Native American Forestry Combines Traditional Wisdom with Modern Science - The Solutions Journal

Courtesy of the Coquille Tribe

Coquille Tribe member Elliott Ivy participates in the tribe's "Kids in the Woods" event in March 2011 in Oregon's Coquille Forest. After regaining some of their ancestral lands in 1996, the Coquille Tribe is working to create a forestry model that is both sustainable and profitable.

We are standing on the knife's edge of a ridge in Oregon's rugged Coast Range, peering down into a steep draw with a gurgling creek at the bottom. The hillside, pockmarked with tree stumps, also bears a patchy covering of shrubs and soft-stemmed plants: evergreen huckleberry, Oregon grape, *Ceanothus*, bracken fern, trailing blackberry, beargrass. Among them, tiny conifer seedlings unfurl their tips into the sunshine.

Bisecting this recently logged site is a band of big old trees and tall dead snags with a thicket of shrubs in its moist understory. This remnant, left behind by the loggers, as Tim Vredenburg explains, is the "lifeboat" intended to sustain the resident animals into this forest's next life.

"The latest science tells us that typical industrial forestry doesn't provide enough habitat for early successional wildlife species." Vredenburg is referring to research by University of Washington forest ecologist Jerry Franklin and others, which shows that habitat needed by young-forest mammals and birds is in short supply on most

industrially logged forestlands. Says Vredenburg, “We try to leave enough vegetation on the ground to carry them through the first ten years or so, until the trees start to close in.”

To some, the site might look like the product of typical industrial forestry. It has, after all, been clear-cut, which is the most common (and most controversial) way to harvest timber in the forests west of the Cascades.

But Vredenburg, head forester for the Coquille Indian Tribe, invites his visitor to take a closer look. He points out subtle differences on the ground. The generous cover of live trees, snags, and shrubs left on the site is more than the law requires. Industry foresters prefer not to have any unnecessary vegetation competing with the young Douglas firs, which they typically harvest on a short rotation (when trees are between 35 and 50 years old). But the Coquille foresters have made room for a little competition by using longer harvest cycles. “We aren’t planning to harvest these trees for a long time, 80 to 100 years,” says Vredenburg. Furthermore, the planted seedlings in the Coquille’s forest aren’t a Douglas fir monoculture, as one might expect; red cedar and the rare Port Orford cedar are also in the mix. Both of these conifers are cultural treasures for the Coquille Tribe: their ancestors made houses and canoes out of the wood and wove the inner bark into garments and ceremonial blankets.[1]

Vredenburg is director of the Land, Resources, and Environmental Services Department of the Coquille Indian Tribe, headquartered in North Bend, Oregon. This 36-acre site is part of the tribe’s Chu-aw Clau-she timber sale—the first logging conducted by the tribe since the Coquilles gained control over a small fraction of their ancestral lands in 1996.

Coquille tribal chief Ken Tanner said a blessing over this site, as he always does, before the first chainsaws snarled to life. “Any time I talk to one of our foresters, I try to stress the idea of balance,” Tanner says. “We don’t own the forest; it’s a part of our organic being, which we share with all the other creatures and creations. Anything we take, we honor with prayers. We make sure those forest spirits—the spirits of the tree or the salmon, as it might be—tell their relatives that we’re good people, so they’ll continue to be there for us.”

A Different Kind of Forestry

Much of the Coquille Forest lies in the watershed of the middle fork of the Coquille River. The ridges east of Coos Bay represent a patchwork of diverse ownership, an artifact of nineteenth-century federal land grants. The tribe’s closest neighbors are a large timber company, whose recent harvest sites look like clean dinner plates, and the federal Bureau of Land Management, whose forests are dog-hair thick with conifers between 80 and 120 years old.

The Coquilles, like many other forest-owning Indian tribes today, are attempting a different kind of forestry.

Vredenburg was trained as a biologist. His sandy hair, blue eyes, and surname hint at his European ancestry, but he’s devoted his career to the Coquilles’ vision for their ancient homelands. “There’s a tendency in today’s culture,” Vredenburg says, “to fixate on a particular set of values within a forest, or an ecosystem: jobs, or timber receipts, or old growth, or fish habitat—you name it, there’s a position. The tribe’s

position is to value all of it. The idea of reserves, of drawing a line around a forest to keep people out, doesn't make sense to the Coquilles. But neither does the idea of taking everything away and leaving nothing for future generations."

Coquille Forest timber is keeping local loggers employed and supplying regional family-owned sawmills. And in the summer of 2011, the Coquille Forest received certification under the Forest Stewardship Council (FSC), a worldwide certification body that upholds rigorous environmental, social, and economic standards for managed forests.

Around the world, about 353 million acres of forest are certified under the Forest Stewardship Council.[2] They include forestlands of three other Indian tribes: the Menominee in Wisconsin, the Hoopa Valley in northern California, and the Confederated Tribes of Warm Springs in central Oregon. Certification is a major milestone for the Coquilles, says tribal chairman Ed Metcalf. "Until these forests were taken from us, our ancestors managed them for the long-term welfare of the land and the people. It's fitting that the FSC recognize our efforts now."

Profit, People, and Planet

The Pacific Northwest has been embroiled in a conflict over forest use and management for three decades. Politically, you might envision it as a sort of seesaw, with your stereotypical tree-sitting hippies at one end and your grizzled chainsaw-toting Paul Bunyans at the other. Which end of the seesaw is up at any given moment depends on the state of the Northwest's economy. Both factions claim the label of "sustainable."

To be sustainable in the eyes of the Forest Stewardship Council, forestry has to be environmentally appropriate, socially beneficial, and economically viable. It must achieve a "triple bottom line" that honors "profit, people, and planet," as the *Economist* magazine puts it.[3]

Here in the Northwest, forestry's profit column is generally in the black, and the planet column is more solvent than it used to be. The forestry industry has been profitable ever since the first timber barons arrived on the West Coast in the late nineteenth century, but at the cost of a bruising boom-and-bust economy, social instability, and environmental damage. Thankfully, timber harvest is kinder to the forest than it used to be. Timber operators are bound by a host of laws and practices aimed at protecting the environment on public and private forestlands.

But as for the third bottom line, the people one, there's little consensus within the larger Northwest community about whether environmental protection of forests is too heavy-handed, or shamefully lenient, or about right.

Public opinion remains divided over clear-cutting, old-growth reserves, forested buffers along streams, management of wildlife habitat, and spraying of herbicides. The debate is particularly sharp when it concerns logging on public lands, but private-land practices also face regular criticism.

Agencies like the Oregon Economic and Community Development Department and the Oregon Department of Forestry are partnering with universities and nonprofits like Ecotrust and Sustainable Northwest to develop statewide strategies for a forest industry that meets the "triple bottom line." And, in the past five years, the Forest

Stewardship Council has certified more than 200 forest-related enterprises in Oregon.[2]

Holistic Stewardship

"We get many things from the forest—canoes, baskets, clothes, shelter, fir, cedar, spruce, beargrass, camas—and we use all of these things," explains Chief Tanner. "But they also have a spiritual value which we honor as we honor our ancestors. What we take, we try to give back. What we don't need, we try not to take."

Gail Wells

To help sustain wildlife into the next forest rotation after an area has been clear cut, Coquille foresters leave mature trees, standing dead snags, fallen wood, and living shrubs and other plants on the forest floor.

Ten thousand years ago, ancestors of today's Coquille Indians lived along the southern Oregon coast from Coos Bay to Cape Blanco and along the inland valleys of the Coquille River drainage. A common misconception among European Americans is that Indians lived passively within their environment, "at one with nature." On the contrary, aboriginal peoples actively managed their landscape for their own objectives, using the technologies available to them.[4,5] For coastal tribes and others, the key management tool was fire. The people regularly set fire to meadows and valleys to maintain grassy cover, keep brush at bay, improve habitat for deer and elk, and cultivate fire-adapted plants that were important sources of food and fiber.

Hence, the land the first Euro-Americans took to be a pristine, park-like wilderness was in fact the product of thousands of years of indigenous land management. "This Countrey must be thickly inhabited by the many fiers we saw in the night and culloms of smoak," wrote Robert Haswell, Captain Robert Gray's first mate, as he viewed the land from his ship off Cape Blanco in August of 1788. Haswell also noted that "the land was beautifully diversified with forists and green verdant launs."[6]

One important reason for burning was to prevent the vigorous Douglas fir from invading clearings. "The Douglas fir timber they say has always encroached on the

open prairies and crowded out the other timber," recalled Lucy Thompson (Che-na-wah Weitch-ah-wah), a Yurok woman of northern California, in 1991. "Therefore they have continuously burned it and have done all they could to keep it from covering the open lands."[1]

Diaspora

In the middle decades of the 1800s, the Indians of the Oregon coast were abruptly cast out of their lands, and European American settlers moved in. Prairies became pastures, valleys became farm fields, forests were cut down, wild animals and plants were replaced with domestic ones. Property lines were inked on maps, the new owners halted Indian burning, and trees started to encroach on the meadows.

In 1851 and 1855, the Coquilles and neighboring tribes signed treaties that would have allowed them to keep some of their ancestral homelands. Congress never ratified these treaties. Instead, it passed land claim laws in the 1850s and 1860s that opened the door to white settlement of Indian lands. By 1856 most Coquilles had been forcibly removed to the Coast Reservation, north of the Umpqua River.[7]

The next hundred years were ones of diaspora for the Coquilles. As the reservation's lands were nibbled away piece by piece and offered to white developers, some Coquilles made their way back to their old homes, where they discovered that their traditional fishing and gathering places were now on private property. They joined remnant, mixed-blood families living around Coos Bay and up the Coquille drainage, descendants of Coquille women who had married white men in the 1850s and had not been transported to the reservation.[1]

In the mid-1950s, in a policy thunderbolt, Congress terminated the trust relationship between the United States and 109 tribes and bands, including the Coquilles. The stated goal of termination was to reduce Indians' dependence on the government and to hasten their assimilation into mainstream American life.

For Indians, it was a disaster. Lands held in common were split into individual allotments, forests and other assets were sold off. Access to ancestral hunting and fishing grounds was cut off, and tribes lost the means to support themselves.

Termination nearly annihilated his people, says Chief Tanner. "We were invisible. No one could see us, and we couldn't see ourselves."[8]

Self-Determination

In the early 1980s, Coquille tribal members mounted a long struggle to regain their tribal status and some of their ancestral lands. Their champion in Congress was Oregon's Senator Mark Hatfield, who also spearheaded restoration proposals from two other terminated Oregon tribes, Grand Ronde and Siletz. On June 28, 1989, President George H.W. Bush signed the law that restored the Coquilles as a federally recognized Indian tribe.

Gail Wells

Tim Vredenburg (left), the head forester for the Coquille Tribe, talks with tribal forest engineer Ed Vaughn. Behind them is a newer forest stand, planted about 15 years ago.

The 5,400-acre Coquille Forest was created by another act of Congress in 1996. The restored land, carved out of the Bureau of Land Management's Coos Bay District holdings, comprises 14 parcels in the Coquille River drainage, interspersed with other BLM lands and privately owned forestlands. The Coquilles do not own fee title to the land, but have exclusive management rights in perpetuity.

The tribe had initially petitioned for 59,000 acres, but congressional compromises and deal-cutting whittled their portion down to less than one-tenth that amount. In addition, the terms of the restoration require the Coquilles to abide by the 1994 Northwest Forest Plan, which governs National Forest management in Oregon, Washington, and northern California.

The Northwest Forest Plan requires broad, untouched buffers of forest along streams. Because the Coast Range is spiderwebbed with streams, and because Coquille forestland is in small pieces—the biggest being 1,380 acres—this provision effectively restricts more than half of Coquille Forest timber from commercial harvest.

Tribal leaders say they intend to recover more of their ancient homelands in the future. In the meantime, they're doing their best with what they have. "Our intent," says Chief Tanner, "is not only to protect our cultural resources, but to lead by example—to display the best, most responsible, most respectful resource management not only on tribally owned lands, but within our much larger ancestral territory."

Coming into Its Own

Over the past two decades, Indian forestry has been gaining in both profitability and environmental performance. There is also growing collegiality and mutual respect between tribal foresters and the Bureau of Indian Affairs, the federal agency entrusted with Indians' welfare. A boom in tribal enterprises, particularly casinos, has generated capital for further economic development. And more Indians are pursuing

degrees in forestry, fisheries, wildlife science, ecology, and other land-management disciplines.

Nationwide, there are 302 forested Indian reservations, containing 7.7 million acres of timberland and another 10.2 million acres of woodlands.[9] A panel of experts who reviewed forest practices on Indian reservations in 1991 and again in 2001 found that ecological conditions and management practices on tribal forests had improved. Tribes were paying more attention to wildlife habitat and forest diversity and complexity, and they were integrating these environmental goals with timber production.

The panel concluded that, while Indian forests nationwide still face major challenges —invasive insects, high fire risk, lack of home-grown management expertise, lack of funding, and limited marketing opportunities—Indian tribes can provide a model for forest management.

The panel's chair for both reports, John Gordon, is an emeritus forestry professor from Yale and one of academic forestry's most respected scholars. "Because the cultural identity and continuity of tribal communities are so dependent on forests," he and his colleagues write in a summary of the panel's findings, "tribal governments have a profound sense of stewardship for the land and its resources."[9]

Gordon consulted with Coquille tribal leaders in the mid-1990s as they developed a sustainability strategy for the ancestral forestland they were then petitioning to recover. "The Coquilles are the only forest managers in their neighborhood who are meeting both their timber-production and their environmental targets," Gordon told me. "They are very committed to long-term, environmentally sound forest management."

Respect

It's not necessary to invoke the noble savage stereotype to grasp that land has a different meaning within an indigenous culture than it does within an industrial culture. The struggle of today's Indians to regain their lands is part of their struggle to regain and remember themselves as indigenous peoples.

"The Coquille people have been in this place since time immemorial," says Metcalf. "Not only do our forests provide us with food, fiber, and shelter, but they're a critical part of our identity."

Courtesy of the Coquille Tribe

Tribal foresters harvest trees in the Coquille Forest. The standing trees in the background were left untouched in order to maintain wildlife habitat.

In the Siletz language, the word for Earth may be translated roughly as "made for you."[8] People who depend on the land learn to pay attention to cycles of birth and death, of plenty and scarcity. Over many generations, the Indians of the Oregon coast learned where the best beargrass patches were and how to keep them flourishing, when to burn the high meadows of the summer campground to attract the elk and to keep the Douglas fir at bay, how to harvest and process the inner bark of the Port Orford cedar for making blankets. "I come from a people who did not have a word for preservation, or for the environment, or for ecology," says Esther Stutzman, a storyteller of the Komema Kalapuya people of western Oregon and a member of the Confederated Tribes of Siletz. "The word they had was *respect*."[10]

Indian approaches to land management are different because they reflect a different social contract between people and the land. By *social contract*, I mean a broad understanding of how wealth is created, and by whom; who gets how much of what kinds of resources; and who decides how to distribute these resources. Our larger society is still under the influence of the post–World War II social contract, which was negotiated at a peculiar and unprecedented point in history. That contract, heady and expansive, was a decisive about-face from the gloomy penury of the Great Depression. It called for American businesses to use nature in the service of creating and selling products, maximizing prosperity, and making a middle-class standard of living available to more Americans than ever before. The very term *natural resources* highlights this understanding.

In the Pacific Northwest, timber companies, as the region's economic engines, were the chief mediators of this contract. They faithfully carried out the contract's provisions, fulfilling what most people then saw as the greater good.

The industrial social contract held valid for two generations. But now, from the perspective of our tellingly named postindustrial society, we're reckoning with its environmental and social costs. And we have lost trust in the old social contract to deliver the goods that are now needed.

What are those goods? For the forest industry, it's raw materials in sufficient and consistent quantities, a stable policy environment, and society's permission to keep practicing profitable forestry. For the environmental community, and indeed for everyone who cares about the future, it's assurance that the forest will be sustained for generations to come. For the larger society, it's confidence that the legal framework around forest management is fair and functioning. For forest-based communities, it's confidence that the forest-products economy will stick around and share its prosperity with the whole neighborhood.

Imagine Ourselves

Indigenous values, as reflected in modern Indian land management, could help the rest of us imagine what a new social contract might look like. Keeping the Coquilles' approach to forest management in mind, perhaps we could picture an economy that doesn't prize unlimited growth, doesn't consider land as just another fungible asset, doesn't revere the iron law of the market, doesn't conflate profit with prosperity, and doesn't subscribe to the peculiar accounting that keeps environmental costs off the books.

"The two ways of seeing the land—the Euro-American way and the indigenous way—are complementary, and they have a lot to share with each other," says forest ecologist David Perry. "But they are different. And I believe the indigenous way is more likely to lead us into a sustainable future." Euro-American science and technology are preoccupied with analyzing and generalizing, Perry notes. "Yet, as Wordsworth said, 'We murder to dissect.' Western science must generalize—that's one of its key strengths. But as we move into management of whole ecosystems, we can only generalize so far. Place becomes crucial. That's why native knowledge, rooted in place, is important in finding successful ways to manage forests in the future."[11]

Thoroughly Modern

The Coquilles' forest-management plan calls for the tribe to manage "*intensively* for spiritual, cultural, biological, recreation, aesthetic, and economic values" (italics mine). This requires balancing modern land-management tools and techniques —rooted in the scientific tradition that brought us the industrial social contract and all its blessings and shortcomings—with the traditional ethic of tending, harvesting from, living within, and caring for the land over many generations.

The plan calls for fairly conventional silviculture, although tilted several degrees toward environmental protection. It identifies a sustainable harvest of timber and other forest products, based on a careful periodic forest inventory. It calls for protecting wildlife habitat and retaining ecologically valuable components of the forest, such as big trees, snags, and chunks of dead wood. Tribal foresters take special measures to protect nest sites of great blue herons, osprey, hawks, and golden eagles, which are culturally important to the tribe. They thin younger stands, 20 to 40 years old, to encourage fast growth in the remaining trees and to promote a mix of shrubs and other plants to provide food and shelter for deer, elk, and other wildlife.

Gail Wells

A Douglas-fir seedling in the Coquille Forest. While it is standard in industrial forestry to harvest Douglas firs when they are between 35 and 50 years old, Coquille foresters wait 80 to 100 years to harvest.

The foresters leave a wide swath of conifers along streams as riparian reserves, as the Northwest Forest Plan requires. They take out some of the streamside alders, willows, and other deciduous trees and shrubs and plant cedar, spruce, and Douglas fir. Eventually, these conifers will mature and fall into the stream, improving habitat for coho salmon and other fish and amphibians.

Through all this, foresters do what they can to protect ancestral occupation sites and important gathering places and to encourage plants and animals that were important in ancestral times for food, fiber, tools, and medicine.

At Home in a Place

The Coquilles are thoroughly modern forest managers. They use chainsaws and skidders and, when they need to, herbicides. They clear-cut, because clear-cutting is both profitable and biologically appropriate in most Douglas fir forests west of the Cascades. They treat forestry as a moneymaking enterprise, selling their logs to sawmills in Coos and Douglas counties. Yet their mission and values come from 10,000 years of being rooted in a bountiful land.

To be sure, having values and acting on them are two different things. Indian tribes are just beginning to manage forests in a twenty-first-century economic context. In

today's global marketplace, American forest products must compete with cheap wood from countries that lack basic environmental safeguards and worker protections. The Coquille Tribe will undoubtedly feel pressure to cut too much timber too fast, to chase profit in the name of prosperity. Time will tell whether traditional cultural values will be an effective counterweight against such blandishments.

That said, being at home in a place tends to produce a long view. "The Coquilles have to live with their decisions," says John Gordon. "They can't just say, 'We love wilderness,' and then go home. If they clear-cut, they have to look at it. If they burn, they have to breathe the smoke. If they set aside portions of their forest away from management, they have to live with the reduced income. They've been at the same address for thousands of years, and they intend to be there for many more. If anything is conducive to long-term management, that's it."