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What Do We Know about Commercial Moss Harvest in the Pacific Northwest?

BY JERI PECK

It's easy to overlook tree moss—it's so common in the Pacific Northwest. For some folks, though, the green drapery of our forests looks a lot like greenbacks. Over 81.5 million pounds of forest moss were harvested in the Pacific Northwest in 1999 alone. Local and migrant subsistence and commercial harvesters work part- to full-time seeking out mossy spots, peeling thick pelt-like mats off trees and shrubs (and increasingly logs), packing it into sacks, and trudging it back to buying sheds for less than 50 cents a pound. The sheds air dry the moss, compress it into 25-pound bales, and sell it to national and international floral greens wholesalers who then sell the moss for \$2-3 a pound. It could end up almost anywhere—Pacific Northwest moss is shipped to over 44 international destinations and throughout the United States.

Why We Care

Over a third of Pacific Northwest land managers have received requests for moss harvest permits for their land, but most moss is still harvested from federal lands. Regulations for nontimber forest products like moss have only recently appeared in national forest management plans, and guidelines developed by armchair experts aren't always operational.

Case in point: Restricting harvest of tree moss to "every other stem" on the Siuslaw National Forest allows harvest



PHOTOS COURTESY OF JERI PECK

(above) Mats are considered harvestable when you can easily peel them away from their host.

(below) Mats on vertical stems are particularly slow to regrow, like on this tagged vine maple stem that was harvested a decade ago.



from 50 percent of stems on one day, 50 percent of the remaining stems the next day, and so on without violating permit guidelines.

Regulations also affect neighboring landowners: After moss harvest on the Hebo Ranger District was capped at 110,000 pounds per year, harvest on nearby Tillamook BLM land shot from 11,000 pounds per year to over 200,000 pounds per year, prompting them to

sell fewer permits.

Poaching off private and public lands, including protected areas like the Olympic National Park, has also increased in recent years.

Finally, mosses and liverworts are important to healthy forest ecosystems, providing nesting material and food for birds, salamanders and invertebrates, and storing and cycling nutrients and water. Continued moss harvest in forests managed toward old-growth condition (Late Successional Reserves) has sparked opposition among ecologists concerned about how little we know about the impacts of harvest on ecosystem functions. While modern forest management is able to draw on over a century of silvicultural research, moss harvest has been studied for barely a decade.

What We Actually Know

Most research on commercial moss harvest has been on the Hebo Ranger District, Siuslaw National Forest, in the coastal fog belt of northwestern Oregon, and on Salem BLM resource areas in the western Oregon Cascades. Commercial moss includes around two dozen species of mosses, half a dozen liverworts, as many lichens, and a couple of vascular plants.

In the wet Coast Range, mossy sites may have approximately 140-1,700 pounds per acre at 30 percent moisture content (typical in the Coast Range). The drier Cascades may have harvestable moss below 1,650 feet in elevation and less than 165 feet from perennial water, but even then only a third of likely areas may have any moss at all—and the mossiest sites may not exceed 550 pounds per acre at 15 percent moisture content (typical for the Cascades).

In the past, high grading left small moss mats behind, so that the same site could be reharvested within 10-15 years. Today, crews strip shrubs and trees of every mat that will come off. Of vine maple stems on Hebo harvested this way a decade ago, most are barely half covered with moss today. Even the best sites in the Coast Range

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will require 15-plus years for regrowth and 25 years for average sites. Sites in the drier Cascades will need even longer rotations.

What We Can Do

Sustainable strategies for the commercial harvest of moss will reduce pressure on our parks and preserves, facilitate community-based industries, and ensure long-term economic and ecologic stability. Some things we can do include:

- Allow commercial moss permits immediately prior to felling on all forestlands scheduled for timber harvest. Private landowners can obtain contact information for potential harvesters from nearby federal agencies that issue moss harvest permits.
- Inventory moss on lands open for commercial moss harvest to set appropriate harvest permit levels. Commercially harvestable quantities of forest moss are unlikely above 1,500 feet, greater than 100-150 feet from a source of at least seasonal water, under less than 50-year-old conifer overstories, or in the understory of stands lacking hardwood trees or shrubs.

- Assess moss regrowth rates on lands open for commercial moss harvest to determine necessary rotation periods. Moist coastal areas may expect rotation periods on the order of 15-30 years, while drier inland areas can expect to require 25-40 years.

- Allow only personal-use harvest in areas with low natural levels of moss, which may include much of the Cascade Range and the southern half of the Coast Range. Moss harvest programs in these areas cost much more than permit revenues generate, the ecological impacts are greater and harvesters can

be directed to other, mossier areas.

- Prohibit commercial moss harvest in areas managed toward old-growth condition until future studies can demonstrate a negligible effect of harvest on ecosystem function.
- Develop truly operational guidelines for harvest. The exact harvesting area should be indicated, not simply where the vehicle must be parked. Permits should be issued in increments of 50 pounds, regardless of water content, and buyers required to retain each permit upon sale. Harvest should be restricted to only trees and shrubs less than 20 feet off the ground and more than 150 feet (paced, not slope corrected) from perennial water. No tools of any kind (rakes, machetes) should be allowed in the vehicle or on site.
- Allow local law enforcement to check nontimber forest product permits and keep officers informed of which areas are not open for legal harvest. Most poachers simply wait until agency law enforcement officers have retired for the day before hauling out their substantial illegal harvest.
- Develop strategies to control illegal harvest—before you join the 40

percent of landowners who know of illegal harvest from their lands. Cooperative efforts with neighboring landowners could help regulate access and minimize risk. This may ultimately be the most important factor in sustainable management.

A decade of research has made it clear that commercial moss harvest is important economically and ecologically and that claims of universal and rapid recovery are just as wrong as claims of hundred-year rotations and utter devastation. Sustainability is a matter of balance. ♦

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