

Forest Activities Report

CITY FISCAL YEAR 2014-15 (JULY 1, 2014-JUNE 30, 2015)

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Executive Summary

This is a Forest Activities Report for fiscal year 2014-2015 (FY 14-15) for the Corvallis Forest which is part of the Rock Creek watershed. This report highlights accomplishments and future planned activities on the Corvallis Forest. Topics covered include: Habitat Enhancement, Monitoring Update, and Education and Public Use. It was developed by City of Corvallis Public Works Department staff and Trout Mountain Forestry (consulting foresters).

The overall goal of the City for the Corvallis Forest is to provide a reliable source of high quality drinking water that surpasses all state and federal drinking water

requirements. The Corvallis Forest includes the Rock Creek water treatment plant, which produced approximately 30 percent of the City's annual water need, or about 840 million gallons of water in FY14-15. Water production for domestic use

is the first priority for all management practices within the watershed on City land. The Corvallis Forest also provides an opportunity to manage natural resources by restoring forest lands and terrestrial and aquatic habitats.



*North Fork Reservoir reflects turquoise on a mid-winter's day.
(Photo by Grant Livingston.)*

Watershed Management Advisory Board (WMAB) members

Jessica McDonald, Chair
David Hibbs, Vice-Chair
Charlie Bruce
Richard Heggen
Jacque Schreck
Sheryl Stuart
David Zahler
Joel Hirsch, City Council Liaison

City of Corvallis staff

Mary Steckel, Public Works
Director
Tom Hubbard, Utilities Division
Manager
Jennifer Ward, Watershed
Program Specialist

Trout Mountain Forestry staff

Mark Miller
Scott Ferguson
Matt Fehrenbacher

Introduction

Welcome to the seventh annual Forest Activities Report for the Corvallis Forest. This report describes activities undertaken over the past year (July 1, 2014 through June 30, 2015) to implement the Corvallis Forest Stewardship Plan, actions planned for the 2015-2016 fiscal year and a “snap shot” of conditions and trends on the City’s 2,350-acre Corvallis Forest. The City’s overall goal for the Corvallis Forest is to provide a reliable source of high quality drinking water that surpasses all state and federal drinking water requirements. The Corvallis Forest property includes the Rock Creek water treatment plant, which produced approximately 30 percent of the City’s annual water demand, or about 840 million gallons of water in FY14-15. Water quality is the first priority for all management practices within the watershed on City land. The Corvallis Forest also provides an opportunity to manage natural resources by restoring forest lands and terrestrial and aquatic habitats.

*City staff and WMAB members
tour the 2014-15 harvest site.*

*From left to right: David Hibbs
(WMAB Vice-Chair), Mark
Miller (Trout Mountain
Forestry), Jennifer Ward (City
Watershed Program Specialist),
Charlie Bruce, Sheryl Stuart,
David Zahler, and Jessica
McDonald (WMAB Chair).*

Stewardship Planning

Management of the forest is guided by the policies detailed in the Corvallis Forest Stewardship Plan (CFSP), which was adopted by the City Council in December 2006. A revised and updated version of the plan was adopted by the City Council in July 2013. The plan describes the property’s history and current resource conditions, details the vision and principles that guide management, describes desired future conditions, and outlines guidance policies in such areas as forest reserves, invasive species control, and resource monitoring. Opportunities and recommended actions are offered in each of seven different resource and land use areas. A copy of the plan is available for viewing at www.corvallisoregon.gov/¹ and at the Corvallis Public Library reference section.



The Watershed Management Advisory Board (WMAB) advises the City Council on policies and activities on the Corvallis Forest, and works to promote awareness of the Corvallis Forest as a public resource. This seven-member panel of citizen volunteers is appointed by the Mayor and generally meets monthly. All Board meetings are open to the public. The WMAB works with city staff, resource specialists and consultants to implement the CFSP policies.

¹ The direct link to the CFSP page is: <http://www.corvallisoregon.gov/index.aspx?page=126>.

Accomplishments for 2014-2015²

The following actions were initiated or completed in FY 2014-15:

Habitat Enhancement

Forest Diversity Thinning—The past year's cable thinning harvest occurred from December 2014 through January 2015 on 60 acres of an 85 year-old natural second-growth stand above Griffith Creek downstream of the water system diversion. The goals for harvesting were to improve crown development, increase wind-firmness, and encourage shrub and new seedling growth. Logging operations were conducted by Timber Harvesting Inc. of Sweet Home, in a professional and careful job that left well-stocked, healthy stands. Logs were sold to Freres Lumber in Mill City and Georgia Pacific in Philomath. Timing of the harvest couldn't have been better from an economic standpoint — the City received top prices for its logs and the dry weather reduced logging impacts and kept costs low. The thinning yielded just over 1 million board feet of timber, with net sale proceeds to the City of \$470,362.

Consulting forester, Mark Miller, explains a piece of logging equipment to WMAB member, Sheryl Stuart, during a visit to this year's harvest site.



Old Peak Meadow – The City, along with several partners (Institute for Applied Ecology, Oregon Wildlife Institute, Trout Mountain Forestry, and Oregon Hunters Association), received a 2013 Coast Range Stewardship Fund grant to enhance wildlife habitat on the 3 acre Old Peak Meadow. The multi-year project will diversify the plant species composition and vegetation structure of the meadow to increase its use by wildlife. Snags were created at the meadow's perimeter. A prescribed burn was conducted in the fall followed by invasive plant treatments in the spring to make way for the planting of native grasses, forbs, shrubs and oaks. A diverse plant community will ensure that this

Firefighters from Oregon Department of Forestry manage the prescribed burn at Old Peak Meadow.

increasingly rare, early seral habitat can be optimally utilized by those species that depend on it.

Fish Pools—The water intake structures on both Griffith Creek and South Fork are equipped with fish ladders to accommodate the passage of cutthroat trout. This year stilling pools were constructed at the bottom of each ladder. Stilling pools give fish that are migrating upstream the chance to rest before proceeding up the ladder.

Rock Creek water treatment plant operator, Mike Hinton, constructs a stilling pool for cutthroat trout at the base of the South Fork fish ladder.



² Accomplishments for prior years can be viewed in the respective Forest Activities Reports, which can be found at: <http://www.corvallisoregon.gov/index.aspx?page=143>.

Monitoring Update



Peacock larkspur – The Corvallis Forest Stewardship Plan includes guidelines for management of federally designated Threatened and Endangered species. A small population of peacock larkspur (a threatened Oregon prairie species) is found on City property and is inventoried every spring. This year a total of 633 peacock larkspur plants were counted within the boundaries of the Corvallis Forest. This is a decrease from last year's population numbers, and is thought to be primarily due to hybridization with another species of larkspur which also occurs on the Forest.

The City is partnering with the Corvallis chapter of the Native Plant Society of Oregon in a multi-year effort to augment peacock larkspur populations on the Corvallis Forest. This summer, seed was collected from “pure” populations at different sites in Benton County. Over the next three years, these seeds will be grown out in a private nursery before being planted at a new site on the Corvallis Forest with appropriate habitat and distance from other larkspur populations.

The City continues to manage peacock larkspur habitat on the watershed. In the fall, sites are mown and blackberry plants are cut to reduce competition. This year, Rock Creek operators removed shrubs and small trees from the north side of Rock Creek Road to improve the habitat for the large numbers of peacock larkspur that are found there.

Marbled murrelet – With the help of private consultants, the City completed the second of a two-year survey effort for marbled murrelets prior to undertaking the activities outlined in the next 5-year harvest plan. Biologists recorded marbled murrelet activity on one of the 46 survey sites. Survey data collected over the two years revealed that six of the eight survey sites are occupied. Murrelet presence was detected on one other site, while no detections were documented on the final site.

The City consulted with USFWS to develop a harvest plan for these sites that will protect nesting murrelet habitat. Site-specific prescriptions will be prepared for each harvest unit with protection measures which could include:

- Protecting potential structure from removal or damage;
- Conducting no harvest activities during the murrelet nesting period;
- Maintaining a 150-foot un-thinned buffer around all trees with potential structure;
- Maintaining an average canopy closure of at least 60% post treatment in the zone between 150 and 300 feet;
- Maintaining an average canopy closure of at least 40% post treatment in the zone between 300 and 600 feet.

The full 2014 Final Report can be found at: <http://www.corvallisoregon.gov/index.aspx?page=148>.



Rich Macintosh US Fish and Wildlife Service



Northern spotted owl – The Corvallis Forest is one of several areas annually surveyed for northern spotted owls by the Forest Service's Pacific Northwest Research Station as part of the Oregon Coast Range Spotted Owl Demography Study. Currently, no spotted owls are known to be inhabiting the Corvallis Forest, however, owls have been observed within the greater Rock Creek watershed on national forest land.

Cutthroat Trout - In 2009, the City, in partnership with Marys River Watershed Council, undertook a suite of grant-funded aquatic habitat restoration projects in Rock Creek and its tributaries. These included replacing three perched culverts and providing fish passage at two water intake structures resulting in the opening of 8 miles of habitat to cutthroat trout. Post-project snorkel surveys were conducted the summer of 2010 and have taken place each summer since.

After decreases in cutthroat trout abundance were recorded in 2012 and 2013, surveys conducted in 2014 showed a 49% increase when compared to the first post-project survey in 2010. When comparing just 2013 and 2014 abundances, there has been a 122% increase in cutthroat. These significant changes in abundance suggest that variables beyond the restoration activities may be affecting cutthroat populations. Basin scale data suggests there are years when the larger cutthroat metapopulation selects the Greasy Creek sub-basin (which includes Rock Creek) as a summer refugia destination. The combination of environmental factors that influences this selection is unknown. The full Model Watershed Monitoring Summary can be found at: <http://www.corvallisoregon.gov/modules/showdocument.aspx?documentid=9130>.



Stream temperature – The intensive stream temperature monitoring in the Corvallis Watershed that was begun in 2010 was continued in 2014. Precipitation, air temperatures, and stream flow for the last five years were compared to show the variability in some of the factors that influence stream temperature. Cumulative precipitation amounts were lower in 2014 compared to the previous 4 years. In addition, although the maximum air temperatures were similar in 2013 and 2014, the number of days that air temperatures were above 80 F doubled in 2014. The combination of lower flows and sustained warm days resulted in more days that were above the state standard of 64F for the 7-day average of daily maximum temperatures in 2014. In addition, the bottom of the reservoir was 2 to 5 degrees (F) warmer in 2013 than in 2012, and 2 degrees (F) warmer in 2014 than in 2013. For the first time in three years of monitoring data, the bottom of the reservoir was slightly warmer (64.52 F) than the state standard of 64 F in early September of 2014.

Stream temperatures in most of the tributaries continue to meet state standards for summer water temperatures. The exception was Stilson Creek, which had a 7-day average of the daily maximum temperature of 64.12 F. Stilson Creek flows on a south-facing slope, which may explain this tributary's slightly higher temperature. In 2014, the mainstem of Rock Creek was warmer than 2013 by a couple of degrees.

A stream temperature probe is attached to a downed log and flagged with pink at Bluff Springs, high up in the Rock Creek watershed.



Education and Public Use

The Corvallis Forest is gated to prevent unauthorized access and to protect the City's water supply, however educational use is encouraged and organized tours are provided. Recent education offerings included the following:



Public tour– Annual public tours are widely advertised and have proven to be popular. Over 70 Corvallis-area citizens attended the spring 2015 tour held on May 28th. Attendees visited two sites. The first showcased the different aged forest stands present in the Corvallis Forest. Here, attendees got to see the most recent timber harvest in a middle-aged stand and walk through a neighboring stand with old growth trees. The second site highlighted the Watershed Ed program, discussed below. Attendees participated in shortened versions of the activities offered to campers. Responses from attendees who were surveyed were very positive and indicated that the watershed is being managed in a manner consistent with the expectations of the public. Said one participant, “I’m so impressed by the organization of this event. What a service to the community!”

Watershed Ed- The City, in partnership with Marys River Watershed Council (MRWC), received an \$1,100 Marys Peak Stewardship Group outreach grant to increase the understanding of and appreciation for functioning watersheds and healthy aquatic habitats among children ages 8-13. The City's Parks and Recreation Department holds a day camp for children of these ages every summer at Rock Creek Camp, adjacent to the City watershed. City staff in both the Parks and Recreation Department and the Public Works Department, along with MRWC staff, worked together to bring campers onto the watershed and provide a day of watershed-themed learning activities for them. Campers had the opportunity to:

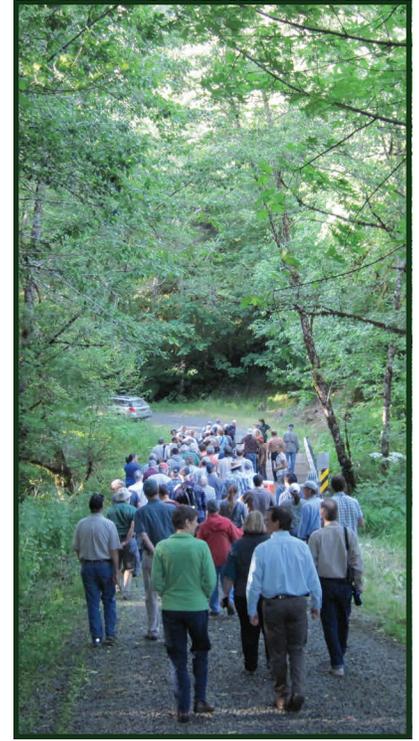
- Build watershed models to demonstrate watershed characteristics and function;
- Collect and identify aquatic macroinvertebrates;
- Wade through a culvert to learn about the life requirements of cutthroat trout and to view completed aquatic habitat restoration projects;
- Tour the Rock Creek Water Treatment Plant.

“Watershed Ed” took place on three days in August during the time when Rock Creek Camp was running. An average of 40 children attended each day.

Public presentations -

- City staff spoke to the Presbyterian Women group at First Presbyterian Church in Corvallis, providing an overview of the history, function and activities taking place on the Corvallis Forest and the Rock Creek watershed.
- City staff also participated as an interpreter for a field trip to Marys Peak for 8th graders from Cheldelin Middle School. Students learned about the dynamics and history of the Rock Creek watershed, and discussed potential impacts to their drinking water.
- City and Forest Service staff spoke about timber harvesting on Marys Peak at a public forum sponsored by the Marys Peak Alliance.

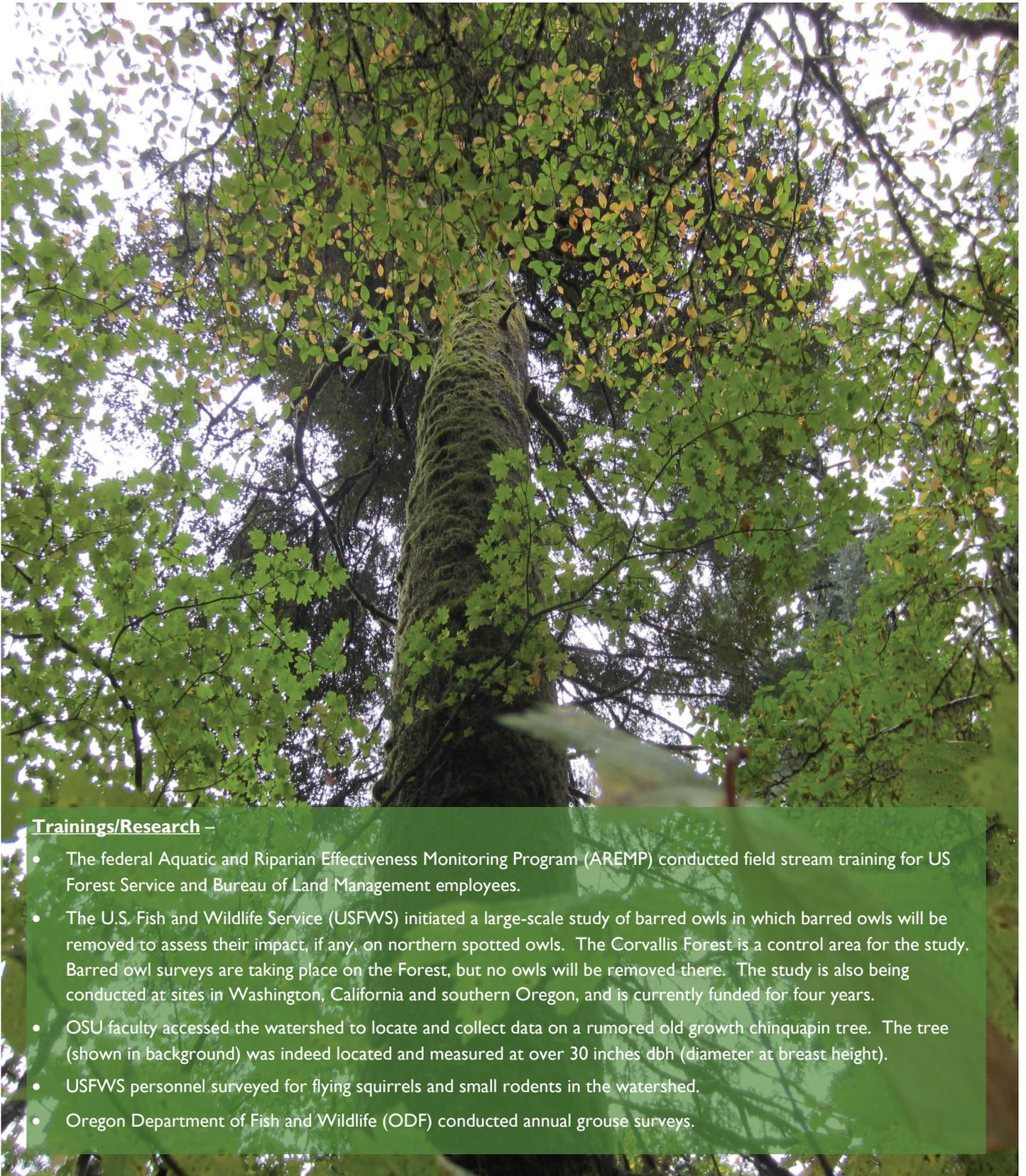
Pictures from the public tour:



Clockwise from top left: Tour participants gather at the edge of this year's harvest as consulting forester, Mark Miller, explains the management plan for a younger stand across the road; WMAB member, Sheryl Stuart, and Utilities Division Manager, Tom Hubbard, accompany the crowd to Old Trail Bridge; Middle school students assist Marys River Watershed Council staff in demonstrating the creation of watershed models; City Councilor, Joel Hirsch, looks on as tour participants explore a culvert placed to improve fish passage on Middle Fork.



Education and Public Use, cont'd



Trainings/Research –

- The federal Aquatic and Riparian Effectiveness Monitoring Program (AREMP) conducted field stream training for US Forest Service and Bureau of Land Management employees.
- The U.S. Fish and Wildlife Service (USFWS) initiated a large-scale study of barred owls in which barred owls will be removed to assess their impact, if any, on northern spotted owls. The Corvallis Forest is a control area for the study. Barred owl surveys are taking place on the Forest, but no owls will be removed there. The study is also being conducted at sites in Washington, California and southern Oregon, and is currently funded for four years.
- OSU faculty accessed the watershed to locate and collect data on a rumored old growth chinquapin tree. The tree (shown in background) was indeed located and measured at over 30 inches dbh (diameter at breast height).
- USFWS personnel surveyed for flying squirrels and small rodents in the watershed.
- Oregon Department of Fish and Wildlife (ODF) conducted annual grouse surveys.

Education and Public Use, cont'd

Educational tours –

- The Marys Peak Stewardship Group took a field trip to the City watershed and adjoining Siuslaw National Forest. The group visited a stewardship harvest and sale on the national forest. On the City property, the group, which had funded Watershed Ed, visited the site where that program took place and were given some demonstrations of the activities in which the campers got to participate.
- Trout Mountain Forestry had an annual audit to maintain its Forest Stewardship Council (FSC) certification, which then applies to timber harvested on the Corvallis Forest. The audit included a tour of recent harvest operations on the watershed.
- The Oregon State University (OSU) Hydrophiles, a club interested in a variety of water resource issues, toured the watershed with Watershed Specialist, Jennifer Ward.
- Linn-Benton Community College (LBCC) created a Water Resources class which toured the watershed and will be performing studies there.
- Two OSU silviculture classes visited various forest stands on the Corvallis Forest, hosted by Trout Mountain Forestry staff.

City watershed program specialist, Jennifer Ward, joins members of the OSU Hydrophiles Club at the South Fork water intake.



Internet Outreach – With the help of Trout Mountain Forestry, the Corvallis Forest will be part of STANDS (Silvicultural Treatment Alternatives Northwest Discussion Site), a website which highlights alternative forestry practices. The site has examples of forest stands that are being managed in unconventional or non-traditional ways, and includes aerial photos and maps of the stands with links to information on management activities.

Press coverage – Stories about the Corvallis Forest were published in the *Corvallis Gazette-Times*, *The City* newsletter, Marys River Watershed Council newsletter, and on the City of Corvallis website. A radio segment on the prescribed burn at Old Peak Meadow was broadcast on Oregon Public Broadcasting.

Economic Context

Extreme weather across the county and global economic factors frustrated predictions of a steady growth in lumber demand, resulting instead in a year of extreme volatility in local log markets. The strong dollar and a slowdown in the Chinese economy had local repercussions, as exports shrunk and more timber was diverted to local markets. The winter drought enabled “full-tilt” logging while the East Coast’s record snows slowed lumber shipments east, leaving mills with no room for more logs. Contrary to normal patterns, prices then crashed in February, but rose through the summer as fears of a “crisis” fire season emerged. Fortunately, the FY 14-15 harvest on the Corvallis Forest started early and most logs were delivered before prices dropped.

Weak lumber markets, driven by high supply and “cheap” lumber imports from Canada and Europe are a reminder that timber is indeed a global commodity. The outlook for the Corvallis Forest in 2016 is for a return to a more “normal” seasonal log price cycle.

Winter harvesting is scheduled again for this year, for which strong log prices are expected.

Weather and Climate



In another year when “unusual” weather seemed to be norm, California’s drought spread northward this year, bringing an Oregon winter that broke records for high temperatures, low rainfall, and a mountain snowpack only 10-25% of normal. Going in to the summer of 2015, flows for many local streams and rivers were among the lowest ever recorded increasing the likelihood of another record-breaking year for wildfires. Although rain and snow were scarce, a November storm coated the Forest in a thick layer of ice, gracing the branches of some trees, completely breaking the branches of others.

A predicted strong El Niño event for the fall and winter of FY 15-16 will continue warmer and drier than average weather. Only time will tell whether the Northwest’s drier weather is simply an extended aberration or a preview of the “new normal.”

While destructive in some areas, a November ice storm lent glistening beauty to many scenes on the Corvallis Forest.

Activities Planned for 2015-2016

The following projects are planned for fiscal year 2015-2016 (July 1, 2015 - June 30, 2016):

Timber Harvest

For FY 2015-16, a winter cable thinning harvest will occur on approximately 40 acres of 43-year old plantations in two units. Goals for this harvest are to thin overly dense stands to increase growth, improve timber quality, and stimulate understory development. An advanced root rot infestation occurs over about 10 acres, where harvesting will salvage diseased and dying trees, and contain the infection by replanting with resistant cedar and alder. The thinning is expected to yield about 500 mbf.

Resource Protection and Maintenance

In 2011, the City received a USFS Stewardship grant to fund a control effort that greatly reduced invasive weeds that were threatening native plants on the property. A number of small populations of false-brome have reappeared: regrowth from new germinants following treatment in 2012.

In 2012, another Stewardship grant funded the reestablishment of conifers in a designated Riparian Reserve area of Rock Creek. These plantings are now being threatened by surrounding weeds and more rapidly growing understory species.

Early in 2015, the City received a third Stewardship grant which will address both the invasive and riparian weeds. In summer 2015, the City will conduct a watershed-wide herbicide treatment of roads, water lines, and previously treated populations for further weed control. In fall 2015, the riparian plantings will be maintained by manual brush cutting, targeted herbicide application, maintenance of seedling protectors, and supplemental planting of conifer seedlings, as needed.



Another winter harvest is planned for the Corvallis Forest.

Contractors

The following contractors were retained in FY14-15 to assist staff in implementing the CFSP:

- **Trout Mountain Forestry** was the lead contractor to the City for forestry services, including resource inventory, project planning, permitting, bid preparation and solicitation, contracting, and supervision of projects. They assisted staff with WMAB meetings, public tours, annual plan development, and grant writing. Special thanks to consulting forester, Mark Miller, who assisted with the preparation of this report.
- **Bio-Surveys, LLC** was subcontracted through Marys River Watershed Council to conduct cutthroat trout surveys.
- **Timber Harvesting, Inc.** conducted the FY 14-15 timber harvest.
- **Turnstone Environmental Consultants, Inc.** was the subcontractor for marbled murrelet surveying.

Partner Institutions

The work of implementing the CFSP to date would not be possible without the assistance and expertise of a large number of partner groups and institutions, including:

- **Watershed Management Advisory Board**
- **Benton County**
- **Institute for Applied Ecology**
- **Linn-Benton Community College**
- **Marys Peak Alliance**
- **Marys Peak Stewardship Group**
- **Marys River Watershed Council**
- **Native Plant Society, Corvallis Chapter**
- **Oregon Department of Fish and Wildlife**
- **Oregon Department of Forestry**
- **Oregon Hunters Association, Mid-Willamette Chapter**
- **Oregon State University**
- **Oregon Wildlife Institute**
- **United States Bureau of Land Management**
- **United State Fish and Wildlife Service**
- **United States Forest Service**



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Responsibility for the Corvallis Forest rests with the City of Corvallis Public Works Department, directed by Mary Steckel. Tom Hubbard, Utilities Division Manager, oversees watershed management and conservation programs for the City. Jennifer Ward, Watershed Program Specialist, functions as the City's watershed liaison, coordinating with the WMAB, project partners and consultants to implement the Corvallis Forest Stewardship Plan.

Conclusion

Since the CSFP was adopted in 2006, restoration and habitat enhancement projects have occurred on over 400 acres of forest, and stream improvements have increased fish access and habitat on more than 8 miles of streams. Invasive weed control and road maintenance have taken place throughout the forest. Funds from timber thinning harvests have allowed the City to leverage grant and cost-share funds totaling more than \$900,000.

More detailed information on the vision, guiding principles, desired future condition, resource policies and recommended actions can be found in the Corvallis Forest Stewardship Plan at <http://www.corvallisoregon.gov/index.aspx?page=126>.



*Oregon iris, one of many spring beauties on the Corvallis Forest.
 (Photo copyright 2015 Joe Cone.)*