
5. Management Opportunities

This chapter describes management opportunities on Corvallis Forest, with examples of management activities completed between 2007 and 2012. For a complete summary of management accomplishments see Forest Activities Reports, available at <http://www.corvallisoregon.gov/index.aspx?page=143>. For more information on currently planned activities, please visit the Corvallis Forest website <http://www.corvallisoregon.gov/index.aspx?page=126>.

Given the Forest Age and Structure policy to protect older forest stands and old forest legacies within younger stands, while providing a variety of different ages and types of forest and habitat conditions:

- A wide range of tree ages, and thus diverse habitat structure, can be maintained and expanded:
 - *Thin young and middle-aged stands to variable densities.* From 2007-2013, 235 acres were treated. Additional areas need treatment.
 - *Create forest openings to establish new seedlings.* Harvests since 2008 have included gap creation and replanting. This practice should continue.
 - *Conduct trial thinning in middle aged and old stands.* Harvests since 2008 have included 130 acres for middle age stand enhancement. Trial thinning in old stands should be considered.
- Understory development is lacking or absent in many areas. Opportunities include:
 - *Plant a variety of tree species when reforesting after harvest*
 - *Plant shrub species in areas where understory shrubs are lacking*
 - *Use best practices for road and skid trail location to protect understory plants during harvesting*
- “Legacy” trees, some several centuries old, can be maintained, even in stands experiencing logging activities. Opportunities include:
 - *Mark legacy trees for special protection during logging*
 - *Thin younger trees that are competing with older legacy trees*
- A wide range of tree species can be maintained and expanded:
 - *Create small gap openings for “early seral” habitat*
 - *Use a variety of species in new plantings, including underrepresented species such as western redcedar and western hemlock*

Given the Reserve Area policy to establish Reserve Areas to protect streams and water quality, wildlife and other areas of unique habitat or ecological values:

- Periodic re-evaluation may identify other areas to add to reserve status
- Young planted stands within reserve areas can be actively managed to rapidly achieve desired future conditions:
 - *Thin stands to variable density to increase diversity and wind-firmness.* Portions of 2008 and 2011 treated stands in reserve areas. Additional appropriate areas need treatment.
 - *Create snags and woody debris.* A 2010 snag creation project included reserve areas where snags were lacking. Additional treatments may be needed.

Given the Aquatic Habitat policy to maintain and restore high quality aquatic and riparian habitat:

- Water quality and aquatic systems can be safeguarded by proper road maintenance. Examples of management actions taken to this end include:
 - *Utilizing “best practices” for timber harvesting and road maintenance to protect against erosion and sedimentation.*
 - *Providing enhanced protection to riparian areas.* Designated stream buffers exceed regulatory minimum standards.
- Water quality and quantity information can be enhanced by monitoring stream flows and water quality conditions below intake structures. Examples of management actions taken to this end include:
 - *Monitoring stream flows and temperatures.* Water levels at intakes and the reservoir are monitored regularly. Since 2009, water temperature of Rock Creek has been monitored annually to develop baseline data and identify impacts.
- Water System management procedures can be regularly reviewed, looking for opportunities to increase downstream water quality and quantity. Examples of management actions taken to this end include:
 - *Maintaining back-wash holding ponds and dredging spoil sites to be weed free.* Invasive weeds were controlled 2009-11 using integrated pest management strategies. Future treatments may be needed.
 - *Changing Water System management protocol to improve water quality and quantity.* Since 2009, water temperature monitoring of Rock Creek has helped understand and minimize summer water temperature impacts. Monitoring should continue.

Given the Wildlife Habitat policy to protect unique habitats and, where possible, to diversify wildlife habitats, promote connectivity between habitats, and increase biological diversity on the ownership:

- A rich array of native biodiversity can be maintained and expanded. Examples include:
 - *Thin dense, homogeneous young stands to diversify structure.* 115 acres of young stands have been thinned to variable densities to enhance diversity and to increase tree vigor; additional stands need treatment.
 - *Thin dense, homogeneous middle-aged stands to diversify structure.* 130 acres of middle-aged stands have been similarly thinned; additional areas need treatment.
- Snag and woody debris levels can be increased. Examples include:
 - *Creating snags.* A 2009-2011 grant-funded project created 680 snags by topping trees at various locations across the forest. A variety of snag types were created, as well as treatment to create cavities, bat roosting “flanges,” and spotted owl “feeding sites,” while protecting and enhancing older trees and forest structure; snags may be lacking in additional areas.
 - *Creating downed woody habitat in conjunction with harvest operations.* Cull logs and some merchantable tree stems are left on the forest floor after harvesting in areas with little or no downed woody habitat.
 - *Leaving brush piles.* Dispersing or piling slash near landings (rather than burning) can provide small mammal, amphibian and reptile habitat.
- Hardwood tree and shrub health and diversity can be increased. Examples include:
 - *Reducing overstory tree density provides more light for understory plants.*
 - *Reducing overall conifer cover in areas with legacy Oregon white oak trees.* In 2012-2013 harvest operations opened up several legacy oaks.
- Meadow and grassland habitat can be expanded and enhanced:
 - *Promoting areas of grassland habitat by removing encroaching trees.* In 2010-11 a historic meadow along Old Peak Road was expanded by removing encroaching trees, reseeding native prairie plants, and adding shrubs at the forest edge; an area of reservoir dredge spoils was restored to meadow habitat. Maintenance of grassland areas will be needed.
- Maturing forests can provide good habitat for many old-forest dependent species:
 - *Thinning allows stands to remain vigorous and wind-firm, and to grow to large size rapidly.* Since 2007 thinning has occurred on 235 acres; additional areas require treatment.
 - *Surveying for spotted owls, bald eagles, and marbled murrelet allows forest managers to monitor populations.* Following species management guidelines protects and enhances habitat.

Given the Water Quality policy to protect and where possible enhance water quality and health of the aquatic environment, while seeking to minimize the adverse effects of necessary water withdrawals:

- Reserve areas can be designated or expanded that protect sensitive locations and slide-prone areas
- Monitoring programs should include the aquatic environment
 - *Continue to monitor stream flows and temperatures below water intakes; research minimum flow criteria for native fish*
 - *Use results of the stream monitoring program to inform and improve stewardship activities within the watershed*
- Riparian area can be managed to grow future large woody habitat and to promote stream shade
- Maintain high-quality road surfaces to reduce sediment delivery to streams

Given the Native Vegetation & Invasive Species policy to promote native plant communities, and actively monitor, control and reduce invasive plant populations:

- “Best management practices” for Integrated Vegetation and Pest Management can be consistently applied across the ownership
- Plant communities can be kept stable and healthy by regular monitoring for invasive weeds
- The presence of invasive weeds on the ownership can be reduced by active control of weed populations and removal of new threats:
 - *Continue weed control protocols for all forest management operations, including pre-operation survey and treatment, and post-op monitoring*

Given the Roads policy to reduce road impacts on water quality, and minimize new road construction:

- Road system infrastructure can be preserved by regular maintenance
 - *Continue to improve the road system by replacing culverts, rock surfacing and grading as needed*
 - *Continue cooperative road maintenance with Siuslaw National Forest*
- Road impacts on water quality can be managed and reduced
 - *Maintain road surfaces, ditches and culverts during and after operations*
 - *Utilize small scale, environmentally sensitive logging techniques*
 - *Construct temporary roads as needed, and retire roads after use*

Given the Forest Chemicals policy to minimize the use of chemical herbicides, pesticides, and fertilizer:

- Invasive weeds are not widely established across the property, and have been reduced through active, effective early control
 - *Continue to use Integrated Vegetation and Pest Management Control practices to control invasive weeds*
- Forest structure and function can be promoted through non-chemical means
 - *Control forest pests using non-chemical methods* such as promoting mixed-age multi-species stand composition, thinning to promote vigor and diversity, and enhancing wildlife habitat.

Given the Public Access policy to prohibit general access to the Corvallis Forest, allow controlled educational, research, special permitted usage:

- Unauthorized access can be controlled by gating, signage, and patrols by water plant staff.
- Public awareness of and support for the management program can be expanded by providing public tours and group visitation opportunities to the Corvallis Forest
 - *Conduct an annual public tour to showcase recent practices, present planned future actions, and gauge public support for management*
 - *Continue to allow educational and research access by special permit; expand outreach efforts*

Given the Neighbors & Allied Organizations policy to cooperate with neighboring landowners and allied organizations to ensure quality water, protect wildlife and stream habitats, and to achieve joint objectives and projects:

- Close proximity to the City of Corvallis, Philomath, OSU, and public and private schools allows the Corvallis Forest to be used for outreach, tours, and research
 - *Continue annual public tours; invite neighbors and interested groups*
 - *Develop an expanded program of outreach to local schools and groups; seek program funding and partners*
- Habitat connectivity can be optimized by coordinating management activities with adjacent owners
 - *Continue to confer with Siuslaw National Forest and other neighbors when planning restoration activities*
- Funds available for restoration can be leveraged by participating in joint restoration projects

- *Continue to participate in the Marys Peak Stewardship Group.* The City of Corvallis has participated since MPSG inception, and has received nearly \$100,000 in grant funding for restoration projects
- A wide variety of restoration projects and restoration prescriptions have been accomplished since CFSP adoption, providing opportunities for sharing our methods and results
 - *Continue to offer tours to interested groups*
 - *Continue reporting on forest activities;* consider wider sharing of methods, results and findings through expanded web presence and other venues
- Engaging education and research partners can leverage monitoring funds, help answer management questions, and inform management direction
 - *Consider a cooperative research program; seek program partners and funding*

Given the Fire policy to protect the Corvallis Forest from wildfire and to manage forest stands to reduce fire risk:

- Silvicultural treatments can be used to reduce fire risks
 - *Continue to reduce fire risks in stand treatments*
- Agency support is available to increase fire preparedness
 - *Continue to cooperate with Oregon Department of Forestry on Fire Plans*
 - *Continue to check that contractors have adequate fire equipment*

Given the Planning, Monitoring, & Public Outreach policy to implement the Corvallis Forest Stewardship Plan, monitor forest management to meet Plan goals and objectives, and ensure transparency by communicating with Corvallis citizens and leaders:

- The Corvallis Forest Stewardship Plan provides a thorough policy framework to guide management direction and decision-making
 - *Maintain a resource inventory.* The 2008-09 comprehensive forest resources inventory updated forest vegetation typing, timber cruise information, and forest biodiversity data
 - *Update forest resources inventory before end of 2013-2018 planning period,* including stand-level timber conditions, understory vegetation, invasive species, and growth and yield modeling
 - *Update management recommendations as needed*
- Property baseline data has been collected on streams, fish populations, wildlife, vegetation, timber condition, and other forest resources, enabling analyses of the impacts of management actions on resource conditions

- *Conduct periodic surveys for Marbled murrelets, Northern spotted owl, and other ESA-Listed species*
- *Engage research partners to answer questions about effects of management and efficacy of management actions.*
- A professional forest manager supervises all aspects of forestry operations, expanding staff resources
 - *Continue to produce and archive maps, plans, and reports of all major management activities*
- Technical experts from various agencies and natural resources fields have been consulted and have provided support in planning field treatments, providing an expanded base of knowledge on the property and easing regulatory processes
 - *Continue ongoing technical peer field review of important management decisions*
- The CFSP contains a Monitoring Plan to gauge how well management actions are meeting Plan vision and guiding principles, policies and guidelines, and desired future conditions
 - *Continue to compile and disseminate an annual Forest Activities Report*
 - *Continue annual stream water quality monitoring*
 - *Refine the monitoring program, seek additional partners. Continue to partner with agencies and local organizations to provide technical expertise, project support, and monitoring assistance*
 - *Consider engaging community volunteers to assist with monitoring*
 - *Develop a restoration and management plan for rare plant populations and special habitats such as prairie, savanna and oak woodland*
- High level public interest in the Corvallis watershed, close proximity to Corvallis, OSU, and other schools, and the wide variety of forest types, management accomplishments, and planned operations offer good opportunities for outreach, education, and research:
 - *Continue to conduct annual public tours to showcase recent practices, present planned future actions, and gauge public support for management*
 - *Broaden target populations of outreach efforts by engaging more students, youth groups, and allied organizations; partner with others as opportunities arise.*
 - *Work with OSU to take advantage of research opportunities; develop research partnerships to benefit management of the Corvallis Forest*

6. Monitoring

This section discusses monitoring needed to gauge the effectiveness of management activities and the types of plans and reports needed to guide effective management and