

Welcome to the Fall 2000 issue of the Central Cascades Adaptive Management Area newsletter. It's been a busy year! We've continued work on on-going projects, such as the Blue River Landscape study, and started on some new projects, like the Virtual Library. This newsletter will highlight these and some other projects we've been working on.

As you read through the newsletter, you may notice that we're not alone in our work. We are proud of, not only our interagency partnerships, but also of the partnerships we've built with watershed councils, private industry, and you - our friends and neighbors.

Taking the McKenzie's Temperature...by Helicopter!

Anyone who has gone for a swim in the McKenzie River (either accidentally or on purpose!) already knows it is COLD! So, why would we want to measure its temperature, let alone by using a helicopter?

The Willamette National Forest, in partnership with the McKenzie Watershed Council and other agencies, has been collecting a variety of data, including water temperature, chemistry, turbidity, and aquatic insects. This information has been very useful to the folks looking at restoration projects such as stream-side shade plantings.

The temperature of this river

does change from place to place. Geothermal warm water (i.e. hot springs), and cold tributaries make the picture complicated. As you could imagine, sticking a thermometer into every lineal foot of the McKenzie River to take its temperature would be quite an assignment. Fortunately, new technology has actually made this possible - and nobody gets wet feet!

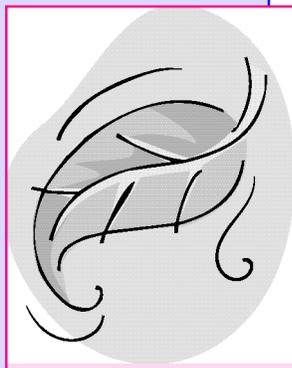
Early in September last year, Medford's Snowy Butte Helicopters was contracted to fly over approximately 40 miles of the river from Trailbridge Reservoir to Quartz Creek. This was funded by a \$5000 grant from the National Fish and Wildlife Federation. As they flew a scant 600 feet above the river, a video camera filmed the stream below. At the same time, a "forward looking infrared radar" digitally record temperature data directly to an onboard computer.

The Central Cascades Adaptive Management Area provided an additional \$5000 grant for the Pacific Northwest

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Research Station and Oregon State University personnel to interpret the radar data. The final product is an exciting computer record that simultaneously shows photos of the McKenzie River and its changing temperatures.

We found that the McKenzie has the greatest range in temperature of almost any other stream that has been radar surveyed. Hot springs

contrast with cold springs (such as Ollalie) to make the McKenzie River an interesting mosaic of thermal patterns. In spite of the presence of hot springs in the system, the volume of cold water entering the river far outweighs the warm water. The McKenzie and its tributaries are definitely cold streams compared to others throughout Oregon. Those melting mountain glaciers sure do make a

difference!

Computer specialists at the McKenzie Ranger District are enjoying their exploration of the ArcView database of images and data, and are using it to develop ways to improve our design of restoration activities in the McKenzie River. Feel free to stop by for a look!

*-Dave Kretzing and Cheryl Freisen,
Willamette National Forest*

Young Stand Thinning and Diversity Study Workshop

Approximately 150 managers, scientists and others interested in young stand management attended a workshop in April of 2000 to hear the latest results from the Young Stand Thinning and Diversity Study. The study was initiated in 1990 through the Cascade Center for Ecosystem Management, a partnership among the Pacific Northwest Research Station, Oregon State University and the Willamette National Forest.

The purpose of the study is to see if different thinning, underplanting, and snag creation treatments can accelerate the development of late-successional habitat and increase plant and wildlife habitat diversity in 35-45 year old plantations while still contributing economic value. Active treatments are being compared to control areas where no activities are planned. Plant, songbird, small mammal, and chanterelle mushroom responses are being evaluated. In addition, several aspects of logging operations and nutrient cycles

were examined including the economics of alternative treatments and logging systems, and stand and soil damage resulting from alternative logging systems.

Nearly ten years of effort is beginning to pay off. Year three post-treatment measurements were taken in 1999, setting the stage for the first comprehensive look at the results of these treatments. Scientists involved in the study presented preliminary results at the workshop and fielded questions from the audience. Small group discussions

were held to further reflect on the implications of study findings and to better define future questions for managers and scientists. Additional discussions were held to refine plans for a series of

young stand management workshops and field tours currently being planned for 2001 by individuals from Oregon State University, the Forest Service, the Bureau of Land Management and other interested organizations. The purpose of these events is to highlight young stand management work across the region and to identify relevant findings.

-John Cinsel, Willamette National Forest



Visit :

www.fsl.orst.edu/ccem/yst/ystd.html

for a summary of the findings presented at the workshop, and to get the latest information about progress of the study.

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Blue River Landscape Study - Adaptive Management in Motion

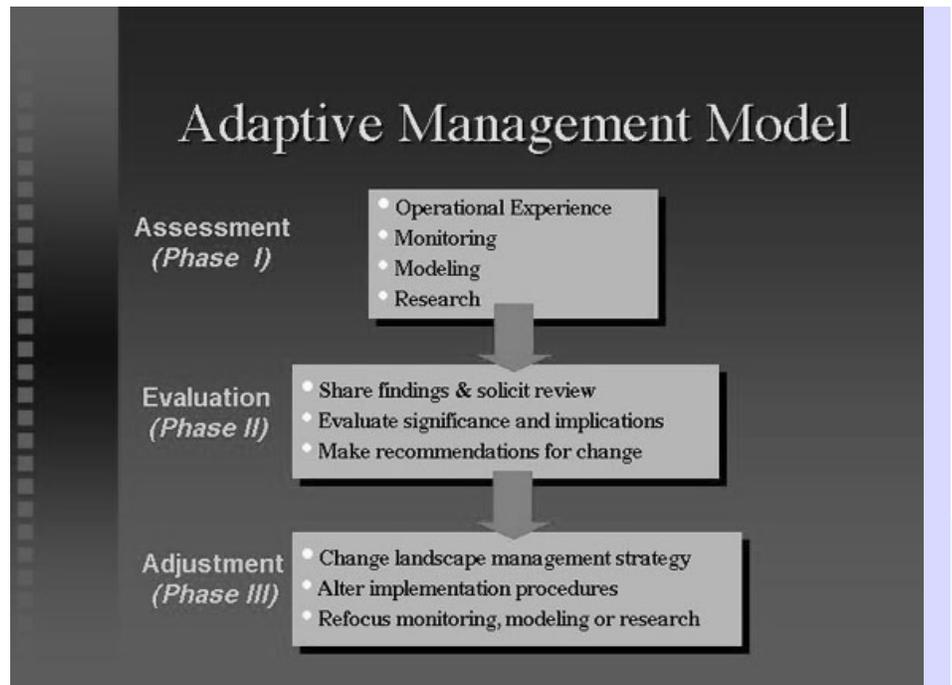
The Blue River Landscape Study seeks to develop and test alternative approaches to achieving the objectives of the Northwest Forest Plan by using natural disturbance regimes as a general model for landscape management. The Landscape Team stationed at the Blue River Ranger District (Willamette National Forest) collaborated with Pacific Northwest Research Station and Oregon State University scientists in 2000 to conduct the first adaptive management assessment of this landscape management approach.

The general approach used for adaptive management in the Blue River Landscape Study consists of three phases:

- Phase 1: Assessment
- Phase 2: Evaluation
- Phase 3: Adjustment

Assessment Phase

The assessment phase employs multiple modes of learning to discover new information relevant to managing under this concept and to assess the potential effects. New information came from several sources: operational experience, modeling and research. Operational experience gained from early implementation of this approach was used to identify areas for potential improvement in the landscape plan. Preliminary results from modeling assessments were also used to get a rough view of what will only be observable on the ground after many decades.



Three phases of the Adaptive Management process

Results from applicable research projects conducted in the vicinity were also examined to help understand landscape patterns and ecological processes directly relevant to the landscape management approach in the study. The Landscape Team identified several aspects of the landscape plan for potential change. Major topics included:

- dead wood management,
- road restoration strategies,
- identification and management of material source areas for aquatic habitat,
- improvements in vegetation prescriptions, and
- other "fine-tuning" of the landscape plan.

The team evaluated each of these information sources and made recommendations for changes to the landscape plan and related implementation procedures.

Evaluation Phase

The recommendations were shared with others through presentations, written materials, and discussion during field tours, workshops, the study web site, and in reports focused on evaluation of the landscape plan. Feedback obtained directly from managers, policy-makers and interest groups through these interactions was used to refine recommendations. Results from these efforts can be found on the Blue River Landscape Study web site in the adaptive management section (www.fsl.orst.edu/ccem/brls/brls.html).

Adjustment Phase

As the year end nears we are moving into the final phase of this round of adaptive management: deciding which adjustments to

make to the landscape study. Adjustments to the landscape management strategy are made based on the information produced from the preceding phases, and other sources of new concepts or information.

Visit the Blue River Landscape Study web site (www.fsl.orst.edu/ccem/brls/brls.html) to learn more about the study, and to follow progress in our adaptive management cycle. Feel free to contact us if

you have ideas about these and other landscape management approaches.

-John Cissel, Willamette National Forest

Middle McKenzie Landscape Design

The McKenzie Resource Area is developing a landscape design for the Middle McKenzie Landscape Area located within the Central Cascades AMA. The Middle McKenzie Landscape Design is an alternative approach to meeting the intent of the Northwest Forest Plan. This design is modeled after the Blue River Landscape study.

For instance, more leave trees will be left on the lower slopes than on the upper slopes as a way of approximating fire patterns. The plan also proposes revising riparian reserves, developing small basin reserves and longer harvesting rotation lengths.

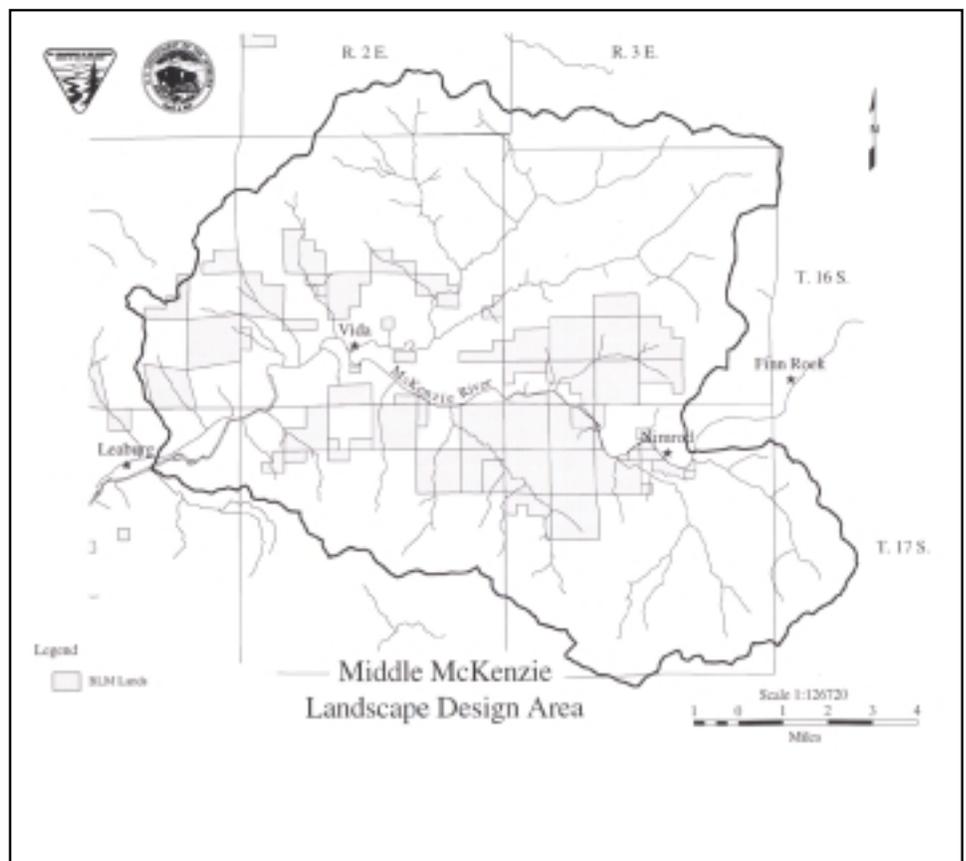
the coming year, we plan to complete the landscape design, start implementation of fish restoration projects and complete recommendations for managing the transportation system on BLM lands along the McKenzie River.

-Trish Wilson, Eugene District Bureau of Land Management

The Middle McKenzie Landscape Design is an ongoing project. In

In developing the Middle McKenzie Landscape Design, we incorporated information contained in a fire history study completed for the area by Oregon State University researcher, Peter J. Weisberg and reviewed forest stand data collected from areas harvested several years ago.

The information from the harvested stands, gave us detailed data about species diversity, stand structure and age class information without having to collect new data. The fire study, and other information (such as old aerial photos) helped us to understand the pattern left on the landscape after past fires. This information is helping formulate a proposal for how many trees should be left after a final harvest and how the trees should be left on the landscape.



To learn more about the
Central Cascades Adaptive
Management Area

Visit

www.edo.or.blm.gov/ccama

visit

www.teleport.com/~amanet/

to learn more about the
Adaptive Management
Portal



Monitoring of Headwater Stream Amphibians

Cascades salamander, tailed frog and the Pacific giant salamander are assumed to be adequately protected through implementation of practices outlined in the Northwest Forest Plan. But what if we did something different? Would they still be protected?

Monitoring stream amphibians would help support an evaluation of Aquatic Conservation Strategy objectives, under an alternative management regime. The streams selected for monitoring are located in the Middle McKenzie Landscape Area. These streams are significantly different in geomorphology and meander through differing management regimes, including timber harvest.

This work is being done by Matt Hunter a Research Scientist. This year, 56 stream segments were surveyed for the presence of amphibians, to assess their suitability for long-term monitoring and to collect information on stream characteristics.

Streams were sampled in 100 to 400 meter reaches. The objective was to collect baseline data such as density, linear rate of occurrence, and spatial distribution. The long-term monitoring of amphibians will occur on roughly 10-30 streams/stream segments. The final report is due February 2001.

*-Trish Wilson, Eugene District
Bureau of Land Management*

Adaptive Management Meets the Internet

The Adaptive Management Area Network, representing AMAs across the Pacific Northwest, has just begun a three-year project to develop a virtual library system for use across the Network. The purpose is to make a diversity of reliable information, from multiple sources, easily accessible using internet technology, in other words, to develop a virtual library and more.

This library will have an additional attribute, which allows users to annotate observations. This idea will be tested in the following areas:

- Applegate Partnership
- Central Cascades AMA
- Snoqualmie Pass AMA

The advantage (of this library) to users is that they can obtain useful information in an efficient manner. Advantages to the producers of information include not only providing users with reliable information, but also the ability to broadcast findings to a targeted audience; it would reduce website development and maintenance costs by becoming a "family" of information providers; the volume of phoned information requests would be reduced, and an increase in efficiency would occur by

providing a location for that information.

This project is funded by the National Science Foundation, the U.S. Forest Service, the Park Service and the Bureau of Land Management. The Network entered the Research, Development and Applications effort with the Oregon Graduate Institute, a graduate school in computer sciences, and Eric Landis, a consultant who first championed these ideas.

*-Tim Tolle, Regional Office of the
Forest Service*

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Update: Camas Prairie Restoration

Camas Prairie is a 15-acre project site. For over 4 years, work has occurred to restore the wetland into a healthy camas meadow.

This year activities have included collecting camas seed, blackberry control by the Linn County Sheriffs Inmate Crew and preparation of a draft interpretive brochure by Lea Asman, an OSU student. This fall, the area was burned to reduce noxious weeds and to encourage camas seeding. The burn was conducted by the Forest Service and the Siletz and Grand Ronde tribes who are partners in the project.

The camas seed that was collected this spring will be scattered in the area after the burning.

*-Alice Smith, Willamette National Forest and
Trish Wilson, Eugene District Bureau of Land
Management*



Camassia quamash

Rare Lichens in the Central Cascades AMA

What lichen species/communities are associated with large stream riparian systems? And what are the habitat characteristics associated with these areas?

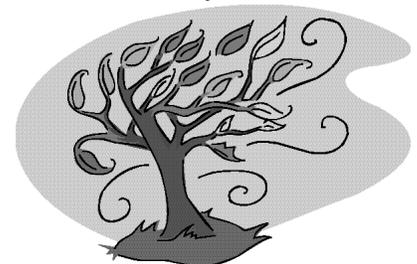
Research work by Dr. Bruce McCune and graduate student Jennifer Hutcheson, both of Oregon State University, will help in answering these questions. Their research explores a different method in management of survey

and manage species by focusing on a habitat-centered approach.

A complimentary study is near completion on the Blue River Landscape Study area. The research work will focus on five streams in the Middle McKenzie Landscape Area: McKenzie River, Bear Creek, Marten Creek, Deer Creek, and Gate Creek. The field work begins this fall and will be completed in April 2001.

A final report is expected in September 14, 2001.

*-Trish Wilson and Nancy Wosen,
Eugene District Bureau of Land
Management*



Learning more about Beargrass

Beargrass is heavily harvested and culturally important, yet there is virtually no documented information on the basic biology, ecology and systematics of beargrass. A research study has been proposed to address four primary study questions:

- What are the effects of different types of harvesting on beargrass reproduction, growth, and development?
- What is the reproductive biology and ecological relationship to pollinators?
- How is population structure as well as individual plant structure and life cycle affected by habitat and stand conditions?

The purpose of this study is to provide information on how harvest affects populations of beargrass so sustainable harvest guidelines can be developed, but also to provide information on the fundamental ecological relationships that are important to beargrass and the surrounding plant community and habitat so that conservation guidelines may be developed and implemented as well.

Excerpt from:

Vance, N. 2000. Biology and Ecology of beargrass (*Xerophyllum tenax*): effects of harvesting and fire on plants and populations. Unpublished proposal to Willamette National Forest, Region 6, USDA Forest Service.

This project is proposed to be a 3-year project. At this time no funding is available for the third year, but is dependent upon outside support which will be sought. Sites have been located and plots and transects have been installed. Preliminary data is being collected and treatment plan is being developed.

Treatments will occur next year.

Growing Native Grass

The AMAs are places to test out new ideas about how best to manage forest ecosystems, and eventually take what is learned and apply it elsewhere on the forest.

The Native Seed Program has done just that. In fiscal year 1996, the Eugene District BLM and the Willamette National Forest started a series of demonstration projects designed to test a variety of native plant seeds such as fireweed, salal, big deervetch, blue wildrye grass and lupine.

While monitoring is still going on,

one of the things that has been learned is that native grass, especially blue wildrye, germinates and establishes readily on a site, often more quickly than other native species.

Native grass seeds are easy but time consuming to collect. The Willamette NF has been working with contractors to grow native seeds and put them in commercial settings since 1994. After all, we are in the Willamette Valley, which is a great place to grow grass among other things.

Over the past six years, we have focused our efforts on collecting

native grass seed and growing it for seed production. The next challenge will be to develop legumes to place in a native seed mix. However, before getting into the native grass growing efforts, let's talk about why we want to use native plants.

So, why do we want to use native plants?

- Native plant species have evolved inherent genetic diversity that allows a wide tolerance for climatic and other disturbance factors occurring in their native ecosystems.

- Native species have evolved with other plants and animals in their ecosystems, providing food and shelter.
- Native species, in general, are better adapted to natural rainfall/moisture patterns and usually do not require fertilizers or other expensive manipulation to maintain viable populations
- Native vegetation is recognized by the public as an important part of the natural community; maintenance of viable populations of native plants is mandated by BLM and National Forest policies.
- Many of the non-native plants are aggressive competitors of native plants and may not function to support healthy ecosystems.

We are not only using native grass seed but also the straw that remains after the seed collection has been completed. The straw can be used for mulching and the



BLM stock photo of fireweed

bales are used for such project work as instream work to trap sediment.

How do you get the native grass seed?

Contractors have been focusing efforts on collecting blue wild rye grass seed and other key grass

“We are looking for more organizations to be involved...”

species within multiple watersheds in the forest. Grass seed is then given to the commercial grass seed growers and seeds are planted in late September and harvested in August of the following year.

An estimated 5 - 10 pounds of blue wild rye yields 400-1000 pounds of seeds per acre in a commercial setting. Seeds are cleaned and stored in a cold place until they are ready to be used. The remaining straw is baled and kept dry until needed.

Do the growers have to do things differently for growing native seeds?

The growers are involved in this program because they are interested in working with native plants. However, at this time, the buyers for native seed grass are limited. Unknown yields and new technology make it risky for growers. In addition, growing native grass requires more work partially because the amount of acreage involved is small, and

noxious weed free seed is required by the agencies. That's a lot of effort for a small amount of ground! The risk has manifested itself in high costs for small lots of seed.

A bigger program could reduce the risk involved because it would be easier to absorb losses. Larger acreages would provide larger yields; thus, bringing cost down and making this a more viable program for the commercial grower and the government alike.

What is needed to build onto the success of this program?

The Eugene and Salem BLM Districts and the Willamette NF. are working together on this project. However, more partnerships are needed. Why? To make a more economically feasible project. The more grass that is grown the cheaper it is to grow it and the lower the cost of seed for the purchaser.

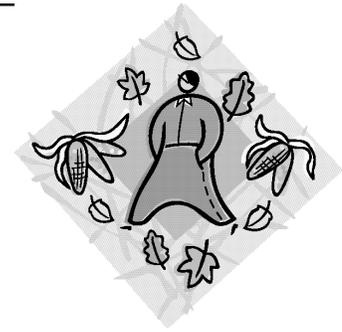
Right now, an estimated nine acres of land is under production for this project. This can be expanded. If more agencies that use vegetation in restoration projects, such as replacing culverts, or road construction, started using native grass seed, this program would grow.

We are looking for more organizations to be involved in helping us build a native species program, and in creating partnerships with commercial growers a viable option. If your organization is planning on using native grass seed in your vegetation management

program, we would be interested in exploring partnerships with you.

For more information call Jenny Lippert (541)456-6321.

*-Trish Wilson and Nancy Wozen,
Eugene District
Bureau of Land Management*



Hitting the Books to Learn about the McKenzie Watershed



A lower stretch of the McKenzie River

- what may be causing problems for key species or habitats
- when and where are there opportunities to improve fish and wildlife habitat
- where are the special areas we should try to maintain.

rare, special areas that we should try and maintain for the future.

By January 2001, the assessment will be used by the Watershed Council and its partners to start prioritizing and planning conservation projects for fish and wildlife. The residents of the watershed will be heavily involved.

The assessment will begin to answer the question of whether our watershed is healthy or not, and how to maintain or restore its special resources. We'll never fully understand its complexities, but to the best of our abilities, we will try to use this science to make a difference.

*-Cheryl Friesen, Willamette
National Forest*

Watersheds are complicated. That's a simple statement that overlies a complex problem: How do we know if our watershed is healthy? If it is, TERRIFIC! But how do we keep it that way? But, if it isn't, OH NO! How do we know how to restore it? The McKenzie Watershed Council, in cooperation with the Willamette National Forest and Central Cascades Adaptive Management Area, are working to get their brains around this dilemma.

This past spring, a watershed assessment was started to develop information on:

- how the McKenzie Watershed works

Local consultants, with the guidance of an interagency steering committee of local fish and wildlife experts, are conducting the assessment. Funding for the assessment comes from the Bonneville Power Administration.

The assessment is taking a comprehensive look at the watershed, but it is emphasizing the lower river and surrounding areas. Quartz Creek to the confluence with the Willamette River is primarily private property that has experienced major changes over the last century. Wear and tear from population growth and a variety of land uses is highly evident, so there may be significant opportunities in this area of the river valley for restoration. There may also be

Check out the
McKenzie Watershed
Council's website at:

www.pond.net/~mwc

Working with the Community: Ames Creek Restoration

In 1852, Lowell Ames settled his family along the stream that bears his name, Ames Creek. From his homestead, he could “survey the luxuriant plains with their meandering streams, the ever varied mountain side clad with dense forests of evergreen firs, and the still more lofty snow-capped mountains, around whose sides the clouds sport in wild confusion.” Wild game was plentiful and salmon migrated up the clear, cold running mountain stream, protected by a canopy of tall fir and cedar trees.

The site that old Lowell called “Paradise Camp” is now covered with blackberries and asphalt. Peel back the layers of rip-rap and trash, and one can almost see the clear, cold stream that was once home to Chinook and steelhead. Ames Creek is typical of so many streams, which some say is the unavoidable price of progress and urbanization.

The good people of Sweet Home, in partnership with the U.S. Forest Service, the Central Cascades AMA and the South Santiam Watershed Council are bringing Ames Creek back to life with a five-phase restoration project.

The first four phases of the project will treat the segments of the creek within city boundaries. This will, and has, involved the

participation of local school kids and their parents in removing non-native plants along 500 meters of stream bank, and planting native trees and shrubs. Phase one of the project was completed in the summer of 2000. Students have also been involved in pre and post project monitoring, establishing photo points and collecting water quality data.

“Perhaps the greatest benefit for all involved is the building of trusting relationships between the Forest Service and the community.”

The next step will reestablish the stream channel through an old mill pond and provide fish passage around an old dam. Phase five will deal with creek segments in the uplands, including urban and industrial forests.

Why is the Central Cascades AMA interested enough in this urban stream restoration project to provide funding two years in a row? This project showcases watershed restoration techniques

and bridges the gap between research and applied science in the community’s own backyard. This brings meaning and understanding of resource management issues to those who have traditionally relied on National Forests for much of their livelihood.

Perhaps the greatest benefit for all involved is the building of trusting relationships between the Forest Service and the community.

The Ames Creek Project will not bring back the untouched forested vistas that Lowell Ames first gazed upon. This project can result in a new vision for Ames Creek where communities, both human and aquatic “dependant,” recognize the benefits of sound, inclusive resource management.

-Todd Bucholz, Willamette National Forest

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This issue of the Central Cascades Adaptive Management Newsletter was edited by Trish Wilson and Christie Hardenbrook and designed and produced by Christie Hardenbrook.



New Publications From the Cascade Center For Ecosystem Management

For more information contact:
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Read all about it!

- Braudrick, Christian A.; Grant, Gordon E. 2000. *When do logs move in rivers?* Water Resources Research.
- Duncan, Sally. 1999. *Openings in the forest: the Andrews story.* Forest History Today. Durham, NC: Forest History Society; Fall: 20-28.
- Han, H.-S.; Kellogg, L.D. 2000. *A comparison of sampling methods for measuring residual stand damage from commercial thinning.* Journal of Forest Engineering. 11(1): 63-71.
- Han, H.-S.; Kellogg, L.D. 2000. *Damage characteristics in young Douglas-fir stands from commercial thinning with four timber harvesting systems.* Western Journal of Applied Forestry. 15(1):27-33.
- Jones, J.A. 2000. *Hydrologic processes and peak discharge response to forest removal, regrowth, and roads in ten small experimental basins, western Cascades, Oregon.* Water Resources Research. 36(9): 2621-2642.
- Jones, Julia A.; Swanson, Frederick J.; Wemple, Beverley C.; Snyder, Kai U. 2000. *Effects of roads on hydrology, geomorphology, and disturbance patches in stream networks.* Conservation Biology. 14(1): 76-85.
- Kellogg, Loren D.; Miller, Mark, Jr.; Olsen, Eldon D. 1999. *Skyline thinning production and costs: experience from the Willamette Young Stand Project.* Corvallis, OR: Oregon State University, College of Forestry, Forest Research Laboratory; Research Contribution 21. 33pp.
- Parendes, Laurie A.; Jones, Julia A. 2000. *Role of light availability and dispersal in exotic plant invasion along roads and streams in the H.J. Andrews Experimental Forest, Oregon.* Conservation Biology. 14(1): 64-75.
- Swanson, Frederick J. 2000. *Rocks, paper, soils, trees: the view from an experimental forest.* In: Schneiderman, J.S., ed. *The earth around us: maintaining a livable planet.* New York: W.H. Freeman and Company: 136-143.
- Summary notes from the *Young Stand Thinning and Diversity Study Workshop: Year 3 Post-Treatment Initial Results.* April 2000. (also available online at: www.fsl.orst.edu/ccem/yst/ystd.html)

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