NEW ENGLAND
UPDATE

Sustainable Wood

A million certified "Well-Managed" acres of Maine forest supply lumber to New England and abroad

by Ted Cushman

A collection of family-owned Maine woodlands has become North America's largest environmentally certified timber operation. Certified as a "Well-Managed Forest" by Scientific Certification Systems (SCS) in 1993, Seven Islands Land Company manages property bought by David Pingree in 1841 and now owned by his descendants. The company's green-labeled products, including softwood framing lumber, hardwood flooring and millwork, and white cedar shingles, are available throughout New England and abroad.

A family firm. The Pingree family's holdings once extended to over 2 million acres, owned jointly since the turn of the century with a number of timber corporations who sold wood to paper and lumber mills. But in the mid-1900s the family's interest in conservative forest management began to diverge from the objectives of its corporate partners. So from the 1960s onward, the family consolidated its share of the holdings into about a million Maine acres that the Pingrees own outright. Seven Islands is the company the family formed in 1964 to manage their consolidated land.

A Seven Islands forester examines a recently cut stump. Foresters individually mark each tree harvested from the Pingree land.

Preserving the forest. Seven Islands estimates that its current harvest level could be sustained for 200 years and beyond. Spokesman Tom Goodyear says the company sought certification as a way of getting recognition for sound conservation techniques it has long practiced.

Of the firm's 35 employees, 24 are foresters. "Harvest activities seek to emulate natural forest processes," explains a sales brochure. "Seven Islands has no mills that must be perpetually fed with wood." The company harvests selectively, leaving many healthy specimens standing to replenish the timber supply. Natural reproduction, not replanting, provides future growth.

Seven Islands insists that the local Maine loggers who harvest its trees tread gently on the land. The company was the first in Maine to introduce a Scandinavian harvest system that employs machines called

This month in New England Update:

Seven Islands' Scandinavian logging techniques minimize soil damage and allow selective cutting. A processer (left) cuts and trims individual trees. The forwarder (right) carries logs away rather than dragging them.

processers and forwarders instead of skidders (see photos above). The processer can selectively snip off one tree at a time, lay it down gently, remove its limbs, and stack the logs. Then the forwarder picks up the logs and carries them out, rather than dragging them. Limbs are laid in the paths of the vehicles to reduce soil damage.

The results make recently harvested areas look "like a Canadian park," notes Goodyear. Seven Islands property is open to the public for recreation year-round, he explains: "It's laced with hiking and snowmobile trails. There's a lot of fishing, too." Goodyear tells the story of a recent chance encounter between a Seven Islands forester and a hunter in a wooded area. When the forester asked the hunter what he thought of the woods, the man responded, "It looks great. When are you going to cut it?" In fact, the woods had been harvested just the year before. "That's the kind of feedback we love," says Goodyear.

Certification. SCS, an independent firm, certifies environmental claims for a wide range of products, not just forest products. A company seeking verification of its products or practices pays a fee for the service, but has no guarantee of passing SCS's review. An SCS publication explains that to certify forest companies, SCS assembles a team of experts in fields including forestry, wildlife biology, hydrology, sociology, and economics. The team visits production sites, audits company records, reviews government documents on the company, and interviews people in the surrounding community.

SCS rates each company's operation for sustainability, environmental health, and community benefits, using a 100-point scale. A passing grade of 80 earns the forest a "Well-Managed" label. While a score of 100 is theoretically possible, SCS says it is highly unlikely that any company would hit that maximum. Seven Islands got a sustainability rating of 86, an ecosystem health rating of 88, and a community benefit rating of 94.

Buying certified wood. If a customer wants certified wood, it's within reach (see "Sources of Supply," right). All the products are stamped with the SCS "green cross and globe." "You don't see our products everywhere, but they're certainly as easy to order as, say, an Andersen window," notes Goodyear.

For more information on Seven Islands and its products, contact Tom Goodyear, Seven Islands Land Co. (P.O. Box 1168, Bangor, ME 04402; 207/947-0541). For information on green certification, contact Scientific Certification Systems (The Ordway Building, One Kaiser Plaza, Suite 901, Oakland, CA 94612; 510/832-1415). ■

Sources of Supply

Framing lumber:
Materiaux Blanchet Inc.
1030 Elgin Sud
Saint-Pamphile,
Quebec G0R 3X0
Canada
418/356-3344

Hardwood flooring and millwork (stock and custom):
A.E. Sampson & Son Inc.
Route 90
P.O. Box 1010
Warren, ME 04864
207/273-4000

White cedar shingles:
Maibec Industries Inc.
660 Lenoir St.
Sainte-Foy, Quebec G1X 3W3
Canada
418/659-3323

Case Study

A Tale of Two Roofs

Many researchers have questioned building code requirements for roof ventilation. But scientists who advocate unventilated roofs are usually talking about roof structures that are perfectly sealed against indoor air and moisture — a hard detail to achieve.

One technology, however, combines a very effective air and vapor barrier with high-R insulation: spray-applied polyurethane foam. *JLC* recently got a chance to follow a crew from foam superinsulation specialist FoamTech Inc., in North Thetford, Vt., to a pair of job sites where they applied the technique to two roofs — one with ventilation and one without.

Superinsulated ventilated roof. The owner of the first project, who was acting as his own general contractor on a home addition, is a confirmed fan of FoamTech's product. He used it in a gut-rehab of the main house and says it paid for itself easily with fuel savings. And in opening up walls at the beginning of his latest project, he found the previously installed foam to be in perfect condition, which resolved any lingering doubts about its durability.

But the owner learned that IKO Inc. would not guarantee the high-end organic-mat asphalt shingles he wanted if he applied them to an unventilated roof deck. So he included a ridge vent, soffit vents, and a 1 1/2-inch air channel in the design of his cathedral roof.

The air-channel detail was complicated and time-consuming. For this labor, the owner hired a pair of high-school teens over a weekend. After that, it took FoamTech's crew about two days to insulate the walls and roof of the entire addition, including two full stories and a basement half-wall.

EDWIN GAILITS

The owner hired unskilled part-time help to build an air space with foam boards beneath the roof sheathing (top). Wearing heavy protection against isocyanate fumes, the insulation crew then completed the job with spray foam (middle). Heavy snows atop the new roof experienced no melting (bottom).

The owner moved back into the house in January. In a severe ice-dam season, he says, his new roof was the only one in the neighborhood that didn't collect ice. And with plenty of

south-facing glass, R-38 walls, and an R-55 ceiling in his new addition, the heating costs are minimal.

Unventilated version. The second project we visited posed a different problem. The owner of a late 1700s building in Vermont wanted to create living space in the attic, which was framed with 5-inch-diameter rafters on 3-foot centers. Atop the board sheathing was a steel roof in good shape. The owner wasn't up for the expense of creating a soffit and ridge vent system — he wanted to leave a good-enough roof alone.

Fitting fiberglass to the round rafters would have been nearly impossible, and blown cellulose would have required a strong support structure. Either might have permitted some air and moisture to penetrate the assembly. FoamTech saw spray foam as the appropriate solution. Owner Henri Fennell knew that he could achieve an R-28 ceiling with 4 inches of spray foam, without any complicated framing details. He was confident that the foam would keep moisture away from the sheathing and eliminate air leaks.

The job took a FoamTech crew about a day to complete. The foam expanded into small cracks and tightly sealed the roof structure. Because the room isn't finished yet, it's hard to gauge its energy performance accurately, but tradesmen on the job noticed immediately that heat rising from the building below kept the space comfortably warm through some frigid Vermont days.

Cost-effectiveness. At $1.50/sq. ft. for an R-19 wall, FoamTech's product isn't the cheapest insulation around. But with an aged R-value between 6 and 7 per inch, it may be the best insulator on the market — and it does form as perfect an air seal as you're likely to get.

A worker preparing to spray-apply urethane masks a skylight (above) and hooks up an outside air supply to his respirator (above left). An exhaust fan (left) pulls hazardous fumes from the work area. The actual spray job takes only a few hours (below left).

For fans of superinsulation, spray foam offers a high-R, no-leak wall using conventional framing. And in leaky old buildings with peculiar framing details, it may be your best option for sealing and insulating in one step. ■

What's in a Wetland?

A consulting biologist cuts wetlands down to size

by Peter W. Spear

Wetlands permits are a big source of anxiety for builders and developers. The presence of a wetland on the property often drives a whole project's development and layout. As permit after permit is reviewed and requirements are modified, expensive design changes and abatement efforts can push costs through the roof. And as state and federal agencies line up to tee off on a project, the cost of paperwork alone can sink the whole idea.

But these major problems can often be avoided if the wetland is correctly defined. When called in to identify the boundaries of a wetland, many technicians erroneously include the transition zone between the wetland and adjacent areas as part of the actual wetland, making the wetland appear much larger than it really is. But by strictly adhering to specific standards set forth in the 1987 or 1989 federal wetland delineation manuals, my company has been able to significantly reduce the estimated size of wetlands on many New England sites, enabling projects to go forward quickly and at a reduced cost.

Water, soil, and vegetation. Most state wetlands regulations piggyback on the federal rule book. For a federal wetland to officially exist, three criteria must be met: The site must have poorly drained or impermeable soils, a water table very near the surface during the growing season, and a population of water-loving plants.

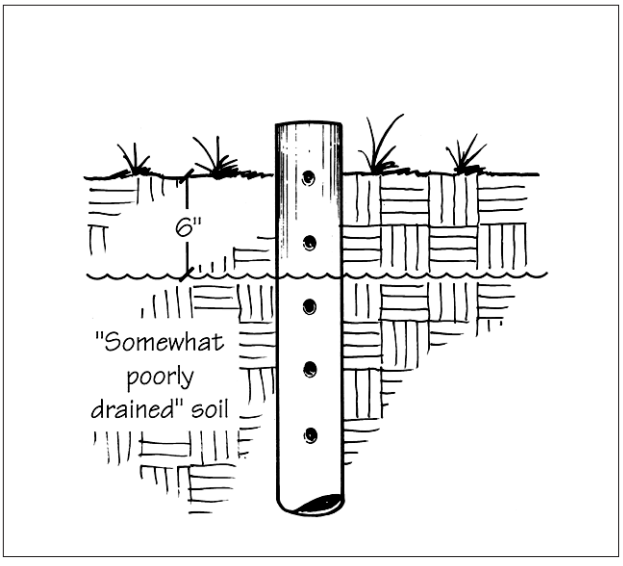
Most consultants visit a site only once, and mark the boundaries of the wetland by examining the soil, vegetation, and water table. A common pitfall is to identify water-loving plants on the site, and then, following topography, assume the plants define the wetland's boundary. Biologists know, however, that the plants that thrive in standing water also aggressively colonize drier areas nearby. For instance, alders that like wet soil will spread upslope into areas where the water table is well below the surface during the growing season. Defining the wetland by the presence of those trees allocates much too large an area to the environmentally protected zone — yet it often happens.

Sticking to the standard. The federal rules categorize soils into three types: "very poorly drained," "poorly drained," and "somewhat poorly drained" — terms that are more precisely defined than they sound. To qualify as a wetland by the 1989 Corps of Engineers manual, a site with soils that are very poorly or poorly drained must have groundwater within 12 inches of the surface for seven continuous days sometime during the growing season. Somewhat poorly drained soils must have the water within 6 inches of the surface for the same length of time to be considered wetlands.

> The presence of water-loving plants does not always mean a wetland exists

My company's technique is to dig shallow test wells throughout the site that is suspected of being a wetland, and to monitor the water level in the wells for the whole growing season. That way, we can determine where on the property the exact hydrological conditions described in the rule book are found. In most cases, we find that the portion of the site with wetland groundwater conditions is smaller than the area that has poorly drained soils or water-loving plants.

How much smaller? Well, on one Vermont site, my company's findings reduced an earlier consultant's 30-acre mapped wetland to just the bottoms of the natural gullies or ditches that drain the



Wetland classification depends upon soil type and the depth of standing groundwater. A site with "somewhat poorly drained" soil, for example, must have standing water 6 inches below the surface to be considered a wetland.

area. Instead of having to request a 15-acre fill permit, our client's permit had to apply to less than half an acre of wetland. On another Vermont project, we remapped a wetland that had occupied four acres of a five-acre site, again restricting the protected area to just the ditch bottoms. In both of these cases and in others throughout New England, the permits were received and the projects moved ahead.

As you might expect, regulators resist this approach. Sometimes they object that although the water table did not meet the criteria in the test year, it might some other year. However, we are addressing the question "Is this site a wetland?" not "Has it ever been a wetland?" or "Might it possibly become a wetland?" The entire state of Kansas was once at the bottom of the ocean, but it is no longer whale habitat. So far, our method has always held up on appeal.

Cost factors. Wetland analysis isn't cheap — to be successful with regulators, you need professional help. But the cost can be reduced if the builder or developer digs and monitors the wells. And since many properties affected by wetland permitting are valuable areas in prime locations, the cost can be well worth it. On a small lot, correct evaluation may mean the entire site is free from wetlands, and the builder can escape the permitting process completely.

For more information, contact Natural Resource Consulting Services (67 W. Shore Rd., Grand Isle, VT 05450; 802/878-4800). ■

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Vermonters Pay a Price for High Living

Homes on high-altitude ridges and hillsides are coming under stiffer zoning and environmental constraints, according to a report in the March 1 Burlington *Free Press*. The District 4 Environmental Board, a regional arm of the state Environmental Board, drew public attention when it responded to a citizen complaint by slapping a builder and his customers with a $1,000 fine for violating the land-use permit issued for a building site on the north side of Pease Mountain in Charlotte.

Any development higher than 2,500 feet above sea level comes under state review based on Vermont's Act 250, a 1970 development control law. Some single-family homes, if served by a road longer than 800 feet, also must receive Act 250 permits. The Charlotte homeowners violated their permit's conditions when they cleared too much land and painted their house white rather than using brown earth-tones, according to the district Environmental Commission Coordinator.

Ridges, valued for their scenic beauty, are a common feature of the landscape in mountainous Vermont. The high cost of providing roads, power, and septic facilities to these inaccessible areas has restrained building there in the past, but home buyers with money to overcome such obstacles are continuing to encroach on undeveloped ridges and hilltops. Although many ridge tops are not covered by the state's environmental laws, high-altitude land is increasingly coming under town zoning restrictions, reports the *Free Press*. ■

Boston Area Short on Contractors

With New England in a remodeling mini-boom, skilled tradesman and remodelers are busy — and scarce.

The New England remodeling industry has become a seller's market, according to a report in February 10's Boston *Globe*. As a result, remodeling customers in the Boston area often have to wait months for work to start. Contractors are starting to demand a healthy profit on jobs, the *Globe* reports, raising their rates as much as 20% above the bare-bones levels they charged during the recent recession years.

The contractor shortage is a product of good economic times, but also the residue of recent bad times. Low interest rates and a healthy New England job market are pumping up the demand for remodeling services. But buyers are competing for a supply of contractors that shrank sharply after the real estate crash of the late 1980s. Massachusetts lost over 50,000 construction jobs during that plunge, and the Builders Association of Greater Boston estimates that a third of the state's builders have gone out of business.

Contractors who survived the recession have their own supply problem to contend with: the shortage of help. Many of the skilled tradespeople who lost their jobs during the recession have either found another line of work or headed out of state. This recession-related decline in the population of skilled construction workers compounds a nation-wide trend: As skilled workers get older and give up the trades, fewer young people are entering construction to take their place. Instead, talented young people are being attracted to growing fields like health care, electronics, and communications, where they see more opportunity and job security. ■