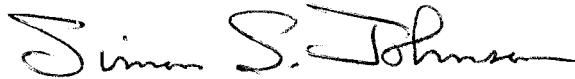


An Abstract of the Thesis of

Gail Elizabeth Wells for the degree of Master of Science in Scientific and Technical Communication presented on July 18, 1885. Title: The Tillamook: Stories from a Created Forest.

Abstract approved:



Simon S. Johnson

Starting more than 60 years ago, a complex of four forest fires occurring at six-year intervals burned almost 400 square miles of virgin Douglas-fir forest in the northwestern Coast Range of Oregon. The area, which became known as the Tillamook Burn, was the focus of an unprecedented reforestation effort drawing on the combined skills and resources of many Oregonians. Because of the cooperative character of the reforestation and the wide agreement of opinion on its rationale—to furnish timber for future generations—the Tillamook State Forest, as it was renamed, came to occupy a distinct niche in the culture of the West, at once shaping and exemplifying Oregonians' cultural values regarding forests.

In recent years, American culture has become highly divided with respect to the relationship of humans with “nature.” At the same time, the trees planted on the Tillamook Burn are reaching maturity and are being prepared by managers for their original destiny, to be cut for timber. Yet the Forest no longer exemplifies near-unanimous cultural values about the purpose and worth of forests. The original rationale of the Forest will likely be strongly

challenged by disparate competing interests, and as the timber becomes more valuable those challenges will likely be met with equal force by defenders of the status quo. These conflicts may harden into a standoff such as now exists between timber interests and environmental activists and may eventually result in distinct winning and losing factions. However, if certain conditions are in place, the Tillamook's unique cultural associations may make it a crucible in which a more inclusive, participatory, and universally acceptable forestry can be forged.

©Copyright by Gail Elizabeth Wells
July 18, 1995
All Rights Reserved

The Tillamook: Stories from a Created Forest

by

Gail Elizabeth Wells

A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Science

Completed July 18, 1995

Commencement June 1996

Master of Science thesis of Gail Elizabeth Wells presented on July 18,
1995

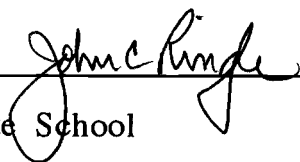
APPROVED:



Major Professor, representing Scientific and Technical Communication

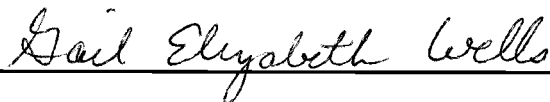


Dean of College of Liberal Arts



Dean of Graduate School

I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.



Gail Elizabeth Wells, Author

Acknowledgements

Many thanks to Simon Johnson and Chris Anderson for their patience in reviewing multiple drafts of this work and for their helpful comments on each one. I am grateful also to Marion McNamara, Kathy Moore, Lex Runciman, Steve Radosevich, and Bruce Weber, whose kind encouragement and skillful critiques of my writing have helped me immeasurably.

Thanks also to Royal Jackson, whose oral-history work among the Northern Cheyenne sparked my interest in cultural history, and Paul Farber, whose thoroughness and care in his work remind me to honor the complexity of real life.

I thank George Brown and Lisa Mattes, who kindly gave me the flexibility I needed in my work schedule to complete this long project. Finally, I owe a big debt to my husband, John, and my children, Gavin and Mary, who have supported me from start to finish.

Table of Contents

Introduction	1
Chapter 1. Prologue: The legend.....	8
The fires.....	8
The restoration.....	13
The new forest.....	15
Chapter 2. Timber forever.....	18
A cultural landscape.....	18
Tillamook legend and western myth.....	20
Rejecting the old myth.....	22
Changing times.....	26
Timber forever?.....	29
Finding a workable forestry.....	32
Chapter 3. Legend and fact.....	34
Fire.....	34
The legend-spinners.....	36
The Lyda story.....	38
The salvage story.....	40
The management story	43
Chapter 4. Field trip: Taming the wild West.....	45
Unruly goings-on.....	45
Managing public use.....	46
The soft approach.....	48
The working forest.....	51
Optimism and faith.....	53
“By hook or by crook . . . ”.....	54

Table of Contents (Continued)

Literature cited.....	57
Works consulted.....	61

The Tillamook: Stories from a Created Forest

Introduction

When I set out to write this book, I wanted to tell the story of a forest in a broad way, a way that would include the stories of the people who knew it and still know it, the people who were and still are influenced by it, and the people who hold its fate in their hands. I chose the Tillamook because all the right ingredients were there.

The story of the Tillamook Burn has fascinated me ever since I was a child growing up in Coos Bay, the heart of Oregon's timber country ("lumber shipping capital of the world," as the town's boosters bragged in those days), daughter of a sawmill owner and dealer in logs and lumber. The postwar economy was at its height then, and early in life I breathed an atmosphere thick with phrases like "board feet" and "saw kerf" and the possibilities of a timber boom that never seemed to stop. "The trees will grow *back*," my father would say with exasperated patience whenever anyone expressed distaste at the sight of a clearcut.

We grew up together, the Tillamook forest and I. Out between Tillamook and Forest Grove, the trees were growing back, just as my dad said they would. He and my mother told me about the Burn—the several burns, actually. They remembered the ashy smoke columns and the three-inch headlines in the *Oregonian*, and the bizarre regularity of the fires, six years apart, one right after the other. They told me about the school children who went out from Portland and planted the trees that now cloaked the black earth. My father,

especially, stressed the millions of board feet of timber those trees would provide to me and to my children some day.

When I got a little older, I learned that timber booms don't last and that trees don't always grow back. The first Earth Day was celebrated the year I entered college. I could see that not everybody held the same ideas about forests that I grew up taking for granted. Many people I encountered had different opinions about what forests were, what they meant, what they were *for*. I began to understand that forestry was not a simple process of harvest-and-replant-the tree, but a complex set of issues that encompassed science, economics, politics, and human hungers and drives.

During those years and afterward, people were battling over whether to log the small amount of old-growth forest left in the Northwest. This conflict became the defining issue for the emerging environmental movement here, and the issue that I think has polarized regional opinion more than any other. It seemed to me, however, that there was less interest generally in young, second-growth forests. I began to wonder what would happen to these forests as their trees grew big enough to log. Would there be the same bitter conflict? Or would some consensus emerge? And so my attention was drawn once again to the Tillamook. The story of the Burn seemed to be entering a new chapter, and the logical next question was, "What happens now? We've had the beginning and the middle; now what's the end of the story?"

I didn't know, so I set out to tell the story myself.

Telling a forest's story, I found, is a complicated business. It doesn't exactly lend itself to an opening like, "Once there was a king

who had three beautiful daughters; and one day there came into the castle a mysterious knight all in black . . . ” This sort of opening sets up an expectation of a beginning, a middle, and an end, with cause-effect relationships drawn for all to see, and all the loose facts neatly woven back in. A forest, in contrast, is not a story; there’s no beginning and middle and end. A forest is processes—a complex dynamic of events that precede and follow other events; layers of cause and effect with multiple feedbacks and short circuits and, sometimes, catastrophic interruptions. The event that begins one process may end another, or it may function as some midpoint in the working-out of a third process; and all these processes may be linked in a host of other ways.

People describe these processes in terms of stories all the time—we do it because that’s the way our minds work—but the fit is not always neat. For example, consider the idea of a “climax” forest. In the dominant conceptual model of the development of Douglas-fir forests west of the Cascades, the forest is assumed to begin after a catastrophic fire—a “stand-replacing” fire, in the vocabulary of silviculturists. First to appear on the burned land are soil organisms: fungi, bacteria, and yeasts. Next are the low-growing plants, the grasses and leafy, soft-stemmed forbs: hawksbeard, dandelion, pearly-everlasting, thistle. Then come the hardwood shrubs: blackberry, vine maple, blackcap, ceanothus. All this time Douglas-fir and hemlock seeds are being blown into the burn by the wind, or carried by birds from nearby trees. The seeds (Douglas-fir seeds look like little brown dots with goldfish tails) drop, sprout, and take root, eventually elbowing out the grasses, forbs, and shrubs. After a long

time, centuries, the Douglas-fir come to dominate, and the hemlock retires to the shadows. After more centuries, the biggest, oldest Douglas-firs (“ancient” or “decadent,” depending on your perspective) topple and fall. In the raw new patches of sunlight, hemlock stretch upward and drop their seeds, which germinate in their turn. Eventually the hemlocks rise above the sunken, moss-covered bodies of the old Douglas-firs, and the forest enters its climax.

Who says it’s a climax? We do, because stories are such a comfortable way for us to convey and receive information, to absorb wisdom. The progression (the word, too, begs the question of story) from naked land to clothed, from small living things to large, from empty landscape to full, makes casting it as a story seem natural and unremarkable, but the assumption is arbitrary just the same. For all the forest cares, the climax might as easily come in what we call the middle, when the blackberry and vine maple grow eye-to-eye with the Douglas-firs.

Who says what’s the beginning and what’s the end? Who says what’s the cause and what’s the effect? The forest won’t tell us, so the storyteller has to.

Thus, even if the story starts with, “Once there was a forest with many acres of beautiful and valuable trees; and one day there came a big fire . . . ” the storyteller is faced with decisions about cause and effect, where the beginning begins and where the ending ends, as well as a lot of loose facts that can’t be neatly woven back in. The complexity grows by orders of magnitude when the story takes in the actions of human beings. Some readers may fault me, the storyteller, for oversimplifying complex issues—neatening the

landscape, sweeping out the nourishing debris, tidying up the site the way enlightened loggers used to do until quite recently. I ask the indulgence of these readers. I promise that I have tried, really tried, to be as thorough and as honest as I can be. Where the imperative of the story demands condensation or summarizing, I do my best to condense or summarize fairly, honoring the complexity of a real forest and real human beings. However, because that complexity is near-infinite and a story is by definition finite, the one will not always be truly represented in the other. For that I take responsibility, and I urge readers to make further explorations into the literature listed in the back, and into the Tillamook itself.

In coming close to what I thought was “the” Tillamook story, I found a lot of other stories woven in and around it—smaller stories of people who know the Tillamook from personal experience, and a larger story of people who may not know the Tillamook personally but for whom the story of its burning and re-creation expresses their faith about how the world works, how it ought to work. The Tillamook story is many small stories, and it is also one big story, the story of how people have come to dominate their natural environment, and the consequences of that domination.

In telling these stories, I know I am sending them out into a culture of people who are in painful conflict about their relationship to their natural environment. Forests seem today to be both an actual and a symbolic venue for this conflict. They seem to stand in for every brutality and every betrayal that humans have perpetrated on their natural surroundings, and for every shred of guilt and remorse

we have felt as a result. Forests are charged with emotion, enmeshed in meaning; we carry them around in our heads. It's hard to tell a story that beings, "Once there was a forest . . ." without tapping into deep currents of feeling in the audience—currents that may take a reader far from the destination I'm aiming for.

Nevertheless, I would like to try to tell these stories in a way that moves past easy answers and false dilemmas, past the oversimplified discourse that has already worn grooves in people's thinking—the "owls-or-jobs" groove, or the "cut-it-down-or-lock-it-up" groove. I grew up in forested country, and forests live in my soul. I am dismayed at our sorry past—the heedless exploitation, the waste and the greed—and I'm disturbed when this history is discounted or dismissed. I'm also disturbed that some are ready to declare humans the enemy and banish them from the forest altogether. Either/or; virgin/whore; these false dilemmas show just how dysfunctional is the relationship between humans and nature. The word is borrowed from the self-help vocabulary, and I use it deliberately, for it will take more than a little self-help, I think, to restore this relationship to a semblance of balance.

The hypothesis that informs this whole effort—the proposed answer to the question, "What happens now on the Tillamook?"—is: "Here we finally have a chance to form a truly stable, sustainable, and humane relationship with our forests." To find out whether this might be true, I knew I had to explore the territory between the grooves. That is what these stories try to do.

I enter the task with both hope and skepticism. Skepticism because our history says we aren't capable of a long-term partnership with our forests, one that sustains both the forests and ourselves. And hope because the Tillamook, with its redemptive past and the enlightened intentions of its current managers, seems to show us a lesson partly mastered.

The Tillamook: Stories from a Created Forest

Chapter 1. Prologue: The legend

Sixty-two years ago, a great fire burned many acres of a virgin forest in northwestern Oregon. That fire was followed by three more fires at six-year intervals. The fires burned 355,000 acres of forest land in all.

The events surrounding the great Tillamook fires and the planting of young trees on the Burn have been told and retold over three generations. The story that has come down to the present day is a story of heroism and sacrifice, of human ingenuity and pluck, of people laying aside their differences to make common cause against a common enemy. It is a legend that still lives in the minds of people born and raised in the Pacific Northwest, even those too young to remember the fires.

This is the legend.†

The fires

It happened on a hot, dry day at the end of the hot, dry summer of 1933. A suffocating east wind had sucked the moisture from the needles of the fir trees. Humidity in the air was 20 percent. The duff on the forest floor was so dry it powdered the loggers' boots.

At noon, a sweating runner arrived at the Gales Creek Logging Company. Panting and dripping, he delivered the message from the fire-watching authorities: Shut down or you'll have a fire on your

hands. The crew paused. The boss glanced at the huge Douglas fir log just now ready to drag to the landing. "One more," he said. The whistle punk blew the signal. The mainline snapped taut. The big log reared and thrashed. With a rasp of steel cable against dry bark, the log began to move toward the landing, grinding its way over a downed cedar. There was a trickle of smoke, a flame. Loggers ran to the fire with shovels and axes, but it had already climbed a tall snag. The snag became a torch. The wind carried flaming bits of moss and rotting wood into a logged-over patch of woods half a mile across the canyon. The slash blazed up and the fire raced on.

Smoke billowed out of the canyon. The watchmen at Hoffman lookout, 10 miles to the northeast, and at Saddle Mountain lookout to the south saw the smoke and sounded the alarm: "Fire on Gales Creek!" All available men from the nearby mills and logging camps were dispatched to the scene. They fought all night long, digging miles of firebreaks, but the fire quickly crowned—climbed into the treetops—and raced away into the adjoining timber.

More men were called in, farmers and loggers and men from the city, as well as a thousand enrollees from the Civilian Conservation Corps. The town of Forest Grove, a few miles southeast of Gales Creek canyon, became the staging area for the firefighting. The town took on the earnest, hurried feeling of an Army camp in wartime. In fact the Army was there, distributing food and equipment to the firefighters, directing the trucks that rolled in from the cities with supplies.

The men fought the fire for 10 days, digging firebreaks and watching the fire gobble them up, backing up and digging more

firebreaks. The fire climbed up the west side of Saddle Mountain and destroyed the lookout station only moments before the watchman fled down the east side. By the tenth day, Wednesday, August 23, the fire had spread to 40,000 acres, big enough to engulf Mount Rainier.

The tenth day brought a sprinkle of rain, and the fire slowed. Hopes were buoyed. But the eleventh day, Thursday, August 24, was hot and dry. A new east wind surged in, and the humidity dived again. And suddenly the fire blew up. A wall of flame blasted into a stand of old growth 250 feet tall, slowing only an instant as it climbed to the crowns, and then it roared off across the treetops. It consumed 166 acres every minute, almost three acres every second. Its terrific heat cracked the ground and caused the air to explode upward. The resulting vacuum sucked in a sudden gale that uprooted trees, twisting them out of the ground as easily as a gardener pulls weeds. Frank Palmer, a CCC firefighter from Illinois, died when a burning snag fell on him. Another firefighter who was with him was badly hurt.

On that Thursday, employees of the Oregon-American Lumber Company had to flee the company's logging camp, Camp McGregor, when the wind shifted. The logging train full of people careered down the mountain. Half an hour after they abandoned the camp, the fire overtook it. Also on that Thursday, an arsonist set fire to a mass of logging slash outside the fire line, up on Wolf Creek, six miles to the north. By the end of the day the Wolf Creek fire had traveled 18 miles. It burned 60,000 acres before it was finally stopped.

Smoke from the fires rose to eight miles high. People could see it in Yellowstone. It darkened the skies and rained ashes and charred

fir needles on towns, farms, and beaches. Ash fell onto the decks of ships 500 miles at sea. Cars turned on their headlights in midmorning. Chickens roosted at noon. The fire spread to 240,000 acres, almost twice the size of the island of Guam. That night the east wind calmed and a fog rolled in from the ocean. On Friday, August 25, the fire began to die down; the change in the weather and the firebreaks dug by 3,000 firefighters had finally broken its back. The woods continued to smolder for another two weeks until the fall rains came. Finally, on September 5, the fire fizzled, steamed, and died.

The Tillamook country looked like the end of the world. It was a 400-square-mile moonscape of cinders and ash. On a map, the burned area looked roughly like your left fist, closed fingers up. About where your two last fingernails would bite into your palm, there was a small, teardrop-shaped patch of unburned forest—spared thanks to the capricious mercy of wind and terrain. Standing at the western edge of that patch, a viewer could look north and south and see nothing but blackened earth and ghostly snags. It was a grievous sight.

Accounts of the time describe the loss, completely without irony, as the “killing” of billions of board feet of timber—as if a board foot of timber were a living thing. Which it was, in a sense, for the people of the time, for timber was their life’s blood. Just about everybody worked in the woods or the mills, or was married to someone who did, or worked for businesses that depended on timber dollars. Thus, even more grievous than the ugliness of the landscape was the twelve and a half billion board feet of clear, fine-grained,

premium-quality timber that lay on the ground, a feast for the bugs and a temptation for the next fire. A shameful, heartbreaking waste, was how people saw it. That timber would have kept every sawmill, shingle mill, and pulp mill in the United States busy for a year, at the rate timber was being processed in 1932. It would have kept all the Portland sawmills going for 30 years. If the Tillamook timber had not burned but had instead been logged over the 20-year period between 1933 and 1953, it would have been worth \$442.4 million (calculated in 1993 dollars). Loggers and mill workers would have earned \$350 million in wages. Forest landowners would have paid \$2.4 million in property taxes. The massive timber salvage operation, begun almost before the embers were cold, was hailed as a bright spot in a otherwise dismal picture. The salvage logging eventually recovered \$100 million, less than a quarter of what the unburned timber would have been worth.

Fire revisited the Burn country at eerily regular intervals, six years from fire to fire. The 1939 fire, also allegedly touched off by a logging operation, burned 190,000 acres. Much of it was within the original Burn, but there was no containing it once it grabbed hold of the dead, dry snags and sticks. The 1945 fire burned 180,000 acres. The 1951 fire was mercifully smaller: only 32,700 acres, and it was confined within already-burned areas.

The 1945 fire was the one that made the biggest headlines. It was the third visitation of a monstrous event; that and the freakishness of the timing stirred something in people's hearts. The Burn was close to Portland, Oregon's largest city, into which the wartime economy had recently sucked another quarter-million

people. City dwellers traveling to the Coast had to drive through the Burn and see its ugliness up close. People started saying that something had to be done to renew the Burn, to reclaim the lost empire of timber that the fires had stolen from the people of Oregon and to keep such fires from happening ever again.

Governor Earl Snell appointed a citizens' committee to find a solution. The committee came back with a challenge: Oregon needed to undertake a huge forest rehabilitation project, the biggest tree-planting job ever attempted anywhere. The purpose was to restore the area to its "natural, wealth-producing status" by transforming "the non-producing burn land into a 300,000-acre growing tree farm," in the words of a contemporary newspaper account.

The restoration

Timber forever was the promise that rose from the ashes of the Tillamook Burn. But replanting the Burn was a bigger job than any state or federal agency had ever attempted. Nobody knew how to do such a thing. The Forest Service declined to help—not only was it financially risky, they said; it was humanly impossible. Many people agreed. The Burn was too rugged, too huge; it had been scorched too badly. There was talk of letting the grass take over and turning the Burn into rangeland.

But a few people clung to the vision of restoring the Tillamook's former green richness. One of them was Nelson S. Rogers, the Oregon state forester. Rogers had grown up around Gales Creek, and he knew good tree-growing land when he saw it. He devised a plan and took it to Governor Snell: Fireproof the Burn by felling the snags and

punching through a network of fire roads and trails. Build lookout stations and beef up firefighting crews. Then create a vast patchwork of tree plantations on land that once lay under virgin forest. With the Oregon people behind him, Rogers was convinced, his state forestry department could do it.

There were problems, big problems. First of all, who would pay for such a massive project? A Clatsop County judge named Guy Boyington came up with an intriguing idea: Float a statewide bond issue to finance the reforestation, a scheme that would require a constitutional amendment. The legislature wrestled with the idea and then submitted a proposal to the voters, who narrowly approved it in 1948. At a ceremony at Owl Camp, at the top of the Coast Range divide, sitting on a wide stump, Governor Douglas McKay signed the bond papers in July of 1949. Nelson Rogers, gravely ill, did not attend. Three months later he was dead, but his dream of restoring the Tillamook Burn had received the official blessing of the people.

Before any firebreaks could be plowed or trees planted, the state had to acquire title to the burned lands. Many acres of the Burn belonged to the counties of Tillamook, Yamhill, and Washington. The counties had acquired this land through property tax foreclosures on private landowners, mostly timber companies, during the Depression. The counties agreed to turn the land over to the state to be replanted. In exchange, they would get to keep most of any future timber revenue. The state, in other words, would hold the land and manage its timber in trust for the counties forever.

There was another complication. The counties had previously sold salvage rights to the fire-killed trees on much of the land. When

the state acquired the land, those salvage contracts were still in effect. Loggers continued to salvage timber from the Burn through the 1940s and 1950s, a time when timber prices were rising rapidly. They were reluctant to let go of their salvage contracts until they had removed every saleable stick of wood. These logging operations seriously hampered the reforestation efforts of the early 1950s.

The new forest

The state foresters started by surveying the vast Burn to see what had to be done. They reestablished property corners and ran boundary lines. They laid out access roads and cleared firebreaks, dividing the Burn into compartments so that firefighters could more easily contain and suppress future fires. They established lookout stations. They mapped the remnants of living forest, studied the conditions of soils and sites, and determined how to get young trees growing.

They had little knowledge to go on. The Tillamook was the site of a lot of trial-and-error research in the course of the reforestation. Foresters learned much about the relationship of soil, climate, and elevation to the successful growing of trees; about planting techniques; about nursery tree culture; about controlling brush and animal pests. They tried dropping Douglas-fir seeds from airplanes and helicopters—eventually scattering 36 tons of Douglas-fir seed over 98,000 acres. But planting by hand, they discovered, was the more reliable method. Beginning in November of 1949, forestry crews planted more than 108,000 acres of the Burn with 72 million two-year-old Douglas-fir seedlings. Inmates of the South Fork

minimum-security prison camp planted some of the trees.

Volunteers, many of them children, planted trees. Each spring for 25 years, fleets of yellow school buses and chartered Greyhounds from Portland and the smaller towns nearby would bring grade-school and high-school students out to the Burn. The children would carry hoedads—a tree-planting tool—and lunch buckets. Special tracts were set aside for these plantings; most of them lie next to the Wilson River Highway just west of Forest Grove.

The new trees had to fight for their survival. Wood rats ate many of the seeds as soon as they hit the ground. Deer nibbled on the tender new growth. Mountain beavers clipped the smaller seedlings off right at the ground, and they stripped the bark off the bigger ones. Foresters sprayed the brush that competed with the young trees, and they killed some of the rodents with poisoned bait—a controversial tactic. The seedlings that survived were nurtured by the rich soil and moist climate of the Tillamook country. Gradually, the feathery tips of Douglas fir started showing above the blackberry brush and vine maple. By the early 1960s, the Burn was cloaking itself in green.

In 1973, 24 years to the day after Governor McKay had signed the reforestation bond into law, Governor Tom McCall dedicated the Burn as the new Tillamook State Forest. That ceremony too took place at Owl Camp, which had become the main staging area for the reforestation. By then it had been renamed Rogers Camp, after the visionary state forester who did not live to see his plan become reality. McCall had to stand at a podium: The stump on which

Governor McKay had sat 24 years ago was gone; removed along with the rest of the dead wood from the Burn.

In his remarks, Governor McCall said, "Around us now we see the result of our lending a helping hand to the natural process. More than a million snags are gone, . . . and in their place is a new stand of Oregon's economic life blood. The trees will grow, and suffer our harvest, and grow again. The forest . . . again will feed us."

The promise of the Tillamook, *timber forever*, seemed to be coming true.

† Taken from accounts in Beh, 1951; Fick & Martin, 1992; "From Ruin to Rejuvenation" (videocassette), 1978; Holbrook, 1941; Levesque, 1985; Lucia, 1983, Oregon Department of Forestry, 1993b; and Pyne, 1982.

Chapter 2. Timber forever

A cultural landscape

The fires were a long time ago, and the name “Tillamook” means a lot of other things now. Tillamook is a town of 4,000 on Oregon’s north coast; it’s a lush-meadowed dairy-farming county with more cows than people; it’s a stocking-shaped bay into which the Miami, Nehalem, Kilchis, Wilson, Trask, and Tillamook Rivers flow; it’s the band of Indians (sometimes rendered in print as “Killamook”) after whom city, county, river, and bay are named; it’s the home of the world’s largest cheese factory and the birthplace of the famous Tillamook Cheese. It is also a stretch of young Douglas-fir forest out west of Portland, along the Wilson River highway, a place where the dirt bikers go to tear through the woods and where high-school kids go to drink and party and skinny-dip. But among small-town people who came of age in Oregon between the Great Depression and the Vietnam War, the name “Tillamook” will always mean, first, the Tillamook Burn. The memory is especially vivid among those raised in the towns ringing the Burn—Forest Grove, Gales Creek, Glenwood, Timber, Vernonia, Jewell, Elsie, Nehalem—but anyone who lived here between 1933 and 1973 will know what the Tillamook Burn was, and they will remember how it changed the face of Oregon.

The real old-timers remember the snapping-dry August day in 1933 when the woods caught fire and didn’t stop burning until the September rains came, soaking 240,000 acres of dead, blackened Douglas-fir trees. They remember the second fire, and the third, and

the fourth, all at six-year intervals, visitations of a malevolent genie that seemed to know the human calendar. They remember the strenuous and chaotic salvage logging; the railroad flatcars and log trucks rolling out of the Burn loaded with charred, barkless logs. They remember the men who felled the brittle snags, raising clouds of soot and coming back to camp looking like chimney sweeps.

The World War II generation remembers the sea of snags, miles and miles of them bleached silver from the sun, rising from the burned landscape like the masts of ghost ships. They remember the sense of widespread dismay that followed the 1945 fire, the feeling that something had to be done to bring back the forest that the fires had stolen. They remember, if they were old enough to vote, the 1948 constitutional amendment to finance the most massive reforestation project ever attempted any time, anywhere. They remember the army of workers who bulldozed roads, felled snags, planted trees, and scattered Douglas-fir seeds from airplanes and helicopters. Some of them remember going out to the Burn with their elementary-school classmates and planting trees alongside the highway.

Their children, my generation, remembers driving out to the coast with their parents and watching the thickets of green flash by the car windows. They noted the herringbone pattern of the silvery foliage on the hillsides and the occasional bleached snag sticking up from the high steep slopes, and they couldn't quite picture it when their parents told them what this place used to look like. By that time the scar was healing over. A new forest had been created out of

a burned void by human minds, hearts, and hands, and the promise of this new forest was *timber forever*.

Tillamook legend and western myth

The story of the Tillamook Burn is a set of historical events, and it is also a legend. The Tillamook legend stresses the heroism of the firefighting, the swift decisiveness of the reforestation experts, the people's faith in scientific forestry, their agreement about what this created forest was for, and the social blessings that would surely flow from the carefully managed tree farm that the Tillamook was expected to become. As in any legend, these emphasized elements are the ones that play the melody and counterpoint of their time. They make the Tillamook story a myth, a narrative embodying deep truths about the identity of a people, its attitudes about society and nature, the values it cherishes, its notions of right and wrong.

The Tillamook Burn legend resonates with the mythology of the West, of Oregon as it was before and just after World War II. The legend is a piece of a larger Western frontier myth, which is itself a piece of an even larger myth that undergirds Euro-American civilization, whose dominant theme is the taming of wild nature to serve human ends. That myth has many roots; one of its taproots is the work of Francis Bacon, whose "new methodology" (*Novum Organum*) became a model for the way of knowing the world which our culture has come to call "scientific." Bacon might be said to have invented the idea of technology—uncovering the secrets of nature's processes in order to turn them to human advantage. Left to itself, Bacon believed, matter would revert to chaos. It was up to "art and

the hand of man” to force nature “out of her natural state” so that she (Bacon’s female imagery is telling) could be “squeezed and molded.” Extending human dominion over nature was the highest human endeavor, so that the human race could “recover that right over nature which belongs to it by divine bequest.” (Bacon, *Novum Organum*).

The idea that nature was there for man’s taming became particularly pertinent with the arrival of English settlers in the New World, which seemed to many of them a fearsome and chaotic place. William Bradford, fresh off the Mayflower, called it a “hideous and desolate wilderness,” according to the historian Roderick Nash. “Civilizing the new world,” Nash writes in *Wilderness and the American Mind*, “meant enlightening darkness, ordering chaos, and changing evil into good.” This ethic came to dominate American culture, as evidenced in the aggressive metaphors that were, until recently, common in discussions of the history and development of the West: *subduing* the earth, *conquering* the wilderness, *pushing back* the chaos. “Such language animated the wilderness,” Nash writes, “investing it with an almost conscious enmity toward men, who returned it in full measure” (Nash, 1983).

For many generations, the Western myth told Americans their place in the order of things. They were to be the masters of nature, entitled to the fruits of conquest. In the most enlightened expressions of the myth—and the Tillamook legend is one of these—the price of mastery is the obligation to be a good master, a good steward of nature’s bounty. In the Western myth, nature is broken with plows and guns and barbed wire. In the Tillamook legend, the

taming is accomplished with chainsaws and skidders, but also with strategically placed firebreaks and nursery-grown seedlings and scientific silviculture—mind as well as muscle.

Rejecting the old myth

Today the Western myth is under siege, assailed by deep cultural shifts in American society and hammered at the same time by the march of events. The environmental movement that arose in the mid-1970s is probably its most explicit challenge.

Environmentalism is composed of many strands of opinion and belief, but in general the movement articulates a very different vision of the relationship between humans and their natural environment. Alexis de Toqueville, that most perceptive of America-watchers, observed in 1831 that Americans seemed to see “the wonders of inanimate nature” as nothing more than an obstacle to civilization. Americans, he speculated, lived too close to untamed nature to appreciate its beauty (Nash, 1983).

To be sure, an alternate vision has existed since the early days of European settlement. That vision, of nature possessing an intrinsic worth apart from human utility, is expressed in the writings of Hector St. John de Crevecoeur, John and William Bartram, Thomas Nuttall, John James Audubon, Henry David Thoreau, John Muir, John Burroughs, Mary Austin, Aldo Leopold, and Joseph Wood Krutch, and a few dozen other writers of the past two centuries. Essayists like Rachel Carson, John McPhee, Edward Abbey, Wendell Berry, and Barry Lopez bring the alternative voice into the present time. As Thomas Lyon shows in part 1 of his nature-writing anthology, *This*

Incomperable Lande, these writings cover a wide range of intellectual and emotional territory, from the carefully researched natural histories of the Bartrams and Audubon, to Crevecoeur's celebration of the pastoral life, to Muir's ecstatic response to nature's transcendent presence, to the cautionary voices of Carson, Abbey, and Berry (Lyon, 1989, pp. 3-74). These nature writings are the collective intellectual tradition of the environmental movement that came into the mainstream of American culture in the late 1960s. Diverse as they are, they have in common a consciousness of nature as something other than a metaphor for evil, a threat to survival, or a storehouse of material riches.

Since its official birth on Earth Day 1970, "environmentalism" has become an overarching heading for a certain kind of aesthetic and emotional response to nature, a set of ethical values around the use and preservation of land, and a political movement devoted to validating that response and bringing these values into the cultural mainstream. Like any broad social movement, environmentalism is hard to pin down long enough to talk about it. To cover all its ramifications in this brief essay is impossible. Nevertheless, it's safe to say that, in general, the environmental ethic holds a brief for the wild over the tame, natural processes over human management, organic over mechanistic metaphors for the workings of nature, and the subjective experience of nature over a "scientific" or "objective" outlook.

The impact of the environmental movement on the culture is profound. Today it's rare to read any popular writing that talks about conquering nature or making the desert bloom, unless the writer's

intent is ironic. It is much more common to read descriptions of natural settings that verge on the poetic and the mystical, such as this passage from the usually understated *The New Yorker*: “Above all, this forest is a remnant of the world as it was before man appeared, as it was when water was fit to drink and air was fit to breathe” (Caufield, 1990). Much of the popular discourse about forestry—in newspaper stories, magazine articles, and casual conversation with friends—begins with the premise that industrial forest management amounts to rape of the landscape. Writing in the *Atlantic Monthly*, nature writer Bill McKibben takes on the forest products industry in an article about the regeneration of logged-and-abandoned East Coast forests. With angry irony he calls clear-cutting a “devastating ‘management’ technique”, and deplores “(T)he . . . attack of industrial forestry” that has “afflicted the Maine woods . . .” and the “Bunyanesque” rate of logging” that has taken place there. He urges his readers not to believe the claim of the timber companies (which is also the dominant rationale of modern forestry) that trees are a renewable resource. Rather, they should trust “the feeling in their gut that comes from looking at the ugly face of industrial forestry” (McKibben, 1995).

Today, this ethic speaks the heart of the culture; the alternative has become the mainstream. Environmentalism has radically changed public sentiment about forestry practices, as any timber industry executive will tell you. Logging practices that were once routine and applauded as good stewardship—large-scale clear-cutting, intensive salvage logging, burning of slash—are now excoriated for the damage they are assumed to inflict on forest soils, flora, and fauna. The

environmentalist critique goes further, however, than a condemnation of particular logging practices. The movement has brought a new way of thinking about humans and their natural environment, a new set of metaphors by which society's judgment is guided: the earth as a spaceship, with its obvious correlative message that the earth's resources are finite and on the brink of exhaustion; nature as a fragile and delicate dance of systems; and, in the most extreme expression, humans as a cancer on the natural order. Extraction of natural resources in general is less apt to be seen as heroic conquest and more apt to be seen as selfish anthropocentrism. Indeed, the so-called Deep Ecologists level the charge of anthropocentrism at even environmentalist thinking if it is driven by human needs and concerns. The outdoor writer David Quammen says the idea of environmentalism has been "perverted," in having become "an understandable campaign of self-interest, by our species, with potentially dire consequences for the world at large" (Quammen, 1992).

The advance of environmentalism in the culture has been accompanied by (which is not to say it's entirely responsible for) a sense of existential pessimism about the consequences of human activity on nature, and, indeed, in every venue. This dour outlook is expressed, very often, in the conviction that all we ever do is screw things up. The environmental movement, taken as a whole, is an emphatic rejection of the Western myth.

Changes in the ways history is studied have also played a part in this assault. Western historians are probing the received wisdom of traditional frontier history and discarding some of the culture's

most cherished touchstones (Robbins, 1989; Stegner, 1992; Schwantes, 1989). When I took the required Northwest history classes in fourth and ninth grades—this was in the mid-1960s—we learned about the daring of Captain Gray, the fidelity of Sacajawea, the courage of the martyred Narcissa Whitman. We did not learn about the rapacity of the big Eastern timber companies that looted the public domain with their illegal land-grabbing, or the economic instability and ecological ruin that seemed always to follow the timbermen and mining barons. We did not learn about the multitude of brutalities and betrayals perpetrated against the original inhabitants of this country. Now, thanks to changes in historical philosophies and methods, we know the depressing downside of the Western myth. The early seafarers and voyageurs were not merely dashing adventurers; they were also tools of big Eastern and European capital. The pioneers may have been hardy and independent souls, but they were also unwitting advance agents for Washington imperialists bent on grabbing the West's rich resources before some other imperialist nation got hold of them. The West did not grow up wild and free; it grew up fat on federal land giveaways, water projects, and railroad subsidies.

Changing times

The Western myth is also being undermined by changing realities. The frontier is a hundred years gone. The population is expanding and becoming more urban. Standards of living are rising even as people lose touch with the material base of their prosperity—the tilled farmland, the sawn logs, the smelted steel. All Americans,

but especially Westerners, are ever more mobile, and the traditional cultural values tied to place are fading (Gober, 1993).

Here are some numbers that sketch the general patterns. In 1920, the United States had 126 million people, most of them living and working in rural areas. By 1992 the population had more than doubled, reaching 256 million (Haynes et al., 1994), of whom more than two-thirds live in cities. In 1930, more than three-fourths of Americans lived in the state they were born in. Sixty years later the figure had dipped to 65 percent (Gober, 1993). In the West, with a tradition of transience that is itself part of the frontier myth, more than half the population moved at least once between 1985 and 1990.

The nationwide trends of population growth, greater mobility, and increasing urbanization have all held true in Oregon. The war years brought a wave of immigration into the state and an influx of people from the countryside to the cities. Oregon's population grew by more than one-third between 1940 and 1950, from 1,084,684 to 1,521,341 (Schwantes, 1989). The war made a metropolis out of Portland; between 1940 and 1944, the greater Portland area drew in more than a quarter of a million people (Schwantes, 1989, p. 331).

The state's population grew 26 percent a year during the 1970s, slowing down only when fortunes in the timber industry hit a decline between 1980 and 1985 (Schwantes, 1989, p. 350). Every year during the first three years of the 1990s, Oregon's population grew at more than twice the national average. In 1992 it stood at 2.9 million, up from two million in 1970 (Office of the Secretary of State, 1994). Most Oregonians live in cities, where the messy processes of

resource extraction are seldom on public display, and where there is no link between the log felled on Tuesday and the paycheck on Friday to reinforce the cutting of trees as a social good. In fact, for most people nowadays, the forest is a place to play, not a source of meat on the table and a roof over the head.

Yet people still need roofs, and they still depend on forests to provide them. Consumption of wood products has gone steadily upward since World War II. While per-capita consumption of lumber has leveled off in the last decade, in absolute terms it continues to rise. In 1962 Americans used about 31 billion board feet of softwood lumber, enough to build three million small-to-medium-sized three-bedroom houses. In 1990 the figure was 46 billion board feet (Haynes et al., 1994).

Americans have enjoyed half a century of rising incomes and a steadily improving standard of living. In 1933, the year of the first Tillamook fire and the lowest point of the Great Depression, the average disposable income was a little over \$3,000 a year per person. By 1960 the figure was \$6,000, and by 1993 it had reached \$12,000 (all figures calculated in 1982 dollars) (Haynes et al., 1994). People are spending that money on more of everything, including wood. For years the average three-bedroom frame house was assumed to contain about 10,000 board feet of wood. Today the figure more often given is 12,000 board feet (Haynes et al., 1994). Sometimes it's assumed to be as high as 16,000 board feet (Senate panel approves environmental exemptions, 1995).

As for paper, per-capita consumption is on the rise even in this era of electronic communication. In 1952, each man, woman, and

child in the United States used, on average, 369 pounds of paper. In 1991 the figure was up to 672 pounds (Haynes et al., 1994) That is equivalent to 336 reams of printer paper, or 10,752 first-class letters with envelopes, or 2,688 rolls of two-ply toilet tissue.

In brief, demand on the forest has never been more intense, or more varied, than it is now. Americans want wood products to make their lives easier, and raw materials to keep mills running, and paychecks to support workers, and tall trees, and clean water, and wildlife habitat, and pretty hiking trails, AND . . . intangibles like the shiver of a tree's shadow on the shoulders, the soft scrape of moss on the back of the hand, the spring of duff underfoot, the shaft of sunlight streaming through the canopy. We want it all. And we are in deep and painful conflict about the role, purpose, and worth of forests in our lives.

Timber forever?

All through these turbulent decades, the Tillamook State Forest has been placidly growing, oblivious to the crosscurrents of politics and economics, putting on wood the way a trust fund gathers interest. The Tillamook, the apotheosis and justification of yesterday's scientific forestry, is now coming of age in a world much different from the one in which it was created.

Its original purpose, to furnish timber, is succeeding beyond question. The seedlings planted in the 1950s and 1960s, along with those pockets of conifers that came back naturally, are now healthy stands of Douglas-fir. If projections are right, and if cutting proceeds at the rate specified, the Tillamook will furnish 138 million board

feet of timber a year in the decade 2020, and 165 million board feet a year between 2030 and 2064 (ODF, 1993a). At a projected stumpage rate of \$300 a thousand board feet (Haynes et al., 1994)—a low figure, compared to current rates—Tillamook harvests will be worth \$42 million a year starting in 2024.

To put that number in perspective, the proposed 1995-96 general-fund budget for the Tillamook city school district, which serves 2,266 students, is \$12 million (Tillamook School District #9, 1995). Under the agreed-upon distribution arrangements, the Tillamook County schools (there are three school districts in the county) will get to keep three-quarters of whatever money comes off the part of the forest that lies within county boundaries. The Tillamook Forest revenues have been long anticipated by school districts and county governments. Anything that threatens to interrupt that stream of income will likely meet fierce local resistance.

Because timber is the forest's main reason for being, the "tree-farm" assumption continues to guide its management. The terminology has been softened a bit; the phrase now used is "working forest," a term encountered frequently in the management plans and in the conversation of the Tillamook's foresters. "Working forest" means a forest managed according to a model that might be called intensive, research-based, industrial-style plantation forestry. This type of forestry specializes in a silvicultural method called even-aged management, which consists of logging all or most of the trees on a given acreage, preparing the soil by burning it or scraping off the logging debris, and planting genetically improved one- or

two-year-old Douglas-fir seedlings. Weeds are killed with herbicides to keep them from competing with the young trees. Sometimes the trees are fertilized a couple of times within the first 10 or 15 years.

The resulting tree-covered area, called a stand, will grow for a specified period of time before the trees are cut again—a rotation. Sometimes the stand will be thinned at one or more intervals during the rotation to channel growth into the remaining trees and to realize some profit before the final cut. A rotation for managed Douglas-fir stands on the west side of the Cascades may be anywhere from 60 to 200 years. Rotations on the Tillamook will run between 70 and 90 years, if current plans are followed.

The “working forest” model is the one used in most timber-producing forests in the Northwest. The Tillamook’s managers, like those on other publicly owned forests, acknowledge and accommodate other uses and values, such as recreation and wildlife habitat. They also point to some scope for variation in the even-aged method—lighter and more frequent thinnings, for example, or a mosaic of smaller clearcuts called patch cuts, or messier clearcuts that leave a few green trees standing and more of the nutrient-rich logging debris on the ground. The motivation behind these variations is often aesthetic, grounded in people’s distaste for clearcuts. Wayne Auble, a forester who works on the Tillamook District, concedes that clearcuts “do look rather devastating,” but he says he wishes more people would understand why they are necessary. “(People) want both. They want timber and timber products, and they don’t want trees cut. And I don’t know how you pull that one off.”

The Tillamook's managers, he says, adhere unapologetically to the forest's original timber-first mission. "It is a working forest, and it's going to be managed according to the statutory requirements that we've got." Managers plan to keep using the traditional tools of plantation management—clearcutting, planting of genetically improved stock, fertilizing of young trees, thinning, and herbicides—to maximize the output of timber (Auble interview, 1994; ODF, 1984; Torres, 1992).

Finding a workable forestry

The reforestation of the Tillamook helped answer the pressing questions of yesterday's forestry: how to get burned land to grow Douglas-firs again, how to cultivate the trees for the fastest growth and the best timber value, how to recapture the revenue lost to the fires. Now, yesterday's answers have become today's questions. What is a "working forest," exactly? Does calling it a "forest" somehow beg the question? Is the working-forest idea scientifically plausible? Is it politically viable? What kinds of social and economic forces will help or hinder a perpetual flow of timber? How is the Tillamook like other forested lands that have been used by humans throughout history, and how is it unique? Will its particular history and cultural niche make any difference in how it is treated?

Finally, this: Can a workable forestry be developed from a set of practices and attitudes that evolved in a different time, a different world, in response to different problems? Can the Tillamook's promise of *timber forever*—a promise that echoes the old Western frontier myth—really come true in this age? Or is that promise

nothing more than the old frontier dream of a perpetual boom that somehow always goes bust despite our best intentions?

Everything in the history of human utilization of forests argues that a stable, sustainable, humane, and environmentally sound forestry—a workable forestry—is beyond the capability of human beings. In his book, *A Forest Journey*, John Perlin ticks them off one by one: Mesopotamia, Crete, Cyprus, Greece, Rome, North Africa, Venice, England: civilizations that traded their forests for economic and political gain and suffered when the forests were gone, despite desperate last-ditch attempts to preserve what was left (Perlin, 1991). Of all our ancestor cultures, I can't think of one that was able to restrain the overexploitation of its forests.

Then again, nothing like the Tillamook Burn reforestation was ever accomplished before, either. If we humans can create a forest, the Tillamook story seems to assert, we can create a long-term forestry to go with it. During the busy, heady days of the Tillamook reforestation, that conclusion once seemed self-evident, so taken-for-granted it wasn't even an issue. Today, people are not so confident of the power of scientific research and technical capability to make forests do our bidding. Knowledge and skill are necessary, but they do not seem to be sufficient. What else is required? It took grit, audacity, and hubris to create the Tillamook Forest. It will likely take something both more and less heroic than these qualities to make it sustainable.

Chapter 3. Legend and fact

Fire

The forest covering the Tillamook country before 1933 may have been the biggest swatch of contiguous virgin forest in Oregon and probably in the forty-eight states of America (ODF, 1992). Official accounts of the fires seem to take this for fact. To make the statement without any qualification, however, is to mislead. Many people think the Douglas-fir forests of the western American continent existed in a stable state over thousands of years and were disturbed only when European-Americans arrived. This is not the case (Zybach, 1993, p. 4). The “virgin” land the settlers thought they were seeing in western Oregon was in fact a landscape aggressively managed by the original inhabitants. The management tool was fire, which has been used by humans in a deliberate and systematic way, here and on many other parts of the globe, for thousands of years (Pyne, 1982). The Indians of the Northwest used fire to clear out the underbrush and create open habitat for game, to fell large pines and cedars for their own use, and to encourage the growth of blackberry and huckleberry patches (Walstad, 1992, p. 31). As a result of Indian land management—as much shaped and constrained by their technology is ours is by our own—the landscape of western and southern Oregon was much more open, less wooded, than it is today, as the journals of pioneers will attest. An early Tillamook County settler noted that

there was not a bush or a tree to be seen on all those hills, for the Indians kept it burned over every spring, but

when the whites came, they stopped the fires for it destroyed the grass, and then the young spruces sprang up and grew as we now see them (Petersen, 1994, p. 15).

Douglas-fir does not grow well in shade—its own or that of any other tree species—and it germinates best on a duff-free, mineral-soil surface. Natural, large, periodic fires thus set the stage for the broad, even-aged Douglas-fir forests that the early European explorers and settlers found when they got here (Zybach, 1993).

The 1933 Tillamook fire, which burned 240,000 acres, was large by the standards of settled Euro-Americans, but it was not the largest fire that occurred even in the brief history of white settlement of the Northwest. That record probably belongs to the Silverton fire of 1865 (Office of the Secretary of State, 1994), which burned almost a million acres. Fires occurred fairly frequently along the Oregon coastal forests after white settlement. The Nestucca fire of 1848, the Siletz fire of 1849, and the Yaquina fire of 1853 together burned over million and a half acres—about two and a half percent of the total land area in Oregon, 61 million acres (Office of the Secretary of State, 1994).

The patch of forest that would become the Tillamook Burn, however, had been spared from fire for at least 400 years. It was primarily composed of huge Douglas-firs. The land was rugged and steep, which, along with poor timber markets during the Great Depression, kept the Tillamook forests from being logged as quickly as the lower-lying stands along the coastal rivers. The Tillamook was a fog-drenched, moss-draped, soft-floored ancient forest, cloaked in light-dappled shade.

The legend-spinners

The 1933 fire was not an aberration, but a continuation in a long-standing, though unpredictable, pattern of disturbance. That fact, had it occurred to the people of the Tillamook at the time, would have been small comfort. To them the Tillamook fires were monsters that destroyed their forest paradise and gobbled up their livelihood, billions of board feet of prime timber. This malevolent characterization of forest fire still dominates nearly all the writing and storytelling about forest fires in the Northwest, and indeed everywhere: there's almost no one alive who doesn't know the stories of Bambi and Smokey Bear. Fire represents the antagonist in the Tillamook legend, the adversary over which human effort and skill finally won a great victory.

The Tillamook legend was spun by superb storytellers. Ellis Lucia, a Forest Grove newspaperman, cast the Burn and the reforestation effort as a heroic saga—in fact, he calls it “the saga of the Tillamook Burn” (p. xix) in his book, *Tillamook Burn Country* (1983). He tells of the hardy high-school and college students of Forest Grove who worked summers logging in the Burn. “Many virile young men,” says Lucia, “hard of muscle from summers in The Burn, gave Pacific University and nearby high schools some of the toughest football teams on record” (p. xiv). Working on the Tillamook Burn became a rite of passage for a whole generation.

Another newspaperman who wrote about the Burn, Stewart Holbrook, is well known for his colorful and romantic writings about the early days of Northwest lumbering. On August 24, 1941, the

eight anniversary of the “blowup” of the 1933 fire, the *Sunday Oregonian* ran a story by Holbrook headed, “The Terrible Tillamook Fire.” Alluding to the fire’s alleged human cause, Holbrook wrote, “. . . the gods must have wept” at the ignominious beginning of “a major forest tragedy in this or any other country” (Holbrook, 1941).

William Stafford, later named Oregon’s poet laureate, wrote a poem about the Tillamook Burn in 1958 (Lucia, 1983, p. xvii). It begins, “These mountains have heard God;/they burned for weeks. He spoke/in a tongue of flame” Arthur W. Priaulx, a public-relations man for the West Coast Lumbermen’s Association, may have had the greatest influence in shaping the Tillamook legend. Writing in the Portland *Oregonian* in 1946, Priaulx brought the three Tillamook fires vividly to life, calling the 1933 fire a “hot monster” and the snags “solemn markers in a graveyard” (Priaulx, 1946). The purpose of the article was to mount a persuasive argument for a statewide effort, then only a dubious and controversial idea, to turn the Burn into “a vast 300,000-acre growing tree farm.” The phrase, “tree farm,” incidentally, had been coined only five years earlier by a Weyerhaeuser public-relations man, Roderic Olzendam, to christen the company’s new conifer plantation near Montesano, Washington (Richen interview, 1994).

It was Priaulx who dreamed up the idea of taking school children out to the Tillamook Burn, giving them shovels and hoedads, and setting them to work planting trees for a day. He arranged it with Donald W. Stotler, an administrator with the Portland public school district, who described the program’s mission in this way: “Plant Trees and Grow Citizens.” It started in 1950. The kids went out

in yellow school buses and chartered Greyhounds (Lucia, 1983; Gale interview, 1995). Their pictures appeared regularly in the newspapers. The children kept coming for 20 years, more than 25,000 of them in all.

The “Plant Trees and Grow Citizens” program was a stroke of public-relations genius. It worked so well that the role of school children has been exaggerated in the lore of the Burn ever since. Today, when they drive down the Wilson River highway, these middle-aged car repairmen and college professors and computer programmers and secretaries look out at the expanse of young trees next to the highway and say to their own children, “I planted that forest.” In fact children planted less than one percent of the seedlings that would grow to become the new Tillamook Forest (Fick and Martin interview, 1993).

The Lyda story

This is not to suggest that these men were making things up. Their accounts are factual. It’s just that the facts of the Tillamook Burn fit so neatly into the prevailing cultural landscape that it would have been difficult not to trumpet the story in heroic strophes. It’s instructive to look back and examine legend and fact together from the moody perspective of our own time, half a century down the road.

For instance, the legend of the 1933 fire invariably starts with the story of Elmer Lyda’s logging outfit, operating up Gales Creek Canyon on that hot, dry August day. The fire hazard was extreme, and fire wardens had urged logging operations to halt for the day,

but there was no law to compel it in those days. Lyda's crew, the story goes, was intending to haul in just one more log before shutting down. That log, scraping over a dry piece of slash, rubbed and flamed, and suddenly the woods were on fire.

In his retelling of this story, Ellis Lucia points out that Elmer Lyda may have been unjustly blamed all these years. There was some evidence, he says, of another fire burning at the same time, deeper in the woods (p. xx). In any case, 1933 was a year of drought all across the country, and the forest was as dry as it could be. It wouldn't have taken much to spark a fire—a little lightning or a flicked cigarette could easily have done it. Fire, after all, is a periodic visitor to these forests. Elmer Lyda's loggers may have touched off the 1933 fire, but they didn't "cause" it.

The Elmer Lyda story was used for years by the Keep Oregon Green organization as a cautionary tale about human carelessness in the woods. Human culpability is an important theme of the Tillamook legend, because it reinforces the idea of human domination of nature. As humans have power over their environment, so they bear responsibility for controlling natural events. Today we are inclined more to emphasize nature itself as being in control, as knowing what's right for the forest. This ethic may be an element of a new, evolving world view about the place of humans in the natural order. It is certainly a reaction, perhaps a too-extreme one, against the myth of conquest and domination. In any case, today's discourse about forests, especially at the scientific level, tends to treat fire not as a foreign enemy but as an essential element of the Douglas-fir forest ecosystem. "We're learning fires are not the all-consuming, all-

destructive things we thought they were in the past,” says the forest ecologist Dave Perry of Oregon State University (Pryne, 1994). This would have seemed a strange notion to the men who fought the Tillamook fires.

In another example of legend juxtaposed on history, Lucia tells us that the 1948 constitutional amendment for the reforestation bond issue was passed “unhesitatingly.” In fact, it was a squeaker. The amendment was approved statewide by only 1,875 votes out of 420,000 cast, and it did not pass in Tillamook County (Fick & Martin, 1992), which might have expected to benefit the most. The legend, in other words, proclaims that the people of Oregon acted with one voice, eagerly taxing themselves for the sake of restoring the Tillamook Burn. Then as now, things were more complicated. Nothing on the scale of this reforestation scheme had ever been attempted before. Many Oregonians probably thought it was an unwarranted intrusion of the state into local affairs, and a foolish waste of money besides (Lucia, 1983, p. xxiii).

The salvage story

The salvage efforts are another example of events given a mythical burnishing. The salvage logging was written up in approving tones in the newspapers of the time (Holbrook, 1941; Priaulx, 1946). Stewart Holbrook calls it “a cheering part of an otherwise dismal picture.” Lucia casts it as a heroic struggle to reclaim for the war effort timber that would otherwise have been wasted (p. xxii, 114). Heroism, in this case, turned out to be profitable. In December of 1933, four months after the first fire, the

Tillamook's largest timber landowners, including Weyerhaeuser Co. and John W. Blodgett, a Midwestern timber magnate, formed the Tillamook Salvage Pool, soon renamed the Consolidated Timber Company (Levesque, 1985). Consolidated's partners came up with about \$3.5 million to build logging railroads and truck roads and to buy equipment. The general manager was Lloyd Crosby, a cousin of the famous singer. Over the next 13 years, Consolidated and as many as 200 smaller operators (Pyne, 1982) salvaged some four billion board feet of sound Douglas-fir logs, about a third of the estimated toll taken by the fires (ODF, 1993b). The value of the wood was, of course, much less than it would have been had it not burned. But World War II and the postwar building boom had sent timber prices skyward. The price of stumpage more than doubled between 1946 and 1951 alone, going from \$5 a thousand board feet (Priaultx, 1946) to \$12 a thousand (Beh, 1951). In all, salvage logging from the Tillamook yielded almost \$100 million (calculated in 1993 dollars) from 1934 to 1955 (ODF, 1993b).

The speed and efficiency of Consolidated's logging operation were "legendary," according to Lucia (p. 86). The Consolidated logging camp at Glenwood, northwest of Forest Grove, was a "brawling highball center of salvage operations" (p. 90) through which millions of board feet of timber was transshipped. Much of the salvaged Tillamook timber went to the Portland shipyards to be used as keels and spars for Navy ships and as construction scaffolding. In these uses the Tillamook timber had an advantage, because the unbucked, tree-length logs could be carried to tidewater over the rail lines that Consolidated Timber had pushed into the Burn country. Some of the

best logs were peeled into fine-grained, knot-free veneer and used to make plywood for barracks (Arnold, 1942). Much of the timber was processed by mills in the towns ringing the Burn: Tillamook, Seaside, Astoria, Forest Grove, Hillsboro, Carlton, McMinnville (Lucia, 1983, p. 104). In 1943, Consolidated Timber Company received the Army-Navy "E" award for its high production efforts to defeat Hitler and the Japanese (p. 115). The award was presented at the Glenwood camp "under wartime security" (p. 114), and the event was heralded by a 60-piece brass band.

The smaller salvage operators did well for themselves, too. Because prices kept going up, loggers would go back in to the same areas again and again to pick up wood they had left behind on the last entry. This piecemeal salvage activity hampered the state's early reforestation efforts (ODF, 1993b, p. 14). Salvaged timber continued to dribble out of the Burn until 1971. In all, about 7.5 billion board feet of timber were removed, more than half the amount estimated to have been contained in the trees killed by the four Tillamook fires (ODF, 1993b, p. 22).

Today, salvage logging after a wildfire is regarded as highly questionable. Some scientists and most environmental activists say the forest ought to be left alone to repair itself after a fire, which is after all a natural event for a forest (Scientists advise against proposed dead timber cut, 1995). The dead wood, they say, is nature's way of nourishing the recovering ecosystem. Referring to the Wenatchee burns of 1994, Dave Perry, the forest ecologist, said, "If we salvage, it will probably lengthen the period of time before the area provides habitat for old-growth-dependent species again"

(Pryne, 1994). For their part, timber company owners argue that the dead trees have to be taken out not only because they're valuable but because they would otherwise harbor diseases and insects that would threaten the forest's health—by which they mean the health of the remaining live trees (Salvage logging bill passes in House, 1995). Like most other forest issues, this one is far from settled, but one ecological study of the Tillamook Burn concluded that the heavy impact of the salvage logging in the Tillamook country did more damage to soils and streams than the fires ever did (ODF, 1992).

The management story

The management ethic now in place on the Tillamook—the research-based, industrial-style, plantation forestry set forth in Tillamook management plans—is a product of the same myth that stresses the heroism of the Tillamook reforestation effort. It is a product of the same myth, in other words, that provides the rationale for human conquest and control of nature. This is not necessarily to say, as some environmentalists say, that today's forestry is inevitably at cross purposes with the workings of nature. The technic of forestry has evolved alongside society's evolving environmental consciousness (SAF, 1993). Foresters, no less than botanists and biologists, have learned a lot over the past few decades about the complexity of natural processes in a forest. At the time the Tillamook Burn was reforested, such things as the role of fungi and other microorganisms in healthy forest soils, the importance to salmon and trout of dead wood in streams, and the damaging soil compaction produced by heavy log-skidding equipment were not part of a

forester's knowledge. Today's management plans for public forests, including the harvest plan for the Tillamook, pay attention to forest soils, streams, and wildlife habitat and make conscious tradeoffs in timber yield to protect these resources (ODF, 1994a; Seven key elements, 1994).

Whether this protection will be sufficient over the long run remains to be seen. As the visionary forester Aldo Leopold noted fifty years ago, rational manipulations of landscapes tend to be confounded by unintended consequences; nature is just too complicated to predict or control (Lyon, 1989). The history of modern plantation forestry is very short, and the time it takes to grow a mature forest is very, very long. The Tillamook legend promises *timber forever*, but no one has yet proved that a short-rotation forestry such as that planned for the Tillamook Forest will work over many rotations (Maser, 1988). In fact, the experiences of foresters in Europe, where such attempts have had a longer history, are not promising (Plochmann, cited in Maser, 1988).

Despite this sobering record, the management ethic of the Tillamook Forest, shaped by myth and history, is aiming for a forestry that can sustain both the forest and the people who use it—something never before accomplished in human history.

Chapter 4. Field trip: Taming the wild West

Unruly goings-on

The Tillamook Forest is not a wild forest, but parts of it have a wild feeling—"wild" in the sense of being outside human control. That I feel this feeling seems ironic given the forest's origins. Maybe the reason is that right now the forest is going through an adolescent burst of growth. The young trees are elbowing their way skyward, taking over the landscape the way a fourteen-year-old takes over a room. The Tillamook is not a park, manicured for tourists: there are no trailer hookups or hot showers or moonlight slide shows. No retirees in RVs ply the rutted logging roads. This forest draws a wilder crowd. People come here to drink and fight and shoot and tear through the woods on dirt bikes and three-wheelers.

Ric Balfour does not condemn people who like to ride and shoot instead of hike or climb, his own favorite modes of recreation. "As a recreation planner, you have to leave that judgmental attitude at home," he says. "It's my job to encourage people to follow the rules. I like to engage them on a friendly basis; that usually works best. And the accent helps."

Balfour, 33, is a genial and vigorous New Zealander with curly red-brown hair and beard, intense blue-green eyes, and a ready grin. He is fit, and looks it. Balfour has the title of Public Use Coordinator for the Tillamook State Forest. Before 1991, the year he was hired, there was no such job. The public use of the forest—and there was a lot of it—had been uncoordinated, and consequently chaotic, for quite a few years before he came. For people who like to play in the

woods, the Tillamook amounts to a quarter-million-acre wooded playground just a half-hour's drive from Portland, Oregon's largest city. The population of Portland's five-county metropolitan area is a million and a half people. In 1977, the last year for which reliable figures are available, state foresters on the Tillamook counted something like 210,000 visitor-days a year. It is Balfour's job to see to it that the forest absorbs this crush of people without undue damage. That means he has to tame some of the wilder activities for which the Tillamook has developed a reputation.

Managing public use

Today's visitors tend to make more of a dent on the forest than they did in earlier times, before and between the great fires. Then, the main sorts of recreation practiced in the Tillamook country were hunting and fishing. In the mid-1960s, as the young Douglas-fir trees began to show their tops over the Himalaya berry and vine maple, the state forestry department put in primitive campgrounds along the Wilson River. These were mainly for the use of hunters and fishermen, but they also attracted families who liked to camp in the woods.

Then came the economic slump of the early 1980s, and state budgets were cut back. The forestry department eliminated campground maintenance and such management of recreation as there had been. Gradually the forest was taken over by a crowd given to drinking, fighting, shooting, vandalism, and indiscriminate off-road driving. There was no routine law enforcement except occasional patrols from county sheriff's deputies, who did not have

the wherewithal to suppress every illegal and dangerous activity over miles and miles of bad back-country road, let alone monitor the off-road shenanigans of four-wheel-drives and ATVs, and the dumping of garbage, old car bodies, and what have you.

By the end of the 1980s the unruly goings-on in the Tillamook had come to the attention of the state's political leaders. The situation was unseemly; this place, with its proud past and promising future, deserved better. Gail Achterman, a Portland lawyer and Governor Neil Goldschmidt's natural-resources aide, was the one who spearheaded the idea of a recreation and interpretation plan for the Tillamook. The plan was to be a memorial to Achterman's friend Nancy Ryles, who had recently died of cancer. Ryles had also served in Governor Goldschmidt's administration, and in her younger days in Portland she had led groups of tree-planting schoolchildren out to the Burn.

In 1991, lawmakers passed House Bill 2501, calling for a comprehensive recreation plan "to interpret the history of the forest and to provide for diverse outdoor recreation in the forest" (HB 2501 summary, cited in ODF, 1992). The "whereas" of the legislation read like this:

Whereas the leadership of Governor Earl Snell, State Forester Nels Rogers, and Clatsop County Judge Guy Boyington, and the citizens of Oregon, the forest products industry, labor unions, community groups, local government, state government, schools and universities combined efforts to make the Tillamook State Forest *a living monument to modern forestry*, . . . " (emphasis added)

The plan was “to be consistent with the primary purpose of timber production.”

The department went looking for someone to gather public opinion, write a recreation management plan, and submit it to the legislature within a year. Ric Balfour, then finishing up a master’s degree in forest recreation management at Oregon State University, was hired in the fall of 1991. He wasn’t quite ready for a job of this scope, but he’d come from New Zealand with a resume full of responsibility in both timber and recreation management on that country’s plantation forests. And he knew a good opportunity when he saw it. “If I could have written a job description for myself,” he says, flashing a grin, “this would have been it.”

The soft approach

This day I am a passenger in Balfour’s pickup truck, riding along on one of his patrols. We’re on a graveled road that hairpins to the east just a mile or so off the highway when the sound of shooting drifts through the woods. We head in the direction of the sound, a rapid ta-ta-ta-ta-ta that sounds to me like automatic rifle fire.

We find the shooters, two men and a boy, up a side road in a clearing. One man wears a khaki field cap and has a rifle slung over his shoulders. The other is bareheaded and carries no firearm. The boy, who looks to be about five, wears rimless, bright yellow sunglasses. The three of them stand in front of a new-looking red four-wheel-drive pickup truck with monster tires. A target is set up on a stump about 30 feet away. Balfour gets out of the truck and

walks over. I watch from the cab, nervous about the guns but wanting to catch the conversation. I roll down the window.

“Hey, how’s it going?” asks Balfour in a friendly tone. The men return his greeting civilly. He tells them, “We’re asking people to go down to the old quarry if they want to shoot. It’s safer down there; the bullets go into the bank instead of through the woods. You look like you’re set up pretty safe here, but we prefer people to go down there.”

“Okay, no problem,” says the bareheaded man. “We’ll cruise on down there. Where’s it at?” Balfour gives directions, and the men turn and walk toward the pickup truck.

“Daddy, why are we leaving?” the boy asks the bareheaded man.

“‘Cause we can’t shoot up here, little buddy. They want us to go somewhere else.” The man turns to Balfour and comments on the bullet-ridden condition of most of the signs in the forest. “It’s terrible what some people do to those signs,” he says.

Balfour departs with a friendly wave of the hand. Back in the truck, he tells me about the time he came across a group of men standing around a couple of pickup trucks with guns arrayed all across the beds. “It looked like there was some clandestine trafficking going on,” he says. “I had someone with me, like you today. And she was going, ‘Let’s get *out* of here!’ But I strolled up to them and said, ‘Hi, guys, how’s it going?’” He grins as he tells this story with a sort of Gomer-Pyle, wide-eyed naivete, mocking himself.

“These guys were shooting up the place pretty well, and it happened they were on private land” adjoining the north edge of the

Tillamook. “So I told them, ‘Y’know, the property owner gets tired of having to clean up people’s messes.’ I suggested they clean up after themselves, and then I just turned around and walked away. I went back two weeks later, and the place was spotless. So you see, the soft approach works pretty well, most of the time.”

Leaving the shooting party, we drive up a steep graveled road to Rogers Camp, just south of the highway near the Coast Range summit. Evidence of dirt bikes is visible in the little half-moons of erosion flaring up from the shoulders of the road. It’s audible in the two-stroke whine that keeps drifting in and out of earshot. Rogers Camp, originally called Owl Camp, was the main staging area for the fireproofing of the Burn. It was also the site where Governor Douglas McKay signed the papers that launched the reforestation effort in 1949, and the site where Governor Tom McCall dedicated the new Tillamook State Forest in 1973.

Today all that is left of Rogers Camp is an old pumphouse, dilapidated and full of bullet holes. Balfour wants to use the pumphouse in a future interpretive display, “if it’s still there by the time we get to it.” Half a mile later we come to a wide, muddy parking lot, a jumping-off place, Balfour tells me, for the motorcyclists who race through the woods to the south. Gesturing at the puddled expanse in front of us, he says, “People come in here in their pickup trucks and do doughnuts”—his accent makes it sound like “daynuts”—“and then they go home with the obligatory trophy of mud.”

This place will some day have a traffic island, concrete-vault toilets (there are no toilets at all now), and a kiosk with an

interpretive display. The display will tell people something of the rich history of this place, the story whose evidence is now gone from the landscape except for the bullet-ridden old pumphouse. It will also request motorcyclists to drive their vehicles safely and legally.

The working forest

Before they could write their plan, Balfour and his team, people from the state forestry and state parks departments, had to find out about the people already “recreating” (in planners’ parlance) on the forest. (“On” the forest, rather than “in” or “with” the forest, is idiomatic among foresters.) They set up the planning process to be as public as it could be, doing their best to solicit a wide range of opinion. Balfour made it a point to go out and meet people on their own ground. He rode horses with the horse people and motorcycles with the motorcycle people, hiked with the hikers and driftboated with the steelheaders. “I talked to everybody I could think of,” he says, “from the motorcyclists to people in the Sierra Club.”

The motorcyclists were a problem at first. They had nothing to gain and everything to lose from what the recreation team was doing. “They’d been overlooked so often in planning processes that they automatically distrusted us,” says Balfour. “Fear was a natural reaction. They’d come to the planning meetings en masse, wearing their club colors, and the three people from the Mazamas (hiking) club would be sitting there feeling intimidated . . . It took me about eight months to convince them that we weren’t trying to shut them out.”

Planning was kept deliberately flexible. The team chose not to solidify certain schemes as Option 1, Option 2, and so forth—"We didn't want to be locked into anything." Instead, they arranged the various topics—motorized and nonmotorized recreation, camping, day use, fishing, and several others—and the various levels of intensity on a spreadsheet, blew it up into a six-by-eight-foot mural, and invited people to come up and pencil in their own ideas.

This informality took some getting used to, both for the public and for the forestry staffers. "Public involvement is not something the forestry department had much experience with," says Balfour. "Their tradition of planning had been to get all the foresters into one room, get information on the timber, and hammer out a harvesting program. They weren't used to high levels of public involvement or public review of what they were doing." Some of the interest groups also had a hard time with the concept. "For example, the Sierra Club," says Balfour. "They were used to the federal system [of planning on the national forests], where you get 20 days to comment on a 500-page, 10-pound document. They couldn't believe we hadn't already made the decisions. They kept asking us, 'where's the document?' We assured them we didn't have anything written down yet. We had broad objectives, that was all." In the end the Sierra Club did not participate in drafting the recreation plan. The reason, Balfour guesses, is that the Tillamook recreation plan doesn't address either timber or wildlife, two of the Sierra Club's main areas of concern.

Despite the limited scope of the plan, however, Balfour and his team made one thing very clear: The Tillamook is a "working forest," meaning a forest primarily devoted to producing timber. Therefore,

recreation could be accommodated only within that context. Most people seemed to accept this premise, Balfour says—they understood that a hiking trail, for instance, might someday have to be rerouted around a logging operation. Opinion is far from unanimous; some individuals expressed opposition to logging in principle, and a conservation group is pressing managers to set aside tracts of the Tillamook as biological preserves, an effort so far unsuccessful. But generally, Balfour says, the “working forest” idea seems to be flying.

Optimism and faith

Balfour believes the Tillamook Forest, if properly managed, is big enough to satisfy almost everybody. This is indeed the standard belief under which the Tillamook’s managers operate; just about everyone who works on the Tillamook shares it. “It’s not so much a competition between timber and everything else,” says Balfour, “it’s a matter of how you fit them all in.”

His optimism is powerfully attractive. I found myself wanting to believe that forest management is nothing more than sound professional judgment, skillful allocation, and sympathetic attentiveness to people’s complaints. Listening to Ric Balfour, I didn’t want to remember Aldo Leopold’s warning about how the complexity of natural systems confounds even the most rational of plans. I didn’t want to remember thoroughly economic and political pressures can overcome even the best intentions of sincere foresters. I didn’t want to remind myself that, if hassle-free forest management is so easy, somebody would have figured out how to do it already.

After many meetings and countless late nights, Balfour and his team finished the plan within the deadline, and the legislature approved it in January of 1993. Among its many provisions, the plan restricts motorcycles to the forested areas south of the Wilson River Highway. It also calls for rehabilitating the campgrounds and establishing user fees. Sheriff's deputies have been hired to patrol the forest.

Balfour and his colleagues are now at work on a scheme for interpreting the Forest's history for visitors. If all goes well, a Tillamook Forest Visitors' Center will be open by the turn of the century. The burden of the interpretive message will be the "working forest" idea. Interpretation and public education, Balfour says, are essential in keeping public opinion favorable—preemptive strikes against the kind of environmental activism that has shut down much of the logging on federal forests.

"Interpretation is what will keep this a working forest," he says. "We do not apologize for timber harvesting. We have enlightened harvesting practices today, and we have strict forest-practice rules in place. If we demonstrate that we're doing a good job on those other resource values—recreation, wildlife, watershed protection—we'll gain back people's trust."

"By hook or by crook . . ."

The Gales Creek campground is one of Balfour's first trophies. The campground lies at the end of a gravel road that winds down past a stout steel turnpike (locked, on this February day) through a thicket of alders to the creek. From here it's a short hike through the

woods to the site of Elmer Lyda's logging operation, where the 1933 fire was supposed to have started. A few years ago the Gales Creek campground was a mecca for off-road drivers and a hangout for homeless men. Its picnic tables had been chopped up for firewood, its outhouses tipped over, its creek banks gullied from erosion. Today the campground has sturdy new wooden picnic tables and concrete-vault toilets. It has log barricades to keep vehicles on the road and rock riprap to keep them out of the creek. A campground host will be on duty this summer, and campers will be charged a modest fee.

In the middle of what used to be a mudhole is a landscaped island of Oregon grape, salal, and sword fern. The shrubs were dug up and transplanted from the forest nearby by inmates of the South Fork prison camp, a few miles down the highway to the west. South Fork, a minimum-security outpost of the Oregon correctional system, was opened in 1951. Its inmates have felled snags, planted trees, fought fires, built roads, and generally provided low-cost labor for the Tillamook rehabilitation effort ever since.

This landscaping crew worked under Balfour's direction. The men needed some basic training in gardening, he says. "They didn't have much of an idea how to transplant, so they'd just go out into the woods, yank up a bush, carry it back, scoop a hole—" he illustrates all this with his hands— "and plop it in. I said, 'No, no. You've got to keep some soil around the roots.' I told them, 'You need to get some moss and mulch around these plants, keep the roots moist.' I came back later and here was moss scattered all over the ground—but not around the roots. They thought I wanted to pretty the planting bed up."

He gets along well with the South Fork men. "I don't come across like, 'I'm better than you,' so it's not too long before I'm on good terms with them. They call me 'Kiwi.' Sometimes, when they want to get my goat, they call me 'Aussie.' And I tell them, 'Look, let's get one thing straight: I am *not* an Aussie.'" He grins again, showing that it's all just kidding.

In the dirt next to one of the new picnic tables, Balfour spots a rusty iron railroad spike. "Ah!" he says as he picks it up and examines it. Maybe he'll keep it for a future interpretive display. The spike probably came from the Consolidated Timber Company railroad, which once ran right through here—I can see the suggestion of a level grade in the hill north of the creek. Walking back to the truck, Balfour spies a beer bottle on another picnic table. He strides over, picks it up, and pours out a swirl of stale beer murky with cigarette-butt steepings. He stows the bottle in the recycling bag which he always carries in the back of the truck.

Taming the wild Tillamook takes patience, persistence, and persuasiveness, all of which Balfour possesses. He shows me a sign at the head of a trail, a triangle-shaped graphic telling trail users who is to yield to whom (hikers to bicyclists; all to horses; no motorcycles permitted on this trail). "We put that sign up, and it was torn down," he says. "We put it back up and it was shot full of holes. We put it back up, and it's been here almost a year now." The grin flashes again. "By hook or by crook," he says, "I'm going to get this job done."

Literature cited

- Arnold, Mel. 1942. "Arsenal out of ashes—Tillamook Burn salvage." *Sunday Oregonian Magazine*, October 4, 1942:5.
- Bacon, Francis. *Novum Organum. Works*, v. 4, pp. 246-7 and pp. 114-15. Ed. James Spedding, Robert Leslie Ellis, Douglas Devon Heath. 14 vols. London: Longmans Green, 1870. Cited in Merchant, Carolyn. 1980. *The death of nature: Women, ecology, and the scientific revolution*. Harper San Francisco.
- Balfour, Ric. Personal interviews. September 1, 1994 and February 24, 1995.
- Beh, John L. 1951. *The Tillamook burn: A survey of a problem area* (unpublished senior thesis). On file at Oregon State University library.
- Caufield, Catherine. 1990. The ancient forest. *The New Yorker*, May 14, 1990:46-84.
- Fick, Larry, and George Martin. 1992. *The Tillamook Burn: Rehabilitation and reforestation*. Forest Grove: Oregon Department of Forestry.
- Fick, Larry, and George Martin. Personal interview. Sept. 8, 1993.
- "From Ruin to Rejuvenation" (videocassette). Salem, OR: Association of Oregon Counties, 1978.
- Gale, Richard. Personal interview. April 17, 1995.
- Gober, Patricia. 1993. Americans on the move. *Population Bulletin* 48(3):2-28.
- Haynes, Richard W., Darius M. Adams, and John R. Mills. 1994. *The 1993 RPA timber assessment update* (unpublished draft). Copy in possession of David Brooks, USDA Forest Service Pacific Northwest Research Station, Corvallis, OR.
- Holbrook, Stewart. 1941. The terrible Tillamook fire. *Sunday Oregonian*, August 24, 1941:1-7.

→ Levesque, Paul. 1985. *A chronicle of the Tillamook County forest trust lands*. Tillamook: Paul Levesque and Tillamook County.

Lucia, Ellis. 1983. *Tillamook burn country: A pictorial history*. Caldwell, ID: The Caxton Printers, Ltd.

→ Lyon, Thomas, ed. 1989. *This incomperable lande: A book of American nature writing*. New York: Penguin Books.

Maser, Chris. 1988. *The redesigned forest*. San Pedro, CA: R. & E. Miles.

McKibben, Bill. An explosion of green. *The Atlantic Monthly*, April 1995:61-83.

Nash, Roderick. 1983. A wilderness condition. From *Wilderness and the American mind*. New Haven: Yale University Press. Reprinted in Chris Anderson and Lex Runciman, eds. 1995. *A forest of voices: Reading and writing the environment*. Mountain View, CA: Mayfield, pp. 410-427.

Office of the Secretary of State. 1994. *Oregon blue book, 1993-94*. Secretary of State, Salem, OR.

Oregon Department of Forestry. 1984. *Long range timber management plan, Northwest Oregon area state forests*. Tillamook: Oregon Department of Forestry, Northwest Oregon Area.

Oregon Department of Forestry. 1993a. *Oregon State Department of Forestry management plan*. Salem: Oregon Department of Forestry.

Oregon Department of Forestry. 1993b. *Tillamook Burn to Tillamook State Forest*. Salem: Oregon Department of Forestry.

Oregon Department of Forestry and Oregon Department of Parks and Recreation. 1992. *Tillamook State Forest: Comprehensive recreation management plan*. Salem: Oregon Department of Forestry and Oregon Department of Parks and Recreation.

→ Perlin, John. 1991. *A forest journey: The role of wood in the development of civilization*. Cambridge, MA, and London: Harvard University Press.

→ Petersen, Jim. Voices in the forest: An interview with Bob Zybach. *Evergreen*, March-April 1994.

Priaulx, Arthur W. Big Tillamook Burn again may be green. *Sunday Oregonian Magazine*, March 31, 1946.

Pryne, Eric. The good side of forest fires. *The Seattle Times*, August 9, 1994.

→ Pyne, Stephen. 1982. *Fire in America: A cultural history of wildland and rural fire*. Princeton: Princeton University Press.

→ Quammen, David. Dirty word, clean place. *Writer's Northwest*, Spring 1992:1-3.

Richen, Clarence. Personal interview. June 9, 1994.

Robbins, William G. 1989. Western history: A dialectic on the modern condition. *Western Historical Quarterly* 20:429-49.

Salvage logging bill passes in House. *Oregonian*, March 17, 1995.

→ Schwantes, Carlos A. 1989. *The Pacific Northwest: An interpretive history*. University of Nebraska Press, Lincoln and London.

Scientists advise against proposed dead timber cut. *Medford Mail Tribune*, March 9, 1995.

Senate panel approves environmental exemptions for some logging. *Sunday Oregonian*, March 26, 1995.

Seven key elements. *Forest Log* (a publication of the Oregon Department of Forestry), July-August 1994:6-7.

Society of American Foresters. 1993. *Task force report on sustaining long-term forest health and productivity*. Bethesda, MD: Society of American Foresters.

→ Stegner, Wallace. 1992. *Where the bluebird sings to the lemonade springs: Living and writing in the West*. New York: Random House.

Tillamook School District #9. 1995. 1995-96 proposed budget (unpublished document of district budget committee). On file at Tillamook School District #9, Tillamook, OR.

Torres, Lou. 1992. Tillamook State Forest begins returning long-range investment. *Forest Log 1992 Annual Report* (a publication of the Oregon Department of Forestry).

Walstad, John D. 1992. History of the development, use, and management of forest resources. In *Reforestation practices in southwestern Oregon and northern California*, ed. Stephen D. Hobbs, Steven D. Tesch, Peyton W. Owston, Ronald E. Stewart, John C. Tappeiner III, and Gail E. Wells: 26-46. Corvallis, OR: Oregon State University Forest Research Laboratory.

Zybach, Bob. The future of Oregon's forests could be historic. *Forest Log* (a publication of the Oregon Department of Forestry, Salem), May-June 1993.

Works consulted

- Auble, Wayne. Personal interview. August 30, 1994.
- Bellah, Robert. 1995. *Habits of the Heart: Individualism and commitment in American life*. Berkeley: University of California Press.
- Beuter, John H. 1994. *Legacy and promise: Oregon's forests and wood products industry*. Portland: Oregon Business Council and Oregon Forest Resources Institute.
- Davis, Tony. In the words of Wallace Stegner. *High Country News*, May 3, 1993:16.
- Dunlap, Riley. 1992. Remarks given at the 53rd annual Oregon State University Biology Colloquium, Ecological principles of sustainable systems. May 15, 1994.
- Fairfax, Sally, and Jon Souder. 1992. Redefining trust land management priorities. *Women in Natural Resources* 14:2.
- Forest Products Society. 1993. *A global challenge: Balancing the world's raw materials and environmental needs*. Summary of the proceedings of the conference, Wood Product Demand and the Environment. Nov. 13-15, 1991. Vancouver, British Columbia, Canada. Madison, WI: Forest Products Society.
- Fourteen billion feet of timber burns. *Crow's Pacific Coast lumber digest*. Sept. 5, 1933:16.
- Gale, Richard P., and Sheila M. Cordray. 1991. What should forests sustain? Eight answers. *Journal of Forestry* 89(5):31-36.
- Lavender, Denis P. Science should drive the discussion. *Oregonian*, April 2, 1993.
- Levesque, Paul. Personal interview. August 17, 1994.
- Maser, Chris. 1989. *Forest primeval: The natural history of an ancient forest*. San Francisco: Sierra Club Books.

- McPhee, John. 1971. *Encounters with the archdruid*. New York: The Noonday Press.
- Miller, Gregory A. Oregon's schools depend on state forest land. *Business Viewpoint* (a publication of Associated Oregon Industries), Education Special Edition, April 1993.
- Oregon Department of Forestry. Long-range planning process begins for Northwest Oregon state forests. *Horizons* (a publication of the Oregon Department of Forestry), May 1994.
- Quillen, Ed. Now that Denver has abdicated, who will coordinate and inspire the West? *High Country News*, May 3, 1993:1, 6-15.
- Robbins, William G. 1985. The social context of forestry: the Pacific Northwest in the twentieth century. *Western Historical Quarterly* 16:413-27.
- Robbins, William G. 1986a. Labor in the Pacific Slope timber industry: a twentieth-century perspective. *Journal of the West* 25:8-13.
- Robbins, William G. 1986b. Timber and war: an oral history of Coos Bay, Oregon, 1940-1945. *Journal of the West* 25:35-43.
- Robbins, William G. 1988. *Hard times in Paradise: Coos Bay, Oregon, 1850-1986*. Seattle and London: University of Washington Press.
- Roosevelt, Theodore. 1908. Opening address to conference of state governors called to address the topic of conservation. Copy in possession of the author.
- Twining, Charles E. 1985. *Phil Weyerhaeuser, lumberman*. Seattle and London: University of Washington Press.
- Ulrich, Roberta. Umatillas balance environment, timber. *Sunday Oregonian*, March 26, 1995.
- Wilkinson, Charles F. 1993. A tribute to the man who imagined the West we now seek to build. *High Country News*, May 3, 1993:16.