 500 to 550 million board feet a year," most of it in California, says Dennis Wood *[photo at left]*, vice president of operations for Pacific Lumber Co. "If we had a billion feet a year, consumers would take it. I don't know where this other talk is coming from."

Who's correct? The answer couldn't be more important for the North Coast.

Even after its decades-long downsizing, the wood products industry is still one of the largest industries here, and redwood is its most valuable commodity.

In 2003, redwood accounted for \$110 million of the \$143 million worth of logs harvested from private forests in Humboldt County. And the region's biggest lumber company, Maxxam Group Inc. (which owns Palco and Britt Lumber Co.) earned \$162 million -- 88 percent of its lumber revenues -- from redwood in 2003.

So an erosion of redwood's reputation could have grave consequences for the local economy. "One thing we don't want is for the reputation of redwood to decline," says Mark Andre, forester for the city of Arcata, which logs redwoods every few years to pay for the upkeep of its community forest. "Then we'd all be in trouble."

## **No more old growth**

Redwood's unique status in the lumber market was built on the enormous supply of virgin old-growth trees that yielded fine-grained wood with legendary beauty and almost supernatural toughness.

But after more than a century of being logged or set aside in state and national parks, private old-growth redwood timber is virtually gone, and the industry is milling young-growth trees.

Young-growth redwood has coarser grain, a higher proportion of the less-durable and lighter-colored sapwood and smaller concentration of the chemicals, known as extractives, that bestow redwood's inner heartwood -- the part that actually looks red -- with the ability to resist rot and insect damage.

As a result, "The durability of old-growth redwood is greater than young-growth redwood," writes John Shelly, a wood scientist and forestry advisor at University of California at Berkeley, in an e-mail.

These basic differences between old-growth and young-growth redwood are not much debated.

What is at issue is the quality of young-growth redwood produced under even-aged management.

### **Growing too fast?**

In even-aged management, timber operators log most or all of the trees in an area as large as 30 acres. Then they burn the remaining slash and plant tree seedlings. Within a year or so, they send crews to spray herbicides on the shrubs and hardwoods that would otherwise put the young redwoods in shade. (Similar methods are used with Douglas fir, the North Coast's other main lumber tree.)

In full sunlight, redwoods exhibit their capacity to grow faster than any other conifer. They can grow to 130 feet tall and 3 to 4 feet wide within 40 to 50 years. Then the whole process is repeated in what's known as a rotation.

To old-timers in the industry, this fast growth is truly a marvel. "It's possible now to grow trees much faster than was contemplated 50 or 100 years ago," says Bob Barnum *[photo at right]*, owner of Barnum Timber. "I can remember my father, who was in the timber business, saying it would take 80 years to grow a tree."

But does this fast growth sacrifice quality?

"Their wood would be higher quality if they could do 100-year or 120-year rotations," says Rogers of the Institute for Sustainable Forestry. "It's about 90

years before the redwood heartwood begins to take on the decay resistant characteristics that make it such a strong product for outdoor uses."

Rogers and others say the problem is not just the young age at which redwoods are typically harvested, but also how quickly they grow in an even-aged management regime.

Redwood quality is determined by "how much light [the trees] get," says Evenson. "If they get a lot of light they grow fast. If there's a little bit of suppression [from shade] and they have to struggle a little bit," the trees develop finer grain and better quality.

"Even if you grow to 120-year rotations, if it's intensive [even-aged] forest management, you're still going to have relatively wide growth rings," says Rogers. "The tighter grain materials are only going to come from slow-growing trees."

Rogers calls these critiques "widespread" and "common knowledge" on the North Coast.

But research and interviews indicate that this viewpoint incorporates at least some measure of myth.

For example, several people who use, sell and study redwood say that it is not true that a 100-year-old redwood produces better-quality heartwood, or inner wood, than a 40-year-old tree.

"Heartwood is heartwood, period," says Eric Hollenbeck *[photo at left]*, who creates high-end redwood trim and molding at Blue Ox Millworks and Historic Park in Eureka.

UC Berkeley's Shelly writes that the fine-grained heartwood associated with old-growth redwood generally isn't realized until a tree has reached 200 years of age. "Growth rates are typically slower in older trees [leading to finer grain], but it is more like trees over 200 years [or more] than 100 or less," he writes.

Hollenbeck regularly uses coarse-grained young-growth redwood, and he says he is satisfied with the quality. Hollenbeck is occasionally commissioned by the National Park Service to create molding for the rehab of an historic structure. To match the original materials, only old-growth will do, and he generally acquires the lumber from salvaged logs that have been recovered from private lands.

According to Hollenbeck, who logged redwoods before he became a craftsman, a 100-year-old redwood tree would only develop fine grain "if the forest canopy had tightened up around the tree and blocked the sunlight, slowing the growth way, way down."

And this is exactly what the large redwood growers do not want. This point was illustrated on a tour that Simpson Timber Co. (now Green Diamond Resource Co.) provided of its forest operations in 2001.

The tour began in a small nature preserve where mature hardwood trees had woven a dense canopy over a creek. In this shady glen, foresters pointed out a 20-year-old redwood that was just 4 inches in diameter.

Then they guided participants to a nearby even-aged stand that had been clear-cut and replanted 20 years before; it was stocked with trees of the same age -- but three to four times as wide.

While the shaded tree would undoubtedly produce wood with fine grain, in another 20 or 30 years, it would probably yield just a few 2-by-6 boards. The fast-growing trees looked like they'd be big enough in another 20 years to build a whole deck.

### **All-aged management**

But the industry's critics are not advocating that young redwoods be grown as slowly as Simpson's anorexic 20-year-olds. They support -- and in many cases, practice -- selective logging methods that remove a portion of the trees in a given timber stand periodically.

With this style of logging -- also known as all-aged management -- the "little bit of suppression" that Evenson describes occurs, and trees grow somewhat more slowly.

And it's the belief of many selective-logging advocates that slower growing redwoods in an all-aged forest produce wood of significantly better quality than the coarse-grained redwood from trees grown under even-aged management.

"I think it does produce higher quality wood," says Rogers. "You're not going to get that tight grain that we're used to [from old-growth]. But it will get better [grain density] and will have fewer knots and consequently be stronger, higher-quality, more durable wood."

Rogers admits this is something of a guess, since no one has practiced all-aged management of redwoods long enough to prove it.

When Jim Able, a forester known as a leader in all-aged management, was asked whether he thinks Rogers is guessing right, he replied: "Yes and no."

"Some of the better trees are a little tighter grained, but a lot of the trees that are harvested [from selectively logged forests] are coarse grained trees," says Able. "It's not the utopia in terms of getting tighter grained trees."

Able also points out that the modern system for grading redwood does not take into account the fineness of grain. The top grade -- known as clear all heart -- requires that boards contain no sapwood, knots or defects, but it has no grain density specification.

Aside from specialty users, "by and large the public doesn't demand [fine-grained redwood]," says Able.

But could a new premium grade of fine-grained young-growth redwood emerge if more forests were harvested selectively?

That's certainly what one newcomer to the redwood industry has in mind.

### **A new experiment**

Mendocino Forest Products, which bought approximately 230,000 acres of former Louisiana-Pacific lands in Mendocino County in 1998, is the only large redwood company using all-aged management.

"The price we pay for that is that we don't maximize fiber production on every acre of our property," says Mike Jani, vice president of Mendocino Redwoods Co., the log-producing arm of MFP.

"We get a little bit slower tree growth and we keep our trees out on the forest a little bit longer," says Jani. "Because of that we will develop bigger trees with more heartwood and smaller growth rings than perhaps some of the more traditional, even-aged type systems."

But Jani says the company's decision to follow all-aged management had as much to do with the intensive logging that had occurred previously on LP's lands as it did with a desire to produce high-quality lumber. Because there was a relatively small volume of harvestable timber on the property, Jani says a program of clear-cutting wouldn't have made sense.

"We started with low inventories," Jani says. "There are other [redwood] companies that, because of their management, had higher inventories, and they are managing their inventory differently because of that," he says.

Jani is also careful to point out it will be a long time, perhaps 30 to 50 years, before MRC has a premium young-growth product to sell in any quantity. And in that distant future, it may turn out that the company's redwoods are no more valuable than redwood from even-aged management forests. "At this point, it's all conjecture," he says.

For the time being, Mendocino is harvesting trees that were grown after LP's clear-cuts -- yielding the same type of coarse-grained young-growth as its

counterparts are producing. Jani is enthusiastic about its quality. "One of the best stories we have to tell is what a good product redwood is."

## Reputation intact

Other leaders in the redwood industry echo Jani's confidence that redwood's sterling reputation is intact -- and well deserved.

"The physical properties of the second-growth [redwood] fiber the industry is harvesting are very well suited to the intended uses," says Kevin Paldino *[photo at left]*, Palco's director of sales and marketing. "If there was something that required that real tight density grain [of old growth], I guess we don't have that."

"The product line has narrowed [from the old-growth days]," he continues. "If I got out my redwood grade book from the 1960s, I think it has 34 separate grades of redwood. But today when consumers wants to buy 2-by-6's to make a deck, they look for four nice edges, not too many knotholes [while] some even like knots," he says.

Even fence and deck boards made partly from sapwood -- which is widely disparaged locally for its tendency to rot in the North Coast's wet climate -- are popular in Southern California, Denver and other drier areas. "Farther away from Northern California, sapwood has always been accepted," says Michael Darby, sales and marketing director for Capital Lumber, a Phoenix-based wholesaler that distributes redwood throughout the West.

"We're doing very well with redwood," says Darby. "[We've] seen our [sales] of redwood increase over the past few years."

But could there be a reckoning ahead for the redwood industry?

Young-growth redwood lumber has been sold in the United States for exterior uses since the mid-1970s. Many decks and fences built 10 to 30 years ago contain both young-growth and old-growth, and these boards show how the two types of wood bear up under the elements.

As seen on a redwood fence in an Arcata backyard (below), the softer wood between the widely spaced grain of young-growth boards recedes over time, leaving a ridged and serrated surface which is more prone to split and crack. The finer grain in old-growth boards allows them to endure the weather with smooth surfaces and strong edges.



It's worth noting, however, that the young-growth boards in the photo have endured about 25 North Coast winters, according to the homeowner, Richard Goodrich. Although they show their age, they're still standing.

Whether all-aged management would yield better young-growth wood is a question that can't yet be answered. But it seems clear that it is a more durable product than many in the redwood region give it credit for being.

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## Redwoods in New Zealand?

THE NORTHERN CALIFORNIA COAST'S LONG MONOPOLY ON REDWOOD may be challenged by an aggressive rival from the southern hemisphere: New Zealand.

In early 2003, Soper-Wheeler Co., a timber company based in Strawberry Valley (Yuba County), announced it was starting a 100,000-acre redwood plantation in New Zealand. The company used seedlings purchased from Green Diamond Resource Co.'s nursery, which deploys advanced breeding methods (but not genetic engineering, as widely rumored).

The foreign imports won't be a competitive threat anytime soon, since Soper-Wheeler's trees won't be ready for the chainsaws until 2035 or so.

*[Above: Green Diamond uses conventional breeding -- not biotechnology -- to produce fast-growing redwood seedlines, as seen here in its Korbel nursery.]*

But people in the redwood industry say more redwoods could take root in New Zealand and other countries looking for high-value, fast-growing trees to plant.

While redwoods are native to the North Coast, "they grow all over the world," says Bob Barnum, owner of Barnum Timber Co. in Eureka. "I visited plantations a few years ago in France. England has redwood in the Kew [Royal Botanic] Gardens just outside London."

"The one in France is growing very well," says Barnum, noting that France, Germany and other European countries are already exporting lumber to the United States.

Redwood from overseas "could be a trend," says Claudia Lima of Arcata. A lumber sales consultant, Lima and her husband, John, a logging contractor, assisted Soper-Wheeler in establishing its New Zealand redwood groves.

She says New Zealand is ideal redwood country. "The area grows trees like they do here in Humboldt County, only it's a little bit warmer."

A Soper-Wheeler spokesman was not available for comment by the *Journals* deadline, but in news coverage at the time, President Jim Holmes said the decision to invest on the other side of the globe was motivated by the high costs of complying with environmental regulations in California.

"Why spend money to plant trees or to raise timber or to buy timberland that you will never be allowed to harvest?" Holmes said to *The Press-Democrat's* Mike Geniella. New Zealand, Holmes said, still "honors property rights like we did 50 years ago."

"The business is going over to New Zealand because of the regulations [in California]," agrees Barnum. "It's relatively less rewarding to invest in timber production here. If we don't change that, we'll see the California forestry industry continue to diminish."

This is a familiar theme in the California timber conflicts, one viewed quite differently by forest activists. "The need to regulate this industry hasn't come out of thin air," says Mark Lovelace, president of Humboldt Watershed Council. "It has come from the fact that a few bad apples have insisted on not doing the right thing."

The New Zealand redwood project indirectly provided some new fuel to these long-running conflicts when *The Press Democrat* reported incorrectly that the redwood seedlings supplied to Soper-Wheeler by Green Diamond were "genetically engineered."

The *Press Democrat* story is posted on various Web sites and appears to have spawned the false notion that Green Diamond and others are growing redwoods from genetically modified organisms (GMOs). "[Redwood] replanting means planting GMO seedlings in rows," states WeSaveTrees.org.

Green Diamond's redwood seedling nursery has deployed conventional breeding methods for about 20 years to propagate superior trees for replanting and for sale.

But it produces seedlings using redwood's unique regenerative capacity -- its ability to sprout from stumps or burls -- without any assistance from biotechnology.

"[Our seedlings] are not genetically engineered," says spokeswoman Jackie Deuschle.

*--Jim Hight*

*Photo credits:*

*Photo of Michael Evenson by Bob Doran*

*Photos of Bob Barnum, Dennis Wood, Eric Hollenbeck and Kevin Paldino by Kyana Taillon*

*Photos of redwood fence and tree nursery by Jim Hight*