The Andrews Experience
50 Years of Forest Research

A special supplement to McKenzie River Reflections - May 12, 1998

Andrews celebrates 50 years of unlocking forest secrets

By Julie Gravelle

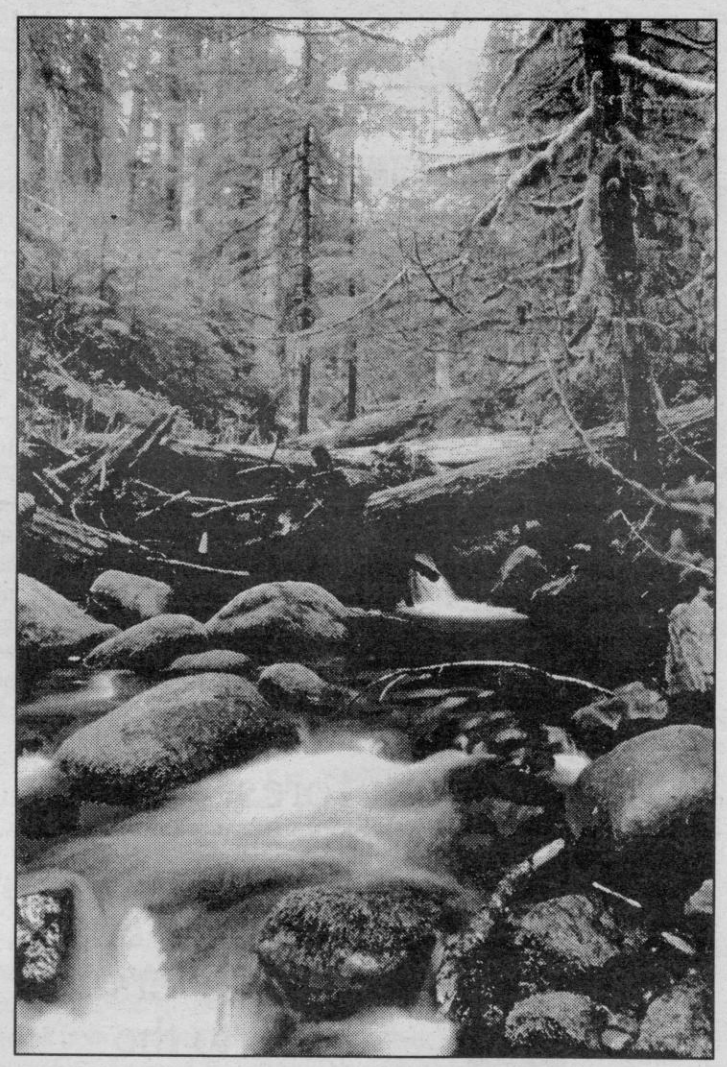
Nestled in the Western Cascades just east of Blue River, a collection of unassuming brown buildings in a quiet valley belie the world-changing research that has gone on here.

Casual visitors to the Andrews Experimental Forest probably meander through it on a series of winding dirt roads, marveling at towering, moss-draped Douglas firs and bubbling streams. They may not realize they're on one of the most intensively studied forests on earth.

A generation of scientists have waded in those streams, hoisted themselves into the tops of trees and sifted through soils on their way to discoveries that have forever changed the way we see forests.

In the 50 years since its creation, the Andrews magnificent old-growth Douglas fir forests which occupied about two-thirds of the area. But forestry research back then had nothing to do with understanding ecosystems. The idea was to build more logging roads more efficiently and minimize erosion. At that time, trees still were regarded mainly as a highly valuable crop. An important contribution of those years was the idea of planting trees after cutting to guarantee quick regeneration and stabilize soils, a concept that seems all too obvious today.

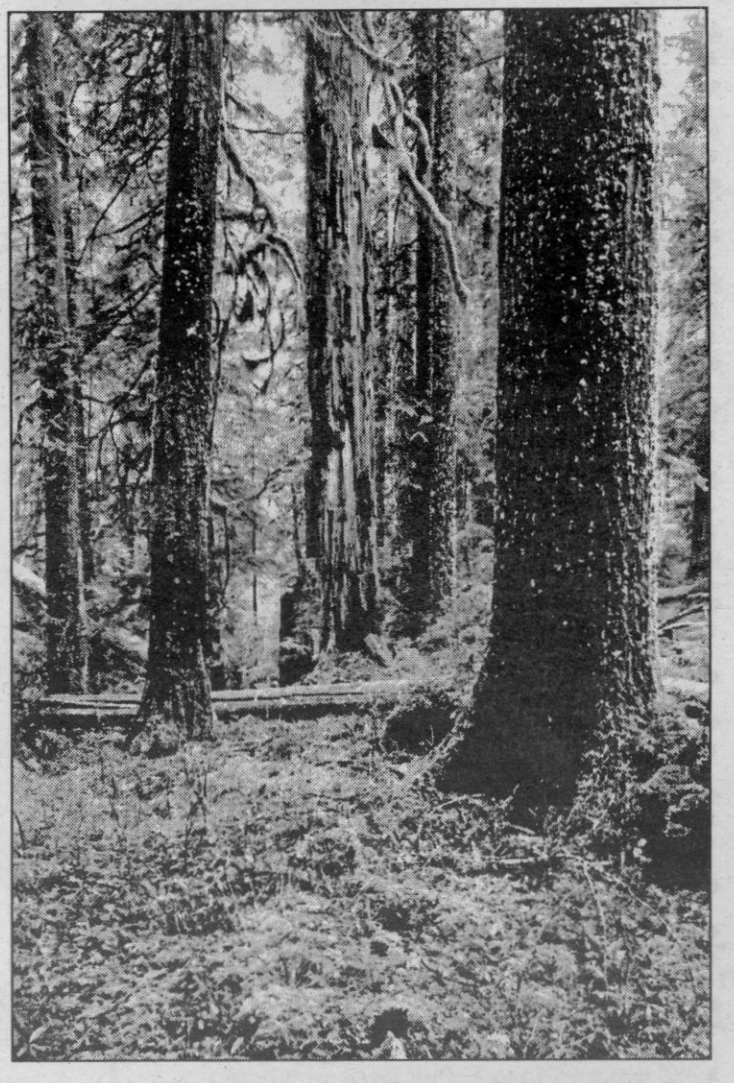
In the 1960s, experiments began to test the effects of logging on stream flows and erosion as logging operations moved into steeper and more remote mountainsides. Enter legendary research scientist Jerry Franklin, the spiritual leader of a group of scientists whose work was



understanding the interrelationships between forests and streams in the Western Cascades. Established in 1948, the Forest has become a world-class center for ecosystem research.

The forest provides a focal point for sustaining a long-term interdisciplinary research programs critical to solving present and future problems in natural resource management. Long-term observations of basic environmental factors and vegetation development are maintained for use by anyone.

Mark Harmon, a forest ecology professor at Oregon State University, discusses his log decomposition study at the Andrews Forest. Harmon's study, designed to last over 200 years, analyzes wood samples to study the rate and nature of log decomposition. From studies like this, future researchers may be able to determine just how much nutrition rotting logs contribute to the forest.



Forest has been a leader in giving scientists, foresters and environmentalists clues about how forests work.

Research results from here played important roles in moving the region past the contentious issues surrounding public land management, that pivotal period of change in the history of forestry which threw into upheaval the lives of many Northwest people and communities whose livelihood centered around logging. And discoveries from the Andrews Forest continue to shape public policy.

The 16,000-acre Andrews Experimental Forest is named for regional forester Horace Justin Andrews, who in 1948 helped select the location of the Forest seven

This diminutive forester, affectionately nicknamed "Hoss," was 50 years ahead of his time. His concern about declining fish runs in the Coast Range due to logging sharpened his determination that the scenario not be repeated in the Cascades. There was no time to lose as pressure to clearcut the Cascades was mounting.

Like others before and after him, Hoss was drawn to the Andrews in part because of its soon to have a profound impact. Because Franklin loved the Andrews Forest, he wanted to study it. As fate would have it, the Andrews' collection of both old growth forests and young tree stands caused the resulting research to dramatize the differences between the two.

In 1970, a group of scientists that included Franklin got money from the National Science Foundation to participate in the International Biological Programme's study of ecosystems. It was then that university scientists and graduate students began to make their presence known at the Andrews Forest. This small army of specialists, ranging from scientists who study mushrooms and other fungi to those who study birds, mammals and trees, came together and spread throughout the Forest to examine it with a fine-toothed comb. They began to weave their skills together in what became an Andrews Forest trademark: collaborative research.

"The Andrews bunch is a very unique group of people," said Steve Eubanks, a former Blue River District Ranger who worked with Andrews scientists to put their ideas into practice on the Willamette National Forest.

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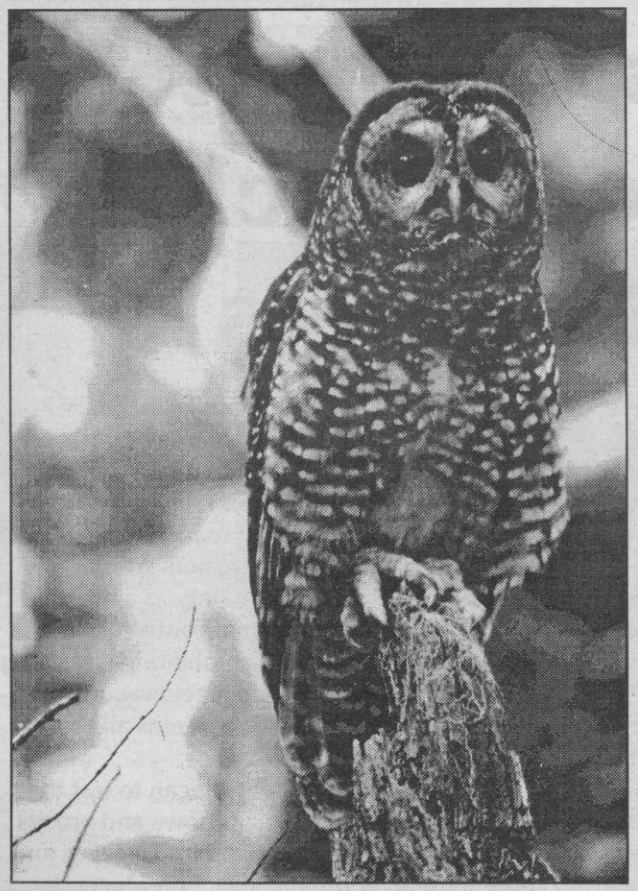
practice on the Willamette National Forest. "They created a model that people still want to emulate, but that's difficult because it happened in part because of particular personalities and persevered because of the strength of the people involved."

Art McKee, the Andrews' director and one of the scientists involved in those early life as they knew it.

Based on that group effort, a concept called ecosystem management was developed. It was the ammunition that fueled a revolution. Labeled New Forestry by Franklin, ecosystem management essentially supports tree cutting balanced with leaving some trees standing to keep the connections in place.



The northern spotted owl is a notorious resident of old-growth forests of the Pacific Northwest, including the Andrews Forest. Research on the basic biology of the owl at the Andrews Forest is helping clarify potential forest management practices to save the owl and other old-

Just as a fire or windstorm leaves some trees upright, a logging program can be designed to partially mimic the effect caused by the natural pattern of fires. The idea is to maintain long-term productivity and biological diversity, important over the long term for wood quality, insect and disease resistance and adaptability to climatic change.

While the Madison Avenue-sounding New Forestry phrase was embraced by journalists, it put off land managers, whose support was essential to its implementation. By the time the U.S. Forest Service implemented some of its principles in the early 1990s, ecosystem management was labeled the vague "New Perspectives in Forest Management." But the intent was clear: foresters were to work to build diversity back into managed forests.

An early proponent was Steve Eubanks, then district ranger for Blue River.

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"It was a total shift from simple cause-and-effect studies to learning why things behave as they do," he said.

Their involvement helped them to realize in part that old trees had value other than as wood pulp - in fact, old growth forests were a complex and productive system that supported fungi, plants, insects and mammals. Age-old practices of clearing the forest floor of all that debris were depriving the forests of what they needed to complete their cycles of regrowth. In those times of burgeoning environmental awareness, the public was eager to learn - and, in some cases, embrace - what they had discovered. For others, the discoveries meant the end of

were clearcut, and leftover debris was burned. But Eubanks paid attention to information coming out of the Andrews Forest, and he became a proponent of building diversity back into managed forests.

Eubanks' determination and enthusiasm was clear from the beginning. He called a meeting between key district employees and Andrews researchers in which they were told the importance of leaving some standing trees and woody debris on the ground instead of burning it - a radical concept at the time.

"I told people they couldn't leave the meeting until we had the guidelines to do it," he said, half-jokingly.

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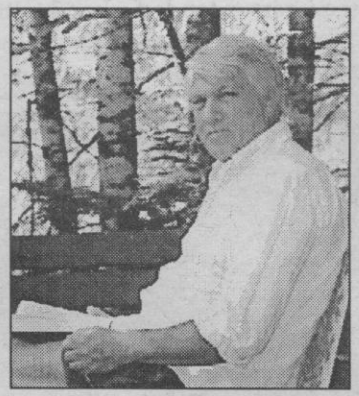
pointed to as the culprit of this economic hardship, the crash in timber supply had been forecast in the 1970s by forest economists at Oregon State University.

The summit was a watershed in that it forever changed the emphasis by the Forest Service on timber management as the dominant use of federal forests, and Eubanks credits research from the Andrews for starting the ball rolling.

"If our collaboration along with the Andrews group hadn't happened, I don't believe we'd have an ecosystem management policy in the United States," he said "I don't mean that from arrogance - it's a down-to-earth assessment of what went on. They were the epicenter of the ecosystem earthquake. I have come to realize that a small group of workers at a Forest Service District office, along with researchers, really did change the direction of the Forest Service."



Art McKee, a biologist with Oregon State University, has been the director of the Andrews Forest since 1977.

While industry was probably the most skeptical about ecosystem management, it's routinely practiced at some large Midwestern pulp manufacturing companies like Boise Cascade and Potlatch, which lie near Eubanks' current ranger district in the Chippewa National Forest in Cass Lake, Minnesota.

Meanwhile, back in the Northwest, Blue River District Ranger Lynn Burditt inherited the difficult task of convincing the Northwest's land managers that ecosystem management made sense for their bottom line. Burditt began her job at the district about the time a federal court judge put an injunction on timber sales in Pacific Northwest forests.

Who was H.J. Andrews?

By Julie Gravelle

Horace Justin Andrews (1892-1951), or "Hoss" as he was nicknamed, was a regional forester for the Willamette National Forest. As a strong supporter of forest research, Andrews was directly involved in selecting the location of the Andrews Experimental Forest in 1948. When Andrews died in an automobile accident in Washington D.C., the Experimental Forest was renamed in his honor in 1953.

He had just been tapped to be the new chief of the Forest Service at the time of his death, according to his only child, daughter Virginia Andrews Burns, who lives in Portland. "He was in Washington looking for a house when he was killed," she said.

Burns, who was 26 years old when Andrews died, remembers him as a "doting father" who loved to fish and travel throughout the state with her and her mother. She came to view him through adult eyes when reading his correspondence and speeches as well as letters that were written to her mother after his death.

"He was a man who could see many sides of things," she said. "He had the ability to understand not just his viewpoint, but other angles."

Burns plans to attend the anniversary activities with her four children and some great-grandchildren.

"It's very exciting in a way - you never see your parents as outstanding because they're your parents," she said. "It's been revealing to me to discover that he was so highly thought of."

Horace Justin Andrews, or "Hoss" as he was known to friends and colleagues, is the namesake of the Andrews Forest. He was the regional forester in Oregon and Washington during the 1940s. A man ahead of his time, Andrews was concerned about the effects of logging on water quality and spawning habitat.

If you go...

A public tour of the Andrews Experimental Forest will be conducted beginning at 9:30 a.m. on Saturday, May 16, and will include members of the Eugene Natural History Society. The Society extends an open invitation for the public to attend a presentation on old-growth forests at 7:30 p.m. on Friday, May 15 in Room 110, Willamette Hall, on the University of Oregon campus.

If interest exists, an additional anniversary tour will be held on Saturday, June 20th. Space is limited on both tours. For reservations and more information, contact Pam Druliner at 822-33171. To learn more about the Andrews Forest, visit the website at www.fsl.orst.edu/lter.

Andrews By the Numbers:

Year established: 1948 • **Acerage:** 16,000 • **Range in elevation:** 1,350 feet to 5,340 feet
Proportion of Andrews that has been logged: 1/3rd with another 5 percent in roads
Streams: 3 - Lookout, McRae and Mack Creeks
Publications from research at the Andrews: over 2,400

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enough data to make the changes," she said. "Just two years later, their attitude changed from 'I can't believe you're thinking about this' to 'How can we do this?'"

The Blue River District had more latitude to act differently because of its connection to the science community, Burditt said.

"It will be interesting to see if it stays that way," she said, citing some Congressmen's recent complaints that implementing ecosystem management on federal lands, in light of declining timber sales receipts, is too costly.

"If those people had their way, we'd be cutting more," she said.

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Graduate students in any year: about 35 • **US universities** with researchers at the Forest in any year: about 30
Countries from which researchers have come since 1995: over 25
Sream gauging stations: 10 • **Meteorological stations**: 4 • **Active spotted owl nests** as of May 6: 4
Number of tree species: about 25, most common are Douglas-fir, western hemlock, and western redcedar at lower elevations, and noble fir, Pacific silver fir and mountain hemlock at higher elevations
Age of the oldest tree: well over 800 years • **Plant species**: about 500
Invertebrate and insect species: over 3,700 known, probably twice that in total
Fish: 8, cutthroat trout, rainbow trout, three sculpin species, two minnow species and largescale sucker
Birds: over 85, including harlequin duck, dipper, northern goshawk, red-tailed hawk, osprey, northern spotted owl, great horned owl, mountain quail, blue grouse, Swainson's thrush, rufous hummingbird, mountain bluebird, pileated woodpecker, and violet-green swallow
Mammals: about 50, including otter, beaver, black bear, bobcat, mountain lion, coyote, red-tree vole, California red-backed vole, Townshend chipmunk, northern flying squirrel, marten, black-tailed deer, and Roosevelt elk
Reptiles and amphibians: about 20, including Pacific giant salamander, torrent salamander, tailed frog, northern alligator lizard, rubber boa, and Northwestern garter snake
Mean monthly temperature in January: 34 degrees F • **Mean monthly temperature** in July 64 degrees F
Average rainfall per year: 90 inches in lower elevations; 145 inches in higher elevations

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Using the Knowledge Storehouse

Today the Andrews Forest is administered cooperatively by Oregon State University, the Forest Service's Pacific Northwest Research Station and the Willamette National Forest. McKee, an Oregon State University biologist, is its current director. Because of its long history of experiments and large collection of scientific data, the Forest is involved in many long-term studies that are important to solving both regional and national resource management problems.

For example, researcher Mark Harmon's log decomposition study is designed to last at least 200 years. Once a year, Harmon is slicing small rounds, or cookies, from the ends of the logs and analyzing the wood to study the rate and nature of their decomposition, a process that can take centuries in some species. From studies like this, future researchers may be able to determine just how much nutrition rotted logs eventually contribute to the forest.

The Andrews' storehouse of research also was used to respond to recent questions about the ecological effects of the floods of the late 90s and the effects of logging and road systems on their

logging and flooding will continue to keep the Andrews on the political forefront as its scientists provide crucial input to policy makers.

Every summer, between 80 to 150 scientists, educators and visitors head to the Andrews Forest during its busy field season. The 3.5-acre headquarters site has evolved from a collection of tiny trailers to three, multi-unit apartment buildings, a shop, a cafeteria, an office building and a new lecture hall and classroom building. Scientists now come from not only the U.S., but from all over the world.

Research on aquatic ecology has been a mainstay of the Andrews Forest program since the 1950s.

The Andrews Forest was in the vanguard of the establishment of Long-Term Ecological Research Program, a comprehensive look at ecosystem

including China, Russia, Hungary, South Africa, Great Britain, Mexico and Canada.

To the average resident of the McKenzie River Valley, the Andrews Experimental Forest still isn't much more than a name. That's because in its first 50 years, the Forest's main focus has been research. That, too, is changing.

Lately, more visitors to the Andrews Forest are there for education, from the McKenzie School District's Outdoor School to community college science teachers who participate in field laboratory exercises they can adapt to their own college classes. About 15 classes from universities and colleges schedule annual field trips to the Andrews Forest.

Until recently, the Andrews education efforts have focused on land managers, students, the media and policy makers.

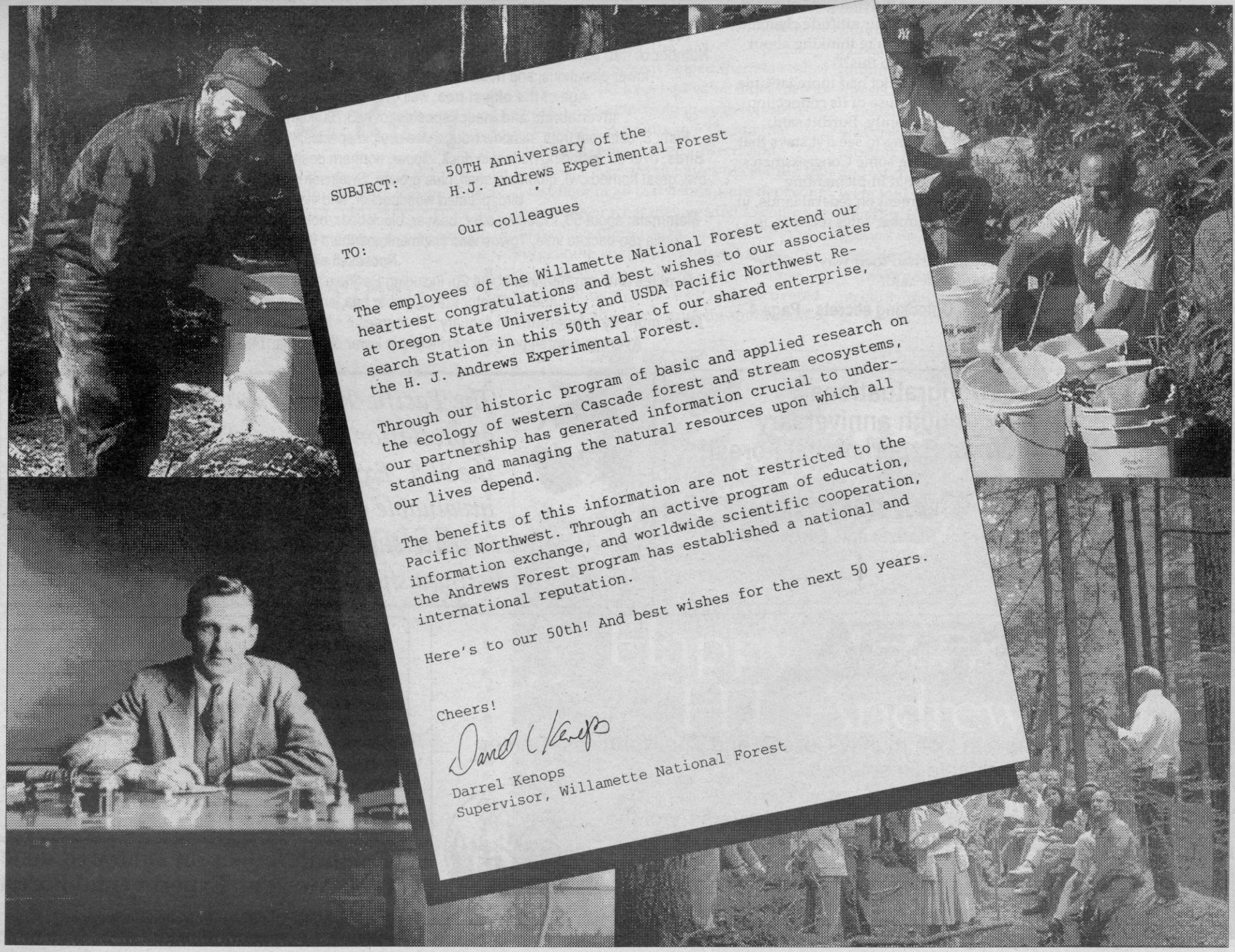
Because of an increasing number of requests for individual field trips, the Cascade Center for Ecosystem Management was established in 1992. The Center has helped formalize the education that's been part of the Andrews program for years. A public education specialist has been hired to act as a liaison between the scientists and the general public.

The Andrews' strengths will continue to lie in combining cutting-edge science with showing non-scientists how that research can help shape the world around them.

"This is one of the few places in the world where world class scientists work hand-in-hand with day-to-day practitioners," McKee said. "It began to happen when the researchers extended a hand to the land managers and invited them to the dance."

Jerry Franklin measures the rate of flow from a watershed, part of his forest ecology work at the Andrews Experimental Forest. Franklin, now a forest ecology professor at the University of Washington, played a pivotal role in the development of ecosystem

program expanded to 35 other countries,



SUBJECT: 50TH Anniversary of the
H.J. Andrews Experimental Forest

TO: Our colleagues

The employees of the Willamette National Forest extend our heartiest congratulations and best wishes to our associates at Oregon State University and USDA Pacific Northwest Research Station in this 50th year of our shared enterprise, the H. J. Andrews Experimental Forest.

Through our historic program of basic and applied research on the ecology of western Cascade forest and stream ecosystems, our partnership has generated information crucial to understanding and managing the natural resources upon which all our lives depend.

The benefits of this information are not restricted to the Pacific Northwest. Through an active program of education, information exchange, and worldwide scientific cooperation, the Andrews Forest program has established a national and international reputation.

Here's to our 50th! And best wishes for the next 50 years.

Cheers!

Darrel Kenops

Darrel Kenops
Supervisor, Willamette National Forest