NATURAL RESOURCES

State Trust Lands Habitat Conservation Plan 2012 Annual Report

For Fiscal Year 2012
Published April 2013

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Cover photograph

Inaugural field season for riparian status and trends monitoring in the Olympic Experimental State Forest under the State Trust Lands Habitat Conservation Plan

DNR monitoring technicians consult a map to locate a permanent monitoring site on the Olympic Experimental State Forest (OESF). Their work is part of a new effort that characterizes the status of riparian and aquatic conditions in multiple watersheds across the OESF and studies the short- and long-term trends as a consequence of natural disturbance and riparian management. The project allows the department to test assumptions about the recovery of riparian forest conditions and in-stream aquatic habitats and to evaluate projections of riparian habitat over time.

The information from this project will provide inferences about management effects on habitat as a basis for adaptive management. The monitoring will supply information useful for future effectiveness and validation monitoring.

The study plan was developed cooperatively with others in the science community and was subjected to independent peer review. This project is implemented in a partnership with the Forest Service Pacific Northwest Research Station.

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Introduction

Background on the State Trust Lands HCP

Each year, the Washington State Department of Natural Resources (DNR) produces a State Trust Lands Habitat Conservation Plan (HCP) Annual Report based on commitments outlined with the HCP Implementation Agreement. The intended audience is the US Fish and Wildlife Service and the National Oceanic and Atmospheric Administration (commonly known as the 'Federal Services' or 'the Services'), and other interested parties.

The HCP Annual Report is composed of programmatic completed management activities on DNR-managed lands covered under the HCP, monitoring and research efforts, conservation strategy achievements and updates, and other related programs. Most information being reported is based on fiscal year (FY) 2012; however, some information reported is based on calendar year or another time period depending on the system used and the specific information being reported. In addition, the HCP Annual Report provides a record of DNR-managed activities covered under the HCP, allowing us to document trends and the factors influencing them.

For more information on DNR's HCP, please visit DNR's **State Trust Lands Habitat Conservation Plan webpage.**

Highlights for 2012

- DNR is progressing on a slow recovery from the 2008 and 2009 recession, which resulted in funding challenges over the last three years. Department-wide, staffing and project funding have not recovered to pre-fiscal crisis levels, nor do we anticipate this to happen in the near future. This of course continues to influence our reporting, as in some cases there is no one to produce the data that we were previously able to report, and the depth of information that was previously supplied is no longer readily available. However, we are adjusting to the new state of affairs and making progress on developing a leaner, more efficient approach to reporting DNR's State Trust Lands HCP commitments.

- We are continuing the same reporting structure that was introduced last year, with a summary of background information for each subject area provided via links in each section. The use of links is intended to streamline access to relevant information.

- An HCP Documentation Section has been added to the report which includes links to HCP consultations, non-compliance activities, and concurrence letters for fiscal year 2012.

- A revision to the Marbled Murrelet Interim Conservation Strategy for the Columbia and South Coast Planning Units was approved by the US Fish & Wildlife Service.

- A Comprehensive Review Section has been added to the report to begin fulfilling the requirement outlined within the HCP Implementation Agreement.

- Field monitoring for the HCP Implementation Monitoring Program has resumed.

- Data reporting on leasing and permitting regarding Non-Timber Management Activities has been improved.

- Two programs (Landscape Ecology and Wildlife Habitat Ecology) that were previously placed on a hiatus within DNR's HCP and Scientific Consultation Section are now are being resurrected, and vacant positions have been filled. Looking forward, over the next year:

    - DNR will begin a collaborative data modeling project of the Washington Coast to examine trends in different social, ecological, and economic values under both a changing climate and different management scenarios. The project (which is funded by the American Reinvestment and Recovery Act of 2009 through the US Forest Service Pacific Northwest Research Station) will span all major forestland ownerships and is designed to actively begin to determine if current management strategies will be sufficient in meeting different objectives given possible future climate trends.

    - DNR also plans to initiate a review of the Eastern Washington Northern Spotted Owl Conservation Strategy and forest health conditions to determine the best way to provide sustainable, long-term habitat for the owl and maintain healthy productive forests and revenue opportunities for the trusts.

- For fiscal year 2013, DNR has funded and begun implementation of Riparian Status and Trends Monitoring in the Olympic Experimental State Forest (OESF). This long-term project will track changes in aquatic and riparian habitat conditions in the OESF and unmanaged reference basins in the Olympic National Park.

HCP Documentation

In implementing the State Trust Lands Habitat Conservation Plan, DNR often consults with the Federal Services on specific management issues. DNR and the Services work together to resolve challenges at various scales or levels—such as a change to the management approach to be applied to a specific landscape, concurrence on modification of a conservation strategy, or a consultation on the specific activities of a particular timber sale. Such consultations can take the form of implementation consultations between DNR and the Services or between DNR regions and DNR's HCP and Scientific Consultation Section. The purpose of such consultations is generally to address operational challenges due to unforeseen circumstances arising in the field. This may include designing appropriate mitigation. Consultation and reporting may also be needed between DNR and the Services when, on occasion, an activity occurs for which there is an inadvertent non-compliance with an HCP Strategy. The final documents for non-compliance activities and copies of implementation consultations for fiscal year 2012 can be read **here**.

Comprehensive Review of Selected Elements of the State Trust Lands HCP

The HCP Implementation Agreement requires a ten-year Comprehensive Review of the HCP to identify any amendments that might more effectively and economically mitigate any incidental take. DNR does this by evaluating management activities carried out under the State Trust Lands HCP. With loss of staff and funding during the economic recession, we did not have the ability

to produce this review in 2008 (ten years). DNR and the Services have agreed to conduct a Comprehensive Review by subject over the next few years, as funding and staffing allow. This year we have conducted a Comprehensive Review of Road Management Activities and will explore including a Comprehensive Review of other HCP management activities and strategies in subsequent years.

Road Management Activities

Roads have the potential to disturb wildlife or increase slope failure and undesirable sediment delivery to surface water. Under the HCP and current Forest Practices rules, DNR has refined and improved our network of forest roads. Over the years, through inventory of the road system and diligent management practices, we have progressed in creating a transportation system that reduces negative effects to the environment while meeting the need for access to state trust lands.

HCP Forest Roads Strategy

Since 1997, DNR has actively worked to ensure compliance with the State Trust Lands HCP forest roads commitments. We have emphasized the need to minimize permanent roads where practical, place new roads in stable locations, and minimize the potential for negative impacts on sensitive resources such as water quality. Our commitments under the HCP—for better planning, design considerations, construction techniques, road use management, maintenance and abandonment—are taken seriously by DNR. To incorporate these practices as standard procedure for road activities, the agency's Forest Roads Section has written a Forest Roads Guidebook that includes the commitments outlined within the HCP. These guidelines are available to every forester and engineer and are expected to be followed for all road activities.

Forest and Fish

In addition to the State Trust Lands HCP commitment for forest roads, DNR also has obligations under the state's Forest and Fish Legislation of 1999. Under this law, large forest landowners must inventory and assess their forest roads by 2006 and create a plan for upgrading these roads to the current Forest Practice Rules.

These Road Maintenance and Abandonment Plans, or RMAPs as they are commonly called, guide the road improvements based upon a "worst first" principle. RMAPs must pay particular attention to[1]:

1. Roads with fish passage barriers
2. Roads that deliver sediment to typed water
3. Roads with evidence of existing or potential instability that could adversely affect public resources
4. Roads or ditchlines that intercept ground water
5. Roads or ditches that deliver surface water to any typed waters

These issues are further ranked based upon the sensitivity of the area that the roads may affect. Work on such roads in the following areas is presumed to be of the highest priority[2]:

1. Basins containing, or road systems potentially affecting, waters that either contain a listed threatened or endangered fish species under the federal or state law or a water body listed on the current 303(d) water quality impaired list for road related issues

[1] WAC 222-24-051
[2] Ibid

2. Basins containing, or road systems potentially affecting, sensitive geology/soils areas with a history of slope failures
3. Road systems or basins where other restoration projects are in progress or may be planned coincident to the implementation of the proposed road plan
4. Road systems or basins likely to have the highest use in connection with future forest practices

The Forest and Fish legislation also requires that all of the RMAP road improvements be completed by October 2016. Due to the economic downturn, forest landowners may request a 5-year extension to this deadline, but DNR has fully committed to meeting the October 2016 date.

Road Inventory

DNR began to inventory and assess roads across forested state trust lands beginning in 1999. In that year, we estimated that we managed about 11,000 miles of road. During the inventory process, we found that our initial road mile estimates were low in some DNR regions. Between 2000 and 2005, the inventory showed that DNR actually managed about 12,000 miles of forest roads. This information has helped DNR improve planning for road upgrades and road closures based on strategic management decisions coupled with the desire to reduce the potential for public resource damage. Between 2000 and 2011, DNR also underwent numerous land transactions. These land exchanges and purchases of replacement properties for the trusts added an additional 1,000 miles of road to our forest road inventory bringing the current total to about 13,000 miles. Figure 1 shows how inventory and land transactions have affected the total of road miles DNR manages.

Figure 1. Total Number of Inventoried Roads

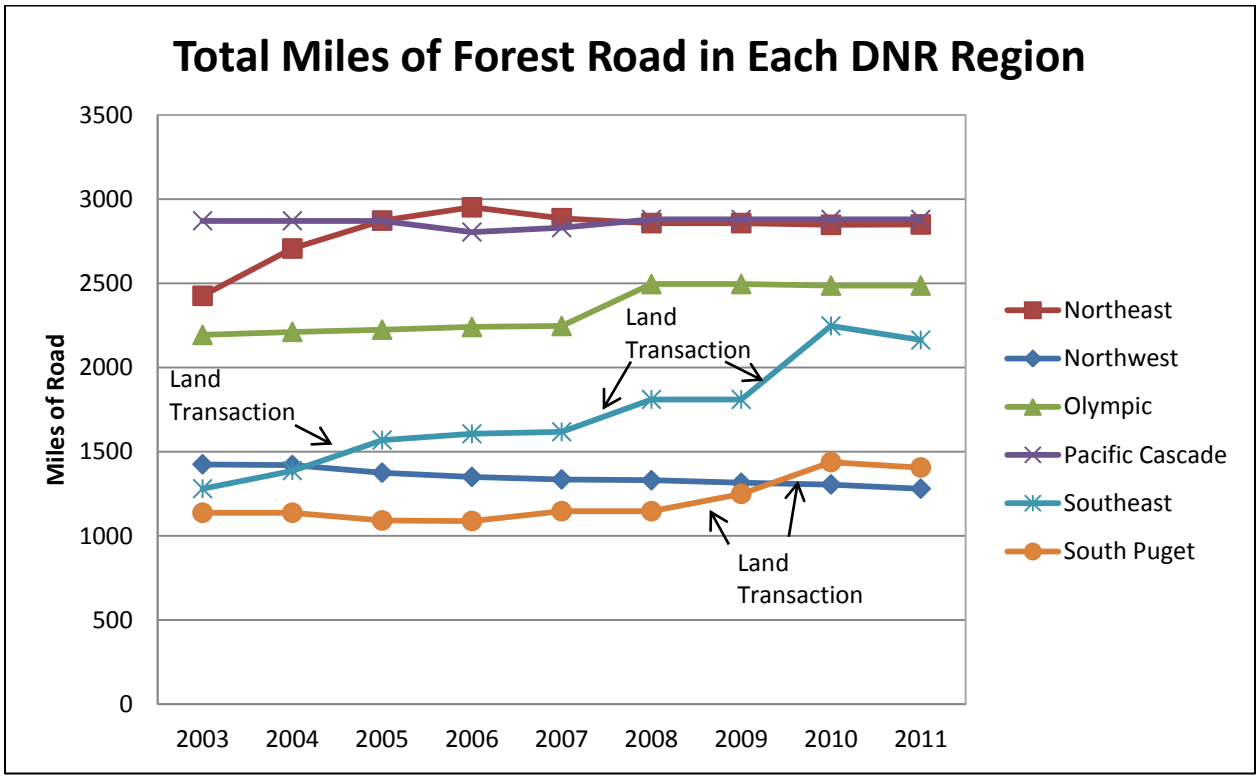


Figure 1 represents the total number of inventoried roads in each of the DNR Regions, by year, and increases in Road Inventory due to Land Transactions. Prior to 2003, complete and accurate road inventory was not available, thus this table shows annual inventory beginning in 2003.

Even though our inventory of managed forest roads has increased over the years, DNR has been fully committed to reducing our road density, where operationally feasible, as outlined in the HCP. As roads have been constructed for management and timber harvest access, we have also closed many miles of roads through abandonment and decommissioning and limited road construction activities to reduce road density, where possible. Figure 2 indicates that each year DNR has closed an equal or greater number of road miles than were constructed.

Figure 2. Road Construction Activities

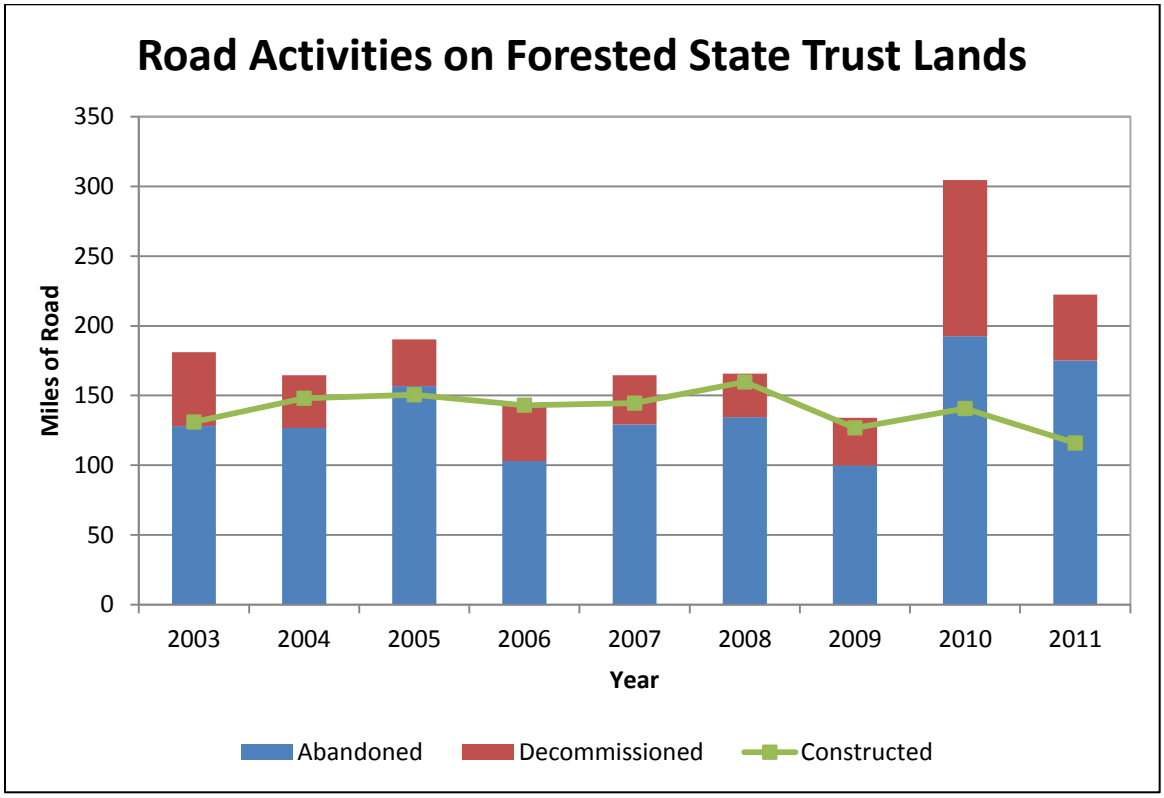


Figure 2 represents road construction activities compared to closure activities on DNR-managed forested trust lands, by year. Prior to 2003, complete and accurate data in road construction activities was not available, thus this table shows activities beginning in 2003.

Beginning in 2007, the agency's Forest Roads Section began creating a Proprietary Transportation Layer to provide a more accurate method of tracking and managing our road inventory. The project was completed in 2011. We now have access to an up-to-date representation of our forest roads and a method to track road closure, upgrade, and maintenance projects. The location of forest roads and the tracking of projects are updated, at a minimum, on an annual basis.

Road Maintenance and Abandonment Projects

After the initial road inventory was complete, DNR identified about 26,000 Road Maintenance and Abandonment Projects (RMAPs) that were causing or had the potential to cause damage to public resources, such as water, fish, and wildlife. This project list did not include fish passage barriers that were inventoried under a different process than the roads. Fish passage barrier inventory and repairs are discussed below.

Since 2001, DNR has worked to improve roads to the new standards, as required under the Forest and Fish law and the State Trust Lands HCP. Of the 26,000 identified road projects, DNR has competed 22,846 as of the end of 2011, which represents an 88 percent completion rate. These projects include general maintenance to improve drainage and decrease sediment delivery, full

road relocation projects to prevent potential slope failure, and abandonment of stream-adjacent roads to eliminate sediment delivery and improve riparian function.

DNR continues to monitor roads to ensure that any problems are identified. If any problems are found to cause public resource damage, they are included on the RMAP project list and scheduled for repair before the RMAP deadline in 2016.

Best Management Practices

Through the RMAP process, DNR has increased efforts to reduce sediment delivery to surface waters. As roads are upgraded to the current Forest Practices Standards, best management practices have been used. DNR employs these best management practices to improve road construction and maintenance, to improve the stability of the road, and to disconnect the road drainage from typed waters as defined under the Forest Practices Rules, WAC 222-16-030.

As roads are constructed, DNR designs them to avoid potentially unstable slopes and reduce or eliminate road construction adjacent to streams or wetlands. Placing the road in the correct location can help avoid delivering sediment to surface water even if the road itself creates sediment. In many cases, as roads are constructed, adjacent exposed soils are covered with grass seed and straw, or other substances, to help reduce erosion and delivery potential to typed water.

As we focus on disconnecting potential sediment delivery generated from roads from streams and wetlands, we use techniques such as constructing the road surface to naturally shed water as quickly as possible. We also add more drainage structures to decrease the energy of the water running in ditches or on the road surface. This helps reduce the amount of sediment carried in the road runoff. Added drainage also helps to move water from springs and seeps across the road as quickly as possible to maintain their natural drainage patterns. As drainage structures are added, we also focus on directing the road runoff onto the forest floor or into sediment traps to filter out sediment before the runoff reaches any surface water.

Fish Passage Barriers

The identification and repair of fish passage barriers has been a priority for DNR and other forest landowners. In 2000, DNR completed an initial inventory of all live-stream crossings on DNR-managed forestlands. Initially, 1,864 barriers to fish passage were identified.

We continually work toward finding and repairing all fish passage barriers on DNR-managed lands. Since 2000, we have discovered and added 428 fish passage barriers to our inventory, or about 36 per year, through identifying mistyped streams, missed culverts, and culverts added through land transactions. As these barriers are removed or repaired, more habitat is open to fish migration, rearing, and spawning.

DNR reduces the number of fish barriers at an average rate of 188 per year through physical removals, replacements, and other methods (protocol surveys to determine fish use, culverts not on DNR-managed land, or culverts not on a forest road). Figure 3 shows the progress of DNR's fish passage barrier removal program. Even though the number of identified or acquired fish passage barriers has increased over this time, the number of barriers remaining on DNR-managed lands has significantly decreased.

Figure 3. Fish Passage Barrier Inventory and Removals

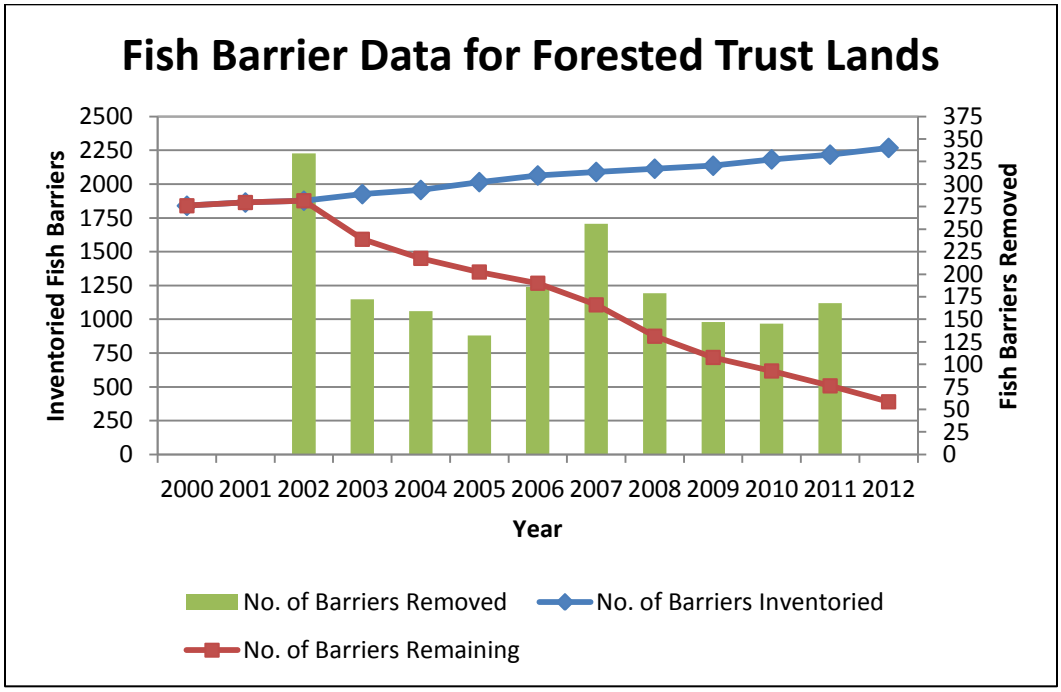


Figure 3 represents DNR's Fish Passage Barrier Inventory and Removals, by year.

Training, Professional Engineers, and Interns

To ensure our forest road engineers have the resources and tools they need to succeed, DNR has strategically implemented trainings that address current or emerging issues. We have conducted sessions on designing and installing fish passage structures, reducing the potential for sediment delivery through the use of best management practices, applying and maintaining rock surfaces (aggregate) to forest roads, using geotextile fabrics, identifying the effects of biomass removals on forest roads, and introducing the use of soil retaining walls reinforced with geotextiles.

One of the agency goals is to "retain and support a diverse and highly skilled workforce". We reinforce the value of having licensed professional engineers by mentoring young engineers as they prepare for the Professional Engineer examination, and we require that critical positions be filled by licensed engineers. One measure of our success is the increased number of licensed engineers that DNR employs.

DNR's Forest Roads Section has supported an engineering internship program for more than two decades. Our program not only provides work experience for college students and skilled help during the busy summer season, but also allows the agency to have an early look at which graduates would be a good fit for DNR. These interns also complete their internships with the knowledge of how DNR operates to implement and support the State Trust Lands HCP and the Forest and Fish law to provide environmental protection while harvesting timber to earn revenue to benefit the trusts.

Conclusion

Through the guidance outlined in the State Trust Lands HCP and Forest Practices Rules, over the last 11 years DNR has used best management practices to control road density, reduce road sediment, and open miles of stream habitat for fish by removing barriers. Looking to the future, we are on track to repair or remove all of the fish passage barriers, and upgrade all of the RMAP

projects on DNR-managed forested state trust lands by October 2016, and we will continue to manage our forest road system to reduce negative effects to the environment.

Program Activities

Silvicultural Activities

Background on Silvicultural Activities

Information and analysis provided in this section is based on FY 2012 activities on DNR's forested state trust lands marked complete within DNR's Planning and Tracking Database as of November 30, 2012. DNR's Planning and Tracking Database is a dynamic system, therefore available data changes on a continual basis.

Timber Harvest

The rights to harvest timber from state trust lands are purchased at public auction held each month. A timber sale contract allows the purchaser to remove timber generally over an 18- to 36 month time period, and the actual completion date falls sometime within that active time frame. Thus, the levels of sold timber sales may stay relatively stable from year to year, however the timber removals and/or levels of completed activities may vary based on the purchaser's choice of when to harvest (and complete) the timber sale.

The overall acreage of all completed timber harvest activities in FY 2012 was roughly 25 percent below FY 2011. Virtually all of the reduction occurred in North Puget, Columbia, and South Coast HCP Planning Units. Overall harvest levels in other planning units varied in relative terms, but there were no other significant changes in absolute terms. It is expected that completed activities for FY 2012 will increase approximately 10 to 20 percent once all activities are marked complete in DNR's Planning and Tracking Database.

Variable Retention Harvest (VRH) levels declined from FY 2011 to FY 2012, with the decline occurring in North Puget and Columbia Planning Units. VRH levels in other planning units remained relatively constant. Of the other harvest types, Variable Density Thinnings (VDTs) increased threefold. This gain was offset by significant reductions in Commercial Thinning and Selective Product Logging together declining by 43 percent during the same period of time.

While completed harvest activity acres declined in FY 2012, as mentioned in last year's report, the combined annual acreage of completed Variable Retention Harvests and all other types of regeneration harvests[1] was higher for the 2009-2011 biennium than for the 2007-2009 biennium. Due to the time lag between regeneration harvests and stand re-establishment activities, these increased harvest removal levels had not yet led to correspondingly higher levels of other silvicultural activities in FY 2011. It was anticipated that there would be significant increases in these stand re-establishment activities in the 2011-2013 Biennium. This proved to be true. As shown in

[1] For the purposes of the Silvicultural Activities report, "regeneration harvests" include variable retention harvests, clear cuts, phased patch regeneration cuts, seed tree intermediate cuts, shelterwood intermediate cuts, temporary retention first cuts, and uneven-aged management (if present). While some uneven-aged management harvests do not lead to regeneration, it is a small enough proportion to not change the overall trend.

the information below, FY 2012 saw historically high levels of site preparation and regeneration activities.

Forest Site Preparation

Forest site preparation acreage was 81 percent greater in FY 2012 than in FY 2011. The FY 2012 increase was primarily due to the above-mentioned high regeneration harvest levels of the previous biennium, and in part due to a recovery in funding for stand-establishment activities. Aerial herbicide, ground herbicide, and ground mechanical treatments all more than doubled from FY 2011 levels. The increase in aerial herbicide applications primarily occurred in Columbia, North Puget, and South Coast Planning Units. The increase in ground herbicide applications was spread across all planning units, while the increase in ground mechanical treatments primarily took place in the Yakima Planning Unit. Overall levels of site preparation are likely to remain near current levels in FY 2013.

Forest Regeneration

Forest regeneration acreage in FY 2012 was one-third higher than in FY 2011. Hand planting accounted for 96 percent of the FY 2012 total forest regeneration acres. These historically high levels of planting were due to the high regeneration harvest levels of the 2009-2011biennium. Due to the FY 2012 decline in completed harvest activities, acres of forest regeneration are expected to decline in FY 2013.

Vegetation Management

Completed vegetation management activities in FY 2012 were about 20 percent lower than in FY 2011. This was a significant rebound from the three previous fiscal years. FY 2012 aerial herbicide treatments increased by 64 percent from FY 2011, while hand cutting treatments increased by 30 percent. During the same period, ground herbicide treatments increased slightly. Overall levels of vegetation management are likely to remain near current levels in FY 2013.

Pre-Commercial Thinning

Due to budget limitations, essentially no pre-commercial thinning (PCT) was completed in fiscal years 2010, 2011, and 2012. However, funding has been restored for this activity for FY 2013. PCT is an essential activity that sets the stand on a developmental trajectory that is more likely to produce habitat in the future and/or increase future commodity production. Whichever the case may be, PCT activities leave options open for the future.

Table 1. Completed Harvest and Silvicultural Activities

by HCP Planning Unit on DNR-Managed Forested State Trust Lands, Fiscal Year 2012

ACTIVITY*	COLUMBIA	KLICKITAT	NORTH PUGET	OESF	SOUTH COAST	SOUTH PUGET	STRAITS	YAKIMA	GRAND TOTAL - ACRES
TIMBER HARVEST									
Commercial thinning	924	347			46				**1,317**
Selective product logging					101		116		**217**
Uneven-aged management						66	82	398	**546**
Variable density thinning	181		205		25	553		407	**1,371**
Variable retention harvest	3,389	25	1,706	839	3,275	748	1,719		**11,701**
TOTAL Timber Harvest	**4,494**	**372**	**1,911**	**839**	**3,447**	**1,367**	**1,917**	**805**	**15,152**
FOREST SITE PREPARATION									
Aerial herbicide	3,267		1,784		3,661	53			**8,765**
Ground herbicide	518	538	394	463	1,404	213	405		**3,935**
Ground mechanical		65					1	599	**665**
TOTAL Forest Site Preparation	**3,785**	**603**	**2,178**	**463**	**5,065**	**266**	**406**	**599**	**13,365**
FOREST REGENERATION									
Hand planting	4,426	512	3,085	1,186	5,382	948	2,141		**17,680**
Natural regeneration								824	**824**
TOTAL Forest Regeneration	**4,426**	**512**	**3,085**	**1,186**	**5,382**	**948**	**2,141**	**824**	**18,504**
VEGETATION MANAGEMENT									
Aerial herbicide	1,119				571				**1,690**
Ground herbicide	576		541	79	206	109	763		**2,274**
Hand cutting	770		3,613	459	877	932	668		**7,319**
TOTAL Vegetation Management	**2,465**	**0**	**4,154**	**538**	**1,654**	**1,041**	**1,431**	**0**	**11,283**
PRE-COMMERCIAL THINNING									
Pre-commercial thinning					57				**57**
TOTAL Pre-Commercial Thinning	**0**	**0**	**0**	**0**	**57**	**0**	**0**	**0**	**57**
OTHER									
Shielding or fencing	42				21				**63**
TOTAL Other	**42**	**0**	**0**	**0**	**21**	**0**	**0**	**0**	**63**

*Data provided is based on FY 2012 completed activities in DNR's Planning and Tracking Database on November 30, 2012. FY 2012 timber harvest activity acres are likely underreported due to the timing of finalizing completed harvest activities within the Planning and Tracking Database.

Non-timber Management Activities

Background on Non-timber Management Activities

Reporting methodology for our non-timber leasing and permitting under the State Trust Lands HCP has changed significantly for 2012, resulting in some dramatic differences in number of leases and acreage reported from past years.

Past reporting has been based on data provided by individuals within DNR divisions and regions who had responsibility for tracking particular lease types. This was never a simple task. Among the challenges of the past were the difficulties of distinguishing trust lands managed under the HCP from those lands not managed under the HCP (due to geographical position, urban designation, or lack of forest cover). In addition, many trust lands have several lessees, and many leases have multiple uses associated, such as orchards and grazing. In the past, DNR has double- or multiple-counted acres that had more than one lessee (as in the case of grazing and Special Forest Products leases and permits, and communications leases), and DNR sometimes has counted uses that would be exempt from the HCP, such as dryland agriculture or urban rentals. This occurred because it was very difficult to parse the data.

This year we have taken a new approach, which, though still not perfect, yields far more accurate information than we have been able to provide previously. This approach comes from an interface between our data management system, NaturE, and GIS and allows us to identify more accurately whether or not an activity occurs on land managed under the HCP, and on which sections the activity occurs. It also allows us to eliminate land use categories from the report that are irrelevant to the HCP and count acres with multiple leases only once, instead of multiple times. For instance, a two-acre communications site on Capitol Peak has 27 leases; we can now report 27 leases and two acres, instead of 54 acres.

In Eastern Washington, we still have inaccuracies that stem from an inability to distinguish forested acres from non-forested acres through NaturE. This is especially true for our grazing leases and results in over-reporting leased acres.

In some cases we are providing less detail than we were able to previously, such as in the case of trust acres involved with our permitted and leased Special Forest Products. We can provide the number of leases and acres with confidence, but we cannot yet provide the specific uses, such as whether the lease is for holiday boughs, florist greens, or edible mushrooms.

Another difference is that while we previously reported the non-timber leasing activities by fiscal year, we now are providing a particular snapshot in time. This is because leases are continually being signed, renewed or terminated, and the numbers may differ slightly month to month. Again, we are able to provide more accurate information in this way. We hope to continue refining our reporting process for future years.

Table 2. Non-Timber Management Activities

Data presented is a snapshot in time as of November 2012, except for data on silvicultural pits.

	NUMBER OF LEASES	ACRES
Special Forest Products		
Special Forest Products Leases	18	48,582
Special Forest Products Sales	12	46,473
Total Special Forest Products	**30**	**95,055**
Silvicultural Pits*		
Active Silvicultural Pits	165	317
Inactive Silvicultural Pits	230	216
Abandoned Silvicultural Pits	55	56
Total Silvicultural Pits	**450**	**589**
Grazing Permits/Leases		
Eastside**	59	171,543
Westside	1	10
Total Grazing Permits/Leases	**60**	**171,553**
Communications Site Leases		
Number Sites	70	110
Number Active Leases	258	
Total Communication Sites Acres	**328**	**110**
Recreation Sites		
DNR Recreation sites	8	32
RCO Recreation sites***	83	1,283
Total Recreation Sites	**91**	**1,315**
Total Rock, Sand & Gravel Sales	**5**	**290**
Total Mining Contracts	**1**	**320**
Total Active Oil & Gas Leases	**15**	**7,692**
Total Special Use Leases	**20**	**1,186**

* Silvicultural Pits are rock, sand, or gravel pits used exclusively for construction of forest roads and timber sale landings. Data is from the last inventory of silvicultural pits, done in 2003. Actual pit numbers are expected to be very similar to those reported, due to a relatively consistent demand for road building materials.

** Most of the Eastside Grazing/Permits/Leases acres are likely non-forested, and therefore not managed under the HCP. At this time we do not have the ability to distinguish forested from non-forested acres.

*** These are recreation sites that are leased using funds from the Washington State Recreation and Conservation Office, (RCO), formerly known as Interagency Committee for Outdoor Recreation.

Recreation Program

Background on Recreation Program

- DNR's **Recreation Program** is in the process of adding additional trailheads and trails for public use at several locations around the state. The new projects will be on trust lands in Reiter Foothills forest in Snohomish County, Yacolt Burn State Forest in Clark County, and Mailbox Peak in King County, and will be designed, constructed, and managed consistent with the commitments of the State Trust Lands HCP. For trust lands in Reiter Foothills forest, DNR received grants to build two trailheads with small parking areas and a total of 35 parking stalls. In addition, 10 miles of motorized vehicle trails will be constructed. Future plans include a 91-car/trailer parking area and some trails for non-motorized use. The Yacolt Burn State Forest received funding for new trailheads and new trails. Construction has started on phase 1 of the Off Road Vehicle (ORV) trail system, which includes construction of single track, All Terrain Vehicle (ATV), and 4x4 trails.

- DNR is finishing the Recreation Plan for the Green/Tahuya State Forest and has started planning efforts in the Snoqualmie and Naneum blocks of state land.

- DNR received a federal grant for construction of a trail and trailhead at Mailbox Peak with 45 parking stalls, a vault toilet, and an information kiosk. Construction has started on the trailhead and trail system.

- DNR staff has started the design work to relocate Tunerville recreation site in Pacific County and the Elbe ORV recreation site in Pierce County.

Natural Areas Program

Background on Natural Areas Program

In FY 2012, the **Natural Areas Program** has protected an additional 4,425 acres of Natural Area Preserves (NAPs) and Natural Resources Conservation Areas (NRCAs), all of which fall within the area covered by the HCP. These protection efforts added natural areas lands to seven existing sites. Among the most significant of these were:

- Over 3,000 acres were transferred to the Morning Star NRCA, protecting mature mid-elevation forest on steep slopes, riparian habitats, and talus fields.

- 918 acres were added to the Klickitat Canyon NRCA, expanding protection of the river canyon, wetlands used by greater sandhill cranes, and several rare plant species.

- Elk River NRCA was expanded by 219 acres including native salt marsh communities, mud flats that provide forage for shorebirds, and adjacent shoreline forests.

Table 3. Natural Areas Covered by the HCP

NATURAL AREA	NAP (NATURAL AREA PRESERVE) NRCA (NATURAL RESOURCES CONSERVATION AREA)	COUNTY	FY 2012 ADDED ACRES	TOTAL CURRENT ACRES
Admiralty Inlet	NAP	ISLAND		33
Bald Hill	NAP	THURSTON		314
Bone River	NAP	PACIFIC		2,565
Camas Meadows	NAP	CHELAN		1,987
Carlisle Bog	NAP	GRAYS HARBOR		310
Cattle Point	NRCA	SAN JUAN		112
Charley Creek	NAP	KING		1,966
Chehalis River Surge Plain	NAP	GRAYS HARBOR		3,019
Clearwater Bogs	NAP	JEFFERSON		504
Clearwater Corridor	NRCA	JEFFERSON		2,323
Columbia Falls	NAP	SKAMANIA		1,194
Cypress Highlands	NAP	SKAGIT		1,072
Cypress Island	NRCA	SKAGIT		4,089
Dabob Bay	NAP/NRCA	JEFFERSON		1,929
Dailey Prairie	NAP	WHATCOM		229
Devils Lake	NRCA	JEFFERSON		80
Elk River	NRCA	GRAYS HARBOR	219	5,413
Ellsworth Creek	NRCA	PACIFIC		557
Goose Island	NAP	GRAYS HARBOR		12
Granite Lakes	NRCA	SKAGIT		603
Gunpowder Island	NAP	PACIFIC		152
Hamma Hamma Balds	NAP	MASON		957
Hat Island	NRCA	SKAGIT		91
Hendrickson Canyon	NRCA	WAHKIAKUM		159
Ink Blot	NAP	MASON		153
Kennedy Creek	NAP	MASON		203
Kings Lake Bog	NAP	KING		309
Kitsap Forest	NAP	KITSAP		572
Klickitat Canyon	NRCA	YAKIMA	918	1,516
Lake Louise	NRCA	WHATCOM		138
Lummi Island	NRCA	WHATCOM		672
Merrill Lake	NRCA	COWLITZ		114
Middle Fork Snoqualmie	NRCA	KING		9,000
Mima Mounds	NAP	THURSTON		636
Monte Cristo	NAP	KLICKITAT		1,151
Morning Star	NRCA	SNOHOMISH	3,097	33,592

Table 3. Natural Areas Covered by the HCP

NATURAL AREA	NAP (NATURAL AREA PRESERVE) NRCA (NATURAL RESOURCES CONSERVATION AREA)	COUNTY	FY 2012 ADDED ACRES	TOTAL CURRENT ACRES
Mount Si	NRCA	KING		12,528
Niawiakum River	NAP	PACIFIC	48	1,044
North Bay	NAP	GRAYS HARBOR		1,098
Oak Patch	NAP	MASON		17
Olivine Bridge	NAP	SKAGIT		148
Point Doughty	NAP	SAN JUAN		57
Rattlesnake Ridge	NRCA	KING		1,771
Rocky Prairie	NAP	THURSTON		35
Sand Island	NAP	GRAYS HARBOR		8
Shipwreck Point	NRCA	CLALLAM		472
Shumocher Creek	NAP	MASON		494
Skagit Bald Eagle	NAP	SKAGIT		1,546
Skookum Inlet	NAP	MASON		143
Snoqualmie Bog	NAP	KING		111
South Nemah	NRCA	PACIFIC		2,440
South Nolan	NRCA	JEFFERSON		213
Stavis	NRCA	KITSAP	94	1,877
Table Mountain	NRCA	SKAMANIA		2,837
Tahoma	NRCA	LEWIS		230
Teal Slough	NRCA	PACIFIC		8
Trout Lake	NAP	KLICKITAT		1,840
Washougal Oaks	NAP/NRCA	CLARK	41	264
West Tiger Mtn	NRCA	KING		3,908
Whitcomb Flats	NAP	GRAYS HARBOR		5
White Salmon Oak	NRCA	KLICKITAT		551
Willapa Divide	NAP	PACIFIC		587
Woodard Bay	NRCA	THURSTON	9	855
TOTALS*			**4,426**	**112,811**

*Table numbers and totals do not correlate due to rounding.

Table 4. Threatened and Endangered Species Found in Natural Areas

Within the Area Covered by the State Trust Lands HCP

	FEDERAL STATUS	NATURAL AREA NAP-Natural Area Preserve NRCA-Natural Resources Conservation Area
Northern spotted owl*	Threatened	Camas Meadows NAP, Granite Lakes NRCA, Skagit Bald Eagle NAP, South Nemah NRCA, Table Mountain NRCA, Teal Slough NRCA, Trout Lake NAP, Morning Star NRCA
Marbled murrelet**	Threatened	Bone River NAP, Clearwater Bogs NAP, Clearwater Corridor NRCA, Elk River NRCA, Niawiakum River NAP, South Nemah NRCA, South Nolan NRCA, Teal Slough NRCA, Willapa Divide NAP, Morning Star NRCA
Bull trout	Threatened	Chehalis River Surge Plain NAP, Carlisle Bog NAP, Olivine Bridge NAP, Skagit Bald Eagle NAP, Morning Star NRCA
Chinook Salmon – Puget Sound	Threatened	Kitsap Forest NAP, Mt. Si NRCA, West Tiger Mountain NRCA, Olivine Bridge NAP, Skagit Bald Eagle NAP
Chinook Salmon – Lower Columbia	Threatened	Klickitat Canyon NRCA
Steelhead – Lower Columbia	Threatened	Klickitat Canyon NRCA, Table Mountain NRCA, Washougal Oaks NAP/NRCA
Golden paintbrush	Threatened	Rocky Prairie NAP, Admiralty Inlet NAP
Wenatchee Mts. checker-mallow	Endangered	Camas Meadows NAP

*Only sites within the median home range of a status 1, 2, or 3 owl territory included
**Only occupied sites included

Table 5. Other Species of Concern Found in Natural Areas

Within the Area Covered by the State Trust Lands HCP (Compared to State Lands HCP Tables III.14 and III.17 - Federal Candidates along with updates to any change in species status have been added to reflect current information.)

SPECIES	NATURAL AREA NAP-Natural Area Preserve NRCA-Natural Resources Conservation Area
FEDERAL CANDIDATE	
Coho salmon (Lower Columbia/SW Washington)	Washougal Oaks NAP/NRCA
Oregon spotted frog	Trout Lake NAP
Whitebark pine	Chopaka NAP, Loomis NRCA
FEDERAL SPECIES OF CONCERN	
Beller's ground beetle	Snoqualamie Bog NAP, Kings Lake Bog NAP
California bighorn sheep	Morning Star NRCA
Cascades frog	Mt.Pilchuck NRCA
Columbia torrent salamander	Ellsworth Creek NRCA
Fringed myotis	Camas meadows NAP
Gorge daisy	Columbia Falls NAP
Harlequin duck	Morning Star NRCA
Hatch's click beetle	Kings Lake Bog NAP
Howell's daisy	Columbia Falls NAP, Table Mt. NRCA
Larch Mountain salamander	Table Mt. NRCA, Columbia Falls NAP
Makah copper	North Bay NAP, Carlisle Bog NAP
Northern goshawk	Clearwater Corridor NRCA, Morning Star NRCA
Northern red-legged frog	Carlisle Bog NAP, North Bay NAP, Table Mountain NRCA, Morning Star NRCA, Ellsworth Creek NRCA, Kings Lake Bog NAP
Olive-sided flycatcher	Numerous sites

Table 5. Other Species of Concern Found in Natural Areas

Within the Area Covered by the State Trust Lands HCP (Compared to State Lands HCP Tables III.14 and III.17 - Federal Candidates along with updates to any change in species status have been added to reflect current information.)

SPECIES	NATURAL AREA NAP-Natural Area Preserve NRCA-Natural Resources Conservation Area
Oregon sullivantia	Columbia Falls NAP
Peregrine falcon	Table Mountain NRCA, Cypress Island NAP, Mt. Si NRCA, Elk River NRCA, Hat Island NRCA, Lummi Island NRCA, North Bay NAP
Slender-billed white-breasted nuthatch	Washougal Oaks NAP/NRCA
Suksdorf's desert-parsley	White Salmon Oak NRCA
Tailed frog	Table Mountain NRCA, Morning Star NRCA
Tall bugbane	Washougal Oaks NAP, Columbia Falls NAP
Valley silverspot	Mima Mounds NAP
Van Dyke's salamander	South Nemah NRCA, Ellsworth Creek NRCA
Wenatchee larkspur	Camas Meadows NAP
White-top aster	Rocky Prairie NAP, Mima Mounds NAP
Yuma myotis	Woodard Bay NRCA
STATE-LISTED, NO FEDERAL STATUS	
Sandhill crane (State Endangered)	Trout Lake NAP, Klickitat Canyon NRCA
STATE CANDIDATE, NO FEDERAL STATUS	
Dunn's salamander	Teal Slough NRCA, South Nemah NRCA
Pileated woodpecker	Table Mountain NRCA, Morning Star NRCA, Kitsap Forest NAP, and others
Puget blue	Rocky Prairie NAP
Purple martin	Woodard Bay NRCA, Kennedy Creek NAP
Vaux's swift	Numerous sites
STATE SENSITIVE OR STATE MONITOR SPECIES	
Olympic mud minnow	Carlisle Bog NAP, Chehalis River Surge Plain NAP, West Tiger Mountain NRCA
Western bluebird	Rocky Prairie NAP, Mima Mounds NAP

Table 6. Natural Areas Composed Primarily of Late Seral Forests or a Combination of Mature and Late Seral Forests

Within the Area Covered by the State Trust Lands HCP

NATURAL AREA NAP-Natural Area Preserve NRCA-Natural Resources Conservation Area	NATURAL AREA ACRE SIZE
COASTAL	
Kitsap Forest NAP	572
Stavis NRCA	1,877
South Nemah NRCA	2,440
Willapa Divide NAP	587
Hendrickson Canyon NAP	159
Ellsworth Creek NRCA	557
Clearwater Corridor NRCA	2,323
South Nolan NRCA	213
WESTERN CASCADES	
Skagit Bald Eagle NAP	1,546
Granite Lakes NRCA	603

Table 6. Natural Areas Composed Primarily of Late Seral Forests or a Combination of Mature and Late Seral Forests

Within the Area Covered by the State Trust Lands HCP

NATURAL AREA NAP-Natural Area Preserve NRCA-Natural Resources Conservation Area	NATURAL AREA ACRE SIZE
Morning Star NRCA	33,592
West Tiger Mt. NRCA	3,908
Mount Si NRCA	12,528
Rattlesnake Mt. Scenic Area	1,771
Table Mountain NRCA	2,837
Columbia Falls NAP	1,194
Charley Creek NAP	1,966
Tahoma NRCA	230
Middle Fork Snoqualmie NRCA	9,001
EASTERN CASCADES	
Monte Cristo NAP	1,151
Klickitat Canyon NRCA	1,516

Road Management Activities

Background on Road Management Activities

Unlike most activities addressed in this report, road management activities are reported by calendar year instead of fiscal year. This is due to the complexities of collecting data and reporting road related activities during the height of the construction season. Data presented is that which was available at time of report production for Calendar Year 2011.

Projects Completed

Through land transactions and inventory activities, DNR has acquired 50 new fish passage barriers that will need to be addressed. Despite these additions, we continue to be on track to meet our October 2016 Road Maintenance and Abandonment Plan (RMAP) commitment. A total of 168 barriers were removed from the fish-barrier work list; 127 of these being physically removed or replaced, opening up an estimated 64 miles of fish habitat on DNR-managed lands in calendar year 2011. The remaining 41 barriers were either downgraded from fish streams to no-fish streams following protocol survey requirements; determined to not be on DNR–managed land, forest land, or forest roads; or had very limited habitat gain (usually less than 200m) and were reprioritized for replacement at the end of the culvert's useful life with consensus from Washington Department of Fish & Wildlife (WDFW) and Forest Practices staff. These fish barrier removals represent an investment of $3.2 million dollars.

On lands managed under the State Lands HCP, 202.73 miles of road were abandoned or decommissioned. DNR decreased the total road miles on HCP-managed lands from 10,220 to 10,086 due to abandonment and land transaction activities in 2011.

Table 7. Road Management Activities Summary

By HCP Planning Unit, Calendar Year 2011

ACTIVITY	CHELAN	COLUMBIA	KLICKITAT	NON-HCP LANDS	NORTH PUGET	OESF	SOUTH COAST	SOUTH PUGET	STRAITS	YAKIMA	GRAND TOTAL (MILES)
New Road Constructed	0	16.38	1.70	13.96	45.17	2.13	17.66	7.74	8.70	2.49	115.93
Road Reconstructed	0	3.66	2.20	7.79	50.42	.81	.98	2.39	2.84	.68	71.77
Forest Roads Decommis-sioned	0	0.20	0	7.00	0	6.47	3.38	0	1.84	28.34	47.23
Forest Roads Abandoned	0	11.23	.04	12.60	86.67	0	11.76	34.65	1.99	16.17	175.11
Inventoried Roads	90.12	1,350.00	582.63	2,980.59	1,547.87	1,801.00	1,556.00	1,055.26	743.24	1,359.58	13,066.29
Total Fish Passage Barriers Removed (projects)	0	15	3	8	35	21	20	18	5	2	127

Rights-of-Way Easements

Background on Rights-of-Way Easements

Rights-of-way easements are detailed in Tables 8 and 9. The first table reports on the total number of new easements – those that created a new "footprint," indicating that timber was cut (to create a corridor or area for the utility) and/or a new right-of-way was created. The second table reports on the acreage and mileage of all changes in utility easements granted in the reporting period.

Table 8. Road Use Permits and Easements

By HCP Planning Unit, Fiscal Year 2012

PLANNING UNIT	COLUMBIA	KLICKITAT	NORTH PUGET	SOUTH PUGET	STRAITS	TOTAL
New Road Constructed						
Miles	.57	NA*	0.13	0.72	NA*	**1.42**
Acres Impacted	7.14	4.58	0.38	6.30	1.64	**20.04**
Road Reconstruction						
Miles	0	0	0	0	0	**0**
Acres Impacted	0	0	0	0	0	**0**
Road Abandonment						
Miles	0	0	0	0	0	**0**
Acres Impacted	0	0	0	0	0	**0**
Fish Barrier Removal						
Number	0	0	0	0	0	**0**
Stream miles opened	0	0	0	0	0	**0**

*Where mileage is reported as 'NA-Not Applicable', the easements reported were not road-related; they were for other structures on the land base (e.g. transformer boxes, cathodic protection, etc.).

Table 9. Utility Easements

By HCP Planning Unit where changes occurred, Fiscal Year 2012

PLANNING UNIT	NORTH PUGET	SOUTH PUGET	KLICKITAT	YAKIMA	TOTAL
New Construction					
Miles	NA*	NA*	.83	NA*	**.83**
Acres Impacted	0.22	0.02	2.00	.19	**2.43**

*Where mileage is reported as 'NA-Not Applicable', the easements reported were not road-related; they were for other structures on the land base (e.g. transformer boxes, cathodic protection, etc.).

Land Transaction Activities

Background on Land Transaction Activities

Transactions by HCP Planning Unit summarized below were concluded during FY 2012.

Chelan

DNR traded one 82-acre parcel in Okanogan County to the Washington State Department of Fish and Wildlife (WDFW). The parcel lies within the WDFW and Wildlife's Big Buck Wildlife Area and is sparsely timbered; it had been designated no role for spotted owls.

Columbia

One 41-acre property was added to the Washougal Oaks Natural Resources Conservation Area in Clark County. This property has 14.5 acres of oak woodlands and is designated as HCP land, but has no spotted owl role.

One 80-acre parcel used for recreation that includes a developed campground was transferred to Clark County. The property had been designated no role for the spotted owl and was not retained as a contributor to the State Trust Lands HCP due to the partial development of the site.

Klickitat

Several parcels totaling 918 acres were added to the Klickitat Canyon Natural Resources Conservation Area. The property is designated HCP permit lands with no role for northern spotted owls and also contains areas of talus.

North Puget

DNR acquired a large parcel of private forestland east of Everett in Snohomish County for the Common School Trust, totaling 2,845 acres. The property is designated as HCP permit lands without a spotted owl role.

An 8.7-acre parcel adjacent to the Darrington airport was transferred to the town of Darrington. The parcel was in an area designated Nesting Roosting Foraging habitat for northern spotted owls but had no actual habitat because of Federal Aeronautics Administration (FAA) rules requiring that the property be kept cleared as an approach zone to the airport. The property was removed from the HCP covered lands.

A 150-acre property, also designated as having no role for owls, was removed as lands contributing habitat to the HCP. The property was re-conveyed to Snohomish County (essentially returned from state ownership back to the county), at their request, to establish a gun range.

Olympic Experimental State Forest

DNR acquired three forest land parcels for the Common School Trust, totaling 1,777 acres, in the Olympic Experimental State Forest (OESF).

South Coast

Four properties have been added to this planning unit. One 163-acre forested property was added to the Common School Trust in Pacific County. One 6.5-acre property was added to the Elk River Natural Resources Conservation Area in Grays Harbor County, and two properties added 22 acres of uplands to the Niawiakum Natural Area Preserve in Pacific County. All are designated permit lands under the HCP with no spotted owl role.

South Puget

Transactions in this planning unit were mostly additions, with 94 acres added to Stavis Natural Resources Conservation Area in Kitsap County and 7 acres to Woodard Bay Natural Resources Conservation Area in Thurston County. All were designated as HCP permit lands with no spotted owl role.

A 480-acre parcel in King County—acquired in 2001 from Plum Creek Timber—was held out of the HCP permit lands at that time. In this 2012 reporting year, the timber has aged sufficiently that the property has been added to the HCP having a dispersal habitat role for spotted owls. Two State Forest Trust land parcels left DNR ownership: a 36-acre parcel in Pierce County and 304 acres in Kitsap County, both re-conveyed to the counties for use as parks. Both properties had been designated no role for spotted owl under the HCP.

Straits

No activity for this reporting period.

Yakima

Many of the properties involved in the recent exchange between DNR and Washington State Department of Fish and Wildlife (WDFW) are located in the Yakima Planning Unit; however, most parcels are in the eastern end of the unit and do not have significant forest stands. About 180 acres of talus habitat was acquired from WDFW in Yakima County. The exchange includes 10,145 acres acquired that have no designated role for northern spotted owls and 936 acres disposed of that formerly were designated as having no role and are now removed from HCP covered lands.

The large Central Cascades Land Exchange was completed in 2008. The Common School Trust acquired 79,723 acres in Yakima and Kittitas Counties. The properties acquired in that exchange were not officially added to the HCP permit lands at the time due to an expected comprehensive review of owl designations in the Yakima Planning Unit. However, that effort has been delayed, so all the properties have officially been designated this 2012 reporting year as being HCP-covered "permit lands" and having no role for northern spotted owl under the HCP.

Table 10. Land Transactions

Covered by the State Trust Lands HCP, Fiscal Year 2012

ACTIVITY		CHELAN	COLUMBIA	KLICKITAT	NORTH PUGET	OESF	SOUTH COAST	SOUTH PUGET	STRAITS	YAKIMA	TOTALS
AQUIRED											
Stream Miles	Stream type 1	-	-	-	6.71	3.85	-	-	-	8.48	**19.04**
	Stream type 2	-	-	1.16	7.61	1.46	.13	.46	-	4.94	**15.76**
	Stream type 3	-	2.09	.45	9.71	7.44	2.65	8.04	-	47.01	**77.39**
	Stream type 4	-	.31	-	9.98	7.75	2.45	2.06	-	70.07	**92.62**
	Stream type 5	-	1.80	-	14.11	20.41	10.88	7.77	-	272.27	**327.24**
	Stream type 9	-	.61	-	4.86	.14	7.82	4.15	-	108.60	**126.18**
	Total Stream Miles Acquired	**-**	**4.81**	**1.61**	**52.98**	**41.05**	**23.93**	**22.48**	**-**	**511.37**	**658.23**
Rain on Snow	**Total Rain on Snow Acres Acquired**	**-**	**-**	**-**	**-**	**-**	**-**	**431.85**	**-**	**22,492.00**	**22,923.85**
Age Class	Open 0-10	-	-	433.82	325.40	421.38	1.00	66.00	-	-	**1,247.60**
	Regeneration 11-20	-	-	-	705.60	214.00	21.00	57.60	-	1,936.00	**2,934.20**
	Pole 21-40	-	-	-	1,437.60	670.17	2.00	17.02	-	2,940.32	**5,067.11**
	Closed 41-70	-	-	-	-	59.15	99.37	414.97	-	60,639.49	**61,212.98**
	Complex 71-100	-	-	29.89	312.40	31.00	-	-	-	3,366.70	**3,739.99**
	Complex 101-150	-	-	158.66	-	-	-	17.00	-	-	**175.66**
	Functional 150+	-	-	-	-	-	-	-	-	-	**-**
	Non-Forest Land	-	40.91	294.80	64.00	381.00	68.15	9.76	-	20,984.99	**21,843.61**
	Total Age Class Acres Acquired	**-**	**40.91**	**917.17**	**2,845.00**	**1,776.70**	**191.52**	**582.35**	**-**	**89,867.50**	**96,221.15**
DISPOSED											
Stream Miles	Stream type 1	-	-	-	-	-	-	-	-	-	**-**
	Stream type 2	-	-	-	-	-	-	-	-	-	**-**
	Stream type 3	-	-	-	2.43	-	-	-	-	.09	**2.52**
	Stream type 4	-	1.00	-	1.12	-	-	-	-	.09	**2.21**
	Stream type 5	.23	3.13	-	5.73	-	-	-	-	2.57	**11.66**
	Stream type 9	.57	2.09	-	1.76	-	-	0.79	-	2.45	**7.66**
	Total Stream Miles Disposed	**.80**	**6.22**	**-**	**11.04**	**-**	**-**	**.79**	-	**5.20**	**24.05**
Rain on Snow	**Total Rain on Snow Acres Disposed**	**-**	**-**	**-**	**20.00**	**-**	**-**	**-**	**-**	**80.00**	**100.00**
Age Class	Open 0-10	-	10.00	-	38.71	-	-	-	-	-	48.71
	Regeneration 11-20	-	-	-	-	-	-	-	-	-	-
	Pole 21-40	5.00	-	-	80.00	-	-	34.23	-	60.00	179.23
	Closed 41-70	5.00	65.00	-	-	-	-	284.67	-	138.00	492.67
	Complex 71-100	-	-	-	30.00	-	-	21.33	-	-	51.33
	Complex 101-150	-	-	-	10.00	-	-	-	-	-	10.00
Age Class	Functional 150+	-	-	-	-	-	-	-	-	-	-
	Non-Forest Land	71.59	5.00	-	-	-	-	-	-	738.00	814.59
	Total Age Class Acres Disposed	**81.59**	**80.00**	**-**	**158.71**	**-**	**-**	**340.23**	**-**	**936.00**	**1,596.53**

For HCP annual reporting purposes, the Land Transactions Section utilizes information available from the following sources to report data. This data is intended to provide a broad picture of transaction activities for the reporting period. Acreages of all categories are estimated and not field verified.

Stream Type: Data is derived from the Forest Practices Hydro Layer at the time of land acquisition to maintain consistency throughout the HCP annual reports (it has been used in State Trust Lands HCP Annual Reports since the first report was published in 1999). Evaluation of stream typing using an old FP water typing system (which included water types 1-5, 9), imbedded within the DNR GIS hydrology layer, is conducted at the time of the transaction. It may be decades before the streams are field verified and upgraded to the Trust Lands HCP water typing system (accurate typing). This information is provided to the Services through the Annual Report to give a general understanding of what stand types and habitat conditions are being transacted.

Rain-On-Snow (ROS): Data is derived from the Corporate ROS GIS layer.

Age Class: Data on acquired lands is obtained from deeds and other information relative to the holdings on the land. The Land Transactions Section categorizes the age-class based on the best information available at the time of acquisition. In some cases, age-class data on disposed lands is determined by DNR's Forest Resources Inventory System (FRIS). In other cases it is based on the appraiser's determination.

Conservation Strategy Updates

Riparian Conservation Strategy

Background on Riparian Strategy

Riparian Forest Restoration Strategy (RFRS)

Restoration thinning in riparian areas is a discretionary activity conducted through the Riparian Forest Restoration Strategy (RFRS) in concert with the timber sales program. Reporting the area thinned is complex, as areas scheduled for harvest may remain unharvested. The area actually treated needs to be retroactively calculated. The only available data on activities completed is for calendar year 2011.

Of 179 timber sales completed in calendar year 2011, 17 (5%) implemented the strategy to provide large wood to streams, maintain overstory tree growth, and enhance understory development. The total Riparian Management Zone (RMZ) area thinned was 161 acres (a 50 percent implementation area reduction from 2010). It was estimated that the 161 acres managed under the Riparian Forest Restoration Strategy (RFRS) represent only about 15 percent of RMZs within sales implementing the RFRS.

The Technical Review Committee for the Riparian Restoration Strategy met in April 2011 and came to an agreement in March 2012 around specific parameters related to thinning in stands 70 years of age or older, no longer requiring concurrence on a case-by-case basis. The agreement also included the description of a RFRS checklist that will allow DNR to report back to the Technical Review Committee on the ongoing RFRS implementation. The plan is to fully evaluate the process outlined in a March 2012 concurrence letter within two years to ensure that it is achieving the HCP riparian conservation objectives and elements of the RFRS and evaluate the need for any changes in implementation. The concurrence letter can be seen **here**.

During the 2012 third-party Sustainable Forest Initiative® (SFI®) program forest certification renewal audit, DNR received recognition of three 'Notable Practices'; practices and actions that are exemplary and indicate a strong commitment to the SFI intent and to continual improvement of their program. One of these practices was the science-based approach DNR used to obtain concurrence with the Services on the 70+ RFRS implementation issue.

Headwaters Conservation Strategy

The Draft Headwaters Conservation Strategy was produced to complete the HCP Riparian Conservation Strategies. The document represents a several-year collaborative effort between the

Federal Services, the scientific community, and DNR managers. The strategy incorporates emerging ideas about the importance of non-fish-bearing stream habitat for ecosystem conservation and the linkage to downstream fish habitat quality. The strategy provides clear guidance to prioritize site-specific protections and integrate with other existing leave areas to maximize conservation effectiveness.

In response to a letter of support from the Federal Services in November 2008, DNR conducted outreach to tribes and initiated preparations for the final State Environmental Policy Act (SEPA) process on headwater conservation. Staff reduction resulting from budget curtailment and competing priorities have temporarily postponed progress, but the process is now being reinitiated.

A manuscript based on research conducted during the development of the draft Headwaters Conservation Strategy was submitted to the *Canadian Journal of Forest Research*.

Northern Spotted Owl Conservation Strategy

Background on Northern Spotted Owl Management

The 2012 fire season had a large effect on Nesting, Roosting and Foraging (NRF) habitat on state trust land in the Naneum State Forest in eastern Washington. The Table Mountain Fire near Ellensburg burned approximately 9,001 acres of DNR-managed state trust land in the Naneum block, of which approximately 4,056 acres were designated NRF management and approximately 2,768 of those acres were suitable Nesting, Roosting and Foraging habitat for northern spotted owls. The 2,768 acres of northern spotted owl habitat that burned represents approximately 68 percent of the total designated NRF management acres in the Naneum Spotted Owl Management Unit (SOMU).

DNR division and region staff assessed impacts and identified approximately 1,791 acres to be salvaged; identifying approximately 632 acres of a designated NRF Management Area including 172 acres of burned NRF habitat to be salvaged and replanted. Legacy structure (snags and large down woody debris) will be left to aid in the development of spotted owl habitat as the forest regenerates. Because of significant scientific uncertainties regarding the interface between HCP habitat objectives and wildfires, learning opportunities and monitoring programs are being explored for spatial pattern of snag retention, longevity of snags and recruitment to down wood, and natural fire-induced regeneration. Discussions are also ongoing for developing further research and monitoring plans for future fire events, such that they can be incorporated into post-fire silvicultural prescriptions.

The table below represents current total suitable habitat percentages within each Spotted Owl Management Unit (SOMU). In addition, where appropriate, Movement, Roosting and Foraging (MoRF) Habitat type (specific to the South Puget Planning Unit) and Old Forest Habitat types (specific to the Olympic Experimental State Forest (OESF)) are also captured.

Table 11. Current Habitat Thresholds

Per Spotted Owl Management Unit (SOMU), as of January 2, 2013

SOMU NAME	PLANNING UNIT	MANAGEMENT AREA	PERCENT HABITAT MOVEMENT, ROOSTING, ROOSTING AND FORAGING (MORF)	PERCENT HABITAT OLD FOREST	PERCENT HABITAT TOTAL SUITABLE
ROCK CREEK	COLUMBIA	NRF	N/A	N/A	24.01
SILVERSTAR	COLUMBIA	DISP	N/A	N/A	47.17
SIOUXON	COLUMBIA	NRF	N/A	N/A	46.72
SWIFT CREEK	COLUMBIA	NRF	N/A	N/A	19.76
UPPER WASHOUGAL	COLUMBIA	DISP	N/A	N/A	57.90
WIND RIVER	COLUMBIA	NRF	N/A	N/A	5.23
COUGAR	COLUMBIA	NRF	N/A	N/A	41.44
HAMILTON CREEK DISP	COLUMBIA	DISP	N/A	N/A	47.13
HAMILTON CREEK NRF	COLUMBIA	NRF	N/A	N/A	13.52
HARMONY	COLUMBIA	DISP	N/A	N/A	34.85
UPPER NF STILLY	N. PUGET	NRF	N/A	N/A	0 00
WALLACE RIVER	N. PUGET	NRF	N/A	N/A	0.00
CANYON-WARNICK	N. PUGET	NRF	N/A	N/A	13.78
W SHANNON NRF	N. PUGET	NRF	N/A	N/A	0.00
W SHANNON DISP	N. PUGET	DISP	N/A	N/A	35.11
E SHANNON NRF	N. PUGET	NRF	N/A	N/A	0.00
E SHANNON DISP	N. PUGET	DISP	N/A	N/A	20.47
MID SKAGIT DISP	N. PUGET	DISP	N/A	N/A	42.84
MID SKAGIT NRF	N. PUGET	NRF	N/A	N/A	0.00
UPPER SKAGIT SOUTH NRF	N. PUGET	NRF	N/A	N/A	1 29
UPPER SKAGIT SOUTH DISP	N. PUGET	DISP	N/A	N/A	58.56
SAUK PRAIRIE DISP	N. PUGET	DISP	N/A	N/A	48.71
SAUK PRAIRIE NRF	N. PUGET	NRF	N/A	N/A	0.42
DEER CREEK	N. PUGET	NRF	N/A	N/A	6.10
EBEY HILL	N. PUGET	NRF	N/A	N/A	0.00
FRENCH BOULDER	N. PUGET	NRF	N/A	N/A	0.17
HAZEL	N. PUGET	NRF	N/A	N/A	1.09
HOWARD CREEK	N. PUGET	NRF	N/A	N/A	3.25
LORETTA	N. PUGET	NRF	N/A	N/A	22.24
MARMOT RIDGE	N. PUGET	NRF	N/A	N/A	1.40
NORTH FORK SKYKOMISH	N. PUGET	NRF	N/A	N/A	4.02
PILCHUCK MTN	N. PUGET	NRF	N/A	N/A	1.34
RINKER	N. PUGET	NRF	N/A	N/A	6.66
SILVERTON	N. PUGET	NRF	N/A	N/A	0.00
SPADA	N. PUGET	NRF	N/A	N/A	0.11
TENAS	N. PUGET	NRF	N/A	N/A	0.00
SOUTH SNOQUALMIE	N. PUGET	NRF	N/A	N/A	3.06
ALDER	N. PUGET	DISP	N/A	N/A	55.07
SOUTH FORK SKYKOMISH	N. PUGET	NRF	N/A	N/A	0 00

Table 11. Current Habitat Thresholds

Per Spotted Owl Management Unit (SOMU), as of January 2, 2013

SOMU NAME	PLANNING UNIT	MANAGEMENT AREA	PERCENT HABITAT MOVEMENT, ROOSTING, ROOSTING AND FORAGING (MORF)	PERCENT HABITAT OLD FOREST	PERCENT HABITAT TOTAL SUITABLE
CAVANAUGH	N. PUGET	NRF	N/A	N/A	0.00
CLEARWATER	N. PUGET	NRF	N/A	N/A	4.32
UPPER SKAGIT NORTH	N. PUGET	NRF	N/A	N/A	0.00
NORTH SNOQUALMIE	N. PUGET	NRF	N/A	N/A	2.73
READE HILL	OESF	OESF	N/A	16.41	36.12
SEKIU	OESF	OESF	N/A	0.00	3.64
UPPER CLEARWATER	OESF	OESF	N/A	25.85	29.50
UPPER SOL DUC	OESF	OESF	N/A	1.03	12.88
WILLY HUEL	OESF	OESF	N/A	18.71	25.01
COPPER MINE	OESF	OESF	N/A	14.58	18.72
DICKODOCHTEDAR	OESF	OESF	N/A	8.26	23.34
GOODMAN CREEK	OESF	OESF	N/A	17 03	25.93
QUEETS	OESF	OESF	N/A	21.96	26.42
KALALOCH	OESF	OESF	N/A	12 38	22.15
CLALLAM RIVER	OESF	OESF	N/A	0.00	13.05
BLACK DIAMOND	S. PUGET	DISP	7 50	N/A	25.54
GREEN	S. PUGET	NRF	N/A	N/A	23.64
PLEASANT VALLEY DISP	S. PUGET	DISP	1.35	N/A	22.13
PLEASANT VALLEY NRF	S. PUGET	NRF	N/A	N/A	0.92
TAHOMA	S. PUGET	DISP	1.66	N/A	16.97
ELBE HILLS	S. PUGET	DISP	1.81	N/A	37.01

Marbled Murrelet Conservation Strategy

Background on the Marbled Murrelet

Marbled Murrelet Long-Term Conservation Strategy

DNR is working jointly with the US Fish and Wildlife Service (USFWS) to develop a long-term Marbled Murrelet Conservation Strategy for the six western Washington HCP Planning Units. The strategy is being designed to conserve marbled murrelet habitat on state trust lands in western Washington, while allowing for timber harvest and other activities that earn revenue for the trust beneficiaries.

Because DNR recognizes the importance of public input in the development of alternatives, we have opted to use an expanded scoping approach to provide additional opportunities for public input prior to issuing a Draft Environmental Impact Statement (DEIS). On April 20, 2012, DNR and USFWS jointly issued a scoping notice announcing opportunities for the public to comment on the draft Need, Purpose, and Objectives (NPO) statements. The objective was to identify information needed to complete the strategy, including environmental issues of concern and other considerations related to developing alternatives. Both agencies provided a 30-day comment pe-

riod and held four public meetings, in Olympia, Sedro-Woolley, Cathlamet and Forks, to facilitate public feedback. Commenters submitted a total of 2,040 letters, of which approximately 2,000 were form letters. Stakeholders providing comments included timber industry, environmental organizations, municipalities, individual citizens, tribes, federal agencies and beneficiaries. On August 7, 2012, the Board of Natural Resources (BNR) and USFWS approved language for a Need, Purpose and set of Objectives to be used in developing the DEIS for the strategy, completing the first phase of scoping.

The next step for the strategy is to conduct a second and final phase of scoping. The second phase will focus on conceptual alternatives for the strategy and will include a public comment period and public meetings. Upon completion of this second phase, DNR and USFWS will complete a single comment summary document comprised of all comments submitted during both phases of scoping. More information on the long-term marbled murrelet strategy can be found on **DNR's Marbled Murrelet Conservation Strategy Webpage.**

Marbled Murrelet Interim Conservation Strategy

Implementation of the Marbled Murrelet Interim Conservation Strategy continues as the long-term Marbled Murrelet Conservation Strategy is developed. Surveyed, unoccupied murrelet habitat has been released from deferral status, as directed in Step 4 of the State Trust Lands HCP, and is described here for the HCP's Straits Planning Unit and that portion of the South Coast Planning Unit outside of Southwest Washington **(State Trust Lands HCP Planning Units Map).** Table 12 shows the amount of released habitat and how much of these forested trust lands have been harvested to date.

In May, 2012 DNR and the US Fish & Wildlife Service signed Minor Administrative Amendment No. 2 to the Department of Natural Resources State Trust Lands Habitat Conservation Plan, a revision to the Interim Conservation Strategy for the Marbled Murrelet in the Columbia and South Coast Planning Units, referred to as the Marbled Murrelet Interim Conservation Strategy.

Table 12. Acres of Released Marbled Murrelet Habitat

by WAU (Watershed Administrative Unit)

WAU NAME	RECLASSIFIED ACRES	MAXIMUM ACREAGE AVAILABLE FOR HARVEST	HARVESTED ACRES AS OF 11/1/12
Straits HCP Planning Unit			
Bell Creek	220	-	-
Big Quil	113	56	1
Chimakum	13	6	-
Cushman	120	-	-
Dabob	22	10	-
Discovery Bay	1,137	568	255
Dungeness Valley	1,415	190	39
Hamma Hamma	186	92	31
Lake Crescent	156	-	-
Lilliwaup	570	285	38
Little Quil	95	47	-

Table 12. Acres of Released Marbled Murrelet Habitat

by WAU (Watershed Administrative Unit)

WAU NAME	RECLASSIFIED ACRES	MAXIMUM ACREAGE AVAILABLE FOR HARVEST	HARVESTED ACRES AS OF 11/1/12
Ludlow	94	47	45
Lyre	640	19	-
Morse Creek	315	4	3
Port Angeles	159	155	97
Salt	2,414	703	134
Sequim Bay	1,969	448	188
Siebert McDonald	1,853	474	136
Skokomish, Lower	15	-	-
Skokomish, Lower NF	73	36	10
Sutherland-Aldwell	1,933	475	158
Twins	770	225	59
South Coast HCP Planning Unit, North of Highways 8 & 12			
Cook-Elk	227	-	-
Copalis River	258	31	1
Hoquiam, EF	8	3	1
Hoquiam, WF-MF	57	-	-
Humptulips, Middle	111	55	66**
Humptulips, WF	261	30	3
Joe-Moeclips	653	326	53
Stevens Creek	118	59	54
Wishkah, Lower	1	-	-
South Coast HCP Planning Unit, East of I-5			
Hanaford	10	5	-
Newaukum, Lower NF	5	2	-
Scatter creek	218	108	-
Skookumchuck, Lower	90	45	3

*Data was obtained from the Department of Natural Resources (DNR) Planning & Tracking (P&T) System. The data included in this report reflects data as it exists on November 1, 2012 when the information was extracted from the database. It does not reflect new data or corrections that may be entered after this date. The P&T data has been overlaid with the Marbled Murrelet (MM) Habitat Layer (effective April 18, 2003) to identify timber sale activities (sold and completed). Values have been rounded to the nearest acre.

** DNR and the US Fish & Wildlife Service agreed to set aside the same amount of habitat within the adjoining WAU (Watershed Administrative Unit) that could have been harvested to mitigate for the over harvest within Middle Humptulips WAU.

Monitoring and Research

Background on Monitoring and Research

Implementation Monitoring

Accomplishments

During 2012, DNR re-established the State Trust Lands HCP **Implementation Monitoring Program** for which funding had been severely restricted since 2009. Both in-office and field monitoring work have resumed.

The implementation monitoring team published an **HCP Implementation Monitoring** Report in March 2012 for fiscal years 2009-2011. The in-office monitoring review focused on some of the elements of the Northern Spotted Owl Conservation Strategy and the rain-on-snow and roads elements of the Riparian Conservation Strategy. The review included timber sales completed in fiscal years 2009-2011 in all planning units, excluding the OESF (Olympic Experimental State Forest) Planning Unit.

In addition to completing the 2009-2011 Implementation Monitoring Report, during the 2012 summer months, the HCP implementation monitoring team focused field efforts on the **Riparian Forest Restoration Strategy** (RFRS 2006) for the 2012 Implementation Monitoring Report. The team randomly selected and evaluated stream segments where the riparian strategy was implemented between its adoption in 2006 and the field monitoring date in April 2012. Some of the parameters monitored during field data collection included:

- Relative density and trees per acre
- Down woody debris and large woody debris quantity and quality
- Accuracy of stream typing
- Integrity of the riparian buffer on the 25-foot core stream buffer.
- Integrity of the 50-foot riparian buffer equipment limitation zone

The 2012 Implementation Monitoring Report for the Riparian Forest Restoration Strategy activities, including any recommendations, will be available in 2013.

Riparian Silviculture Effectiveness Monitoring

The objective of effectiveness monitoring is to document the response to silvicultural or harvest treatments in order to increase management confidence and options and to support continual improvement of HCP procedures related to the RFRS. Field efforts associated with effectiveness monitoring of the Riparian Forest Restoration Strategy (RFRS) have been postponed as a result of budget curtailment. However, a major effort to monitor 37 stream-reaches through the Implementation Monitoring Program will provide valuable context to the activities that were conduct-

ed on the existing seven long-term restoration strategy effectiveness monitoring sites. Since the entire range of silvicultural treatments cannot be replicated on controlled sites, partnering with the Implementation Monitoring Program provides invaluable insight as to the overall impact the strategy.

Olympic Experimental State Forest Research and Monitoring Program

Background on the OESF

The Olympic Experimental State Forest (OESF) is designated for experimentation with innovative forest management techniques to help DNR learn how to better integrate ecological values and commodity production across the forested landscape. The OESF Research and Monitoring Program seeks to fulfill the OESF vision for ecosystem management, adaptive management, research collaboration, and outreach.

Riparian Status and Trends Monitoring in the OESF

A study plan for OESF Riparian Status and Trends Monitoring was developed by DNR staff in 2011 and peer reviewed later that year. The goal of the study is to characterize the status and trends of riparian and aquatic habitat across the OESF as the HCP is implemented. In July 2012, DNR provided funding of $145,000 for implementing the study plan during FY 2013. The Forest Service Pacific Northwest Research Station, a key collaborator on this project, provided additional funding and in-kind support. Project implementation started in August 2012 and included GIS reconnaissance of Type-3 stream basins selected for monitoring, field reconnaissance of 50 basins in the OESF, and four reference basins in the Olympic National Park (see map here). All basins are permanently marked, and water and air temperature data loggers are installed. Additional equipment will be installed during the 2013 field season.

The project is expected to continue for at least 10 years. In the short term, the monitoring will provide needed empirical data on current in-stream and riparian conditions. The long-term objectives are to:

- Document directional change (trend) in the value (or distribution) of individual monitoring indicators or watershed condition scores across the OESF
- Test the assumptions around the recovery of riparian and aquatic conditions
- Evaluate the projections of riparian habitat over time as presented in the Revised Draft EIS for the Draft OESF Forest Land Plan
- Supply information for HCP implementation monitoring
- Supply information useful for HCP effectiveness and validation monitoring
- Provide information for inferences about management effects on habitat as a basis for adaptive management

Coordination with the OESF Forest Land Planning Process

DNR is developing a 100-year forest land plan for the OESF. A revised Draft Environmental Impact Statement and a Draft Forest Land Plan currently are under preparation and planned for publication in 2013. The OESF Research and Monitoring Program has contributed to the planning process by:

- Developing an adaptive management chapter in the Forest Land Plan describing the integration of research and monitoring activities with planned management activities. The chapter also prioritizes the ecological uncertainties identified during the planning process, thus creating a fresh focus for the research and monitoring program

- Describing the steps in the OESF adaptive management process and the roles and responsibilities of DNR staff in the adaptive management cycle

- Describing the information management and implementation monitoring to be conducted as the OESF Forest Land Plan is implemented.

- Developing study plans for monitoring and research projects, which are identified as priority topics and will be carried out concurrently with the implementation of the Forest Land Plan

Collaboration with University of Washington Olympic Natural Resources Center

The Olympic Natural Resources Center (ONRC) and OESF were created following the recommendation of the 1989 Old Growth Commission, and their missions are closely connected. ONRC's role is to conduct research, education, and outreach on innovative management methods which successfully integrate environmental and economic interests. The OESF is viewed as a place to conduct these activities. The complex forest management issues faced by DNR provide relevant research questions for University of Washington (UW) researchers. Past collaboration between ONRC and DNR included multiple research and educational projects, but this partnership has not fully utilized the potential provided by the similar missions.

Recent changes in the ONRC and UW structures, budget, leadership, and vision prompted ONRC to revisit its priorities and external relationships. The OESF research and monitoring needs, identified in the Draft OESF Forest Land Plan, created fresh focus for collaboration with external organizations like ONRC. A number of meetings between DNR and ONRC took place in 2011 and 2012, which narrowed the list of potential research topics for collaboration. Research proposals were developed to test silvicultural prescriptions for producing late-successional forest structures and for predictive modeling of tree growth at forest edges. In September of 2012, ONRC received one year of funding to start research on the silvicultural component of the proposals.

Adaptive Management

Background on Adaptive Management

Adaptive Management Steering Committee

The new Adaptive Management Steering Committee is made up of Forest Resources Division assistant managers and scientists, and is chaired by the Division Manager, Julie Sackett. Its purpose is to make decisions on implementation of potential research projects and adaptive management changes. The Forest Resources Division (which oversees the implementation of the HCP) held a kick-off meeting May 8, 2012, in which the Adaptive Management Steering Com-

mittee surveyed possible initial projects. To frame current adaptive management approaches from other agencies, the committee invited Bernard Bormann of US Forest Service Pacific Northwest Forest Sciences Laboratory in Corvallis, Oregon as a speaker. Bernard's take-home message was that adaptive management success is proportional to the ability to institutionalize learning. The committee discussed ways to incorporate this concept into the division's ongoing process of assessment and the application of the best available scientific information to effect improvements in the way that forest ecosystems are managed.

The Steering Committee agreed to have regular meetings to direct priorities and assess progress on projects. Two initial projects are currently being addressed: cost and benefit analysis of a relaxed leave-trees damage clause in timber sales contracts, and opportunities to cooperate with new investigations on the benefits of retained/created structures in harvest units. Several aspects of updating the guidance for the riparian conservation strategy are the next committee priorities.

Other Programs

Forest Certifications

Background on Forest Certification

Forest certification is not a requirement of the 1997 State Trust Lands Habitat Conservation Plan (HCP) but is complementary to its intent, providing value through annual audits conducted by independent, third-party auditors. Implementing the obligations outlined in the HCP assists DNR in meeting the commitments outlined within forest certification standards.

We include forest certification updates in the State Trust Lands HCP Annual Reports to report on the auditor's annual findings.

Sustainable Forestry Initiative® Program (SFI®)

Fiscal Year 2012 SFI Renewal Audit

The FY 2012 Sustainable Forestry Initiative program renewal audit was conducted by an independent, third-party auditing firm and was held in DNR's South Puget and Pacific Cascade Regions in June 2012. The audit focused on forest management planning, forest productivity, protection and maintenance of water resources, biological diversity, visual quality and recreational benefits, protection of special sites, efficient use of forest resources, legal and regulatory compliance, forestry research, science and technology, training and education, community involvement, public land management responsibilities, communications and public reporting, and management review and continual improvement. A review was conducted to assess the progress made to address three 'Opportunities for Improvements' issued during the FY 2011 audit that deal with outdated inventory, contract provisions that specify conformance to best management practices, and incomplete HCP implementation monitoring commitments. The SFI auditors were satisfied with DNR's progress in each area.

During the FY 2012 audit, field files for each site were reviewed and used to determine the effectiveness of DNR's forest management systems and processes. A total of 25 sites were visited during the two days in the field. Four active logging sites were visited; one was a contract harvest sale, and the remaining were stumpage sales. Harvest operations on two of the active sales were in progress, and the contractors had been trained through Washington Contract Loggers As-

sociation (WCLA) Master Logger's program. Operations on the two other active sales were shut down by DNR's contract administrative staff until soil and/or market conditions improved.

The audit results included DNR receiving one minor 'Non-Conformance'(A minor non-conformance indicates a SFI program weakness or a lack of objective evidence of effective implementation) related to aerial overspray, which has been closed; zero 'Opportunities for Improvement' (Opportunities for Improvement are weaknesses in the program that may lead to a non-conformance in the future if activities are not monitored for effectiveness); and four 'Notable Practices' (Notable Practices are practices and actions that are exemplary and indicate a strong commitment to the SFI intent and to continual improvement of their program) related to adaptive management, climate change, training, and land transactions.

The auditors summarized that DNR has a good, reliable internal audit program and monitoring system carried out at headquarters that determines conformance at all regions and that implements corrective actions when appropriate. There is good coordination and communication between the central office and each region.

It's the opinion of the third-party auditing team that DNR continues to meet the Sustainable Forestry Initiative program requirements and has effectively implemented the SFI 2010-2014 Standard. Bureau Veritas recommends state-wide renewal of SFI certification on DNR-managed forested state trust lands.

Please refer to the **SFI-Forest Certification Summary Report-2012** for more information related to the FY 2012 SFI forest certification audit on DNR-managed forest state trust lands.

Forest Stewardship Council™ (FSC®)

Fiscal Year 2012 FSC Surveillance Audit

The FY 2012 surveillance audit was conducted in October 2011 by an independent-third party auditing firm. The audit was held in the South Puget HCP Planning Unit to determine adherence to the newly adopted FSC-US Forest Management Standard, including Pacific Coast variations. The audit focused on compliance with laws, tenure and use rights and responsibilities, indigenous peoples' rights, community relations and worker's rights, benefits from the forests (economic viability, marketing, minimization of waste, diversification and sustainable harvest), environmental impacts, management planning, monitoring, maintenance of high conservation value forests and consultation with stakeholders. All stakeholders contacted during consultations expressed satisfaction with DNR.

Sites were chosen based on a wide range of activities related to priorities outlined within the audit plan. Sites visited included harvest areas, site preparation, planting, recreational areas, new road construction, fish passage structures, road maintenance projects, wetland protection, RMZ (riparian management zone) buffers and natural areas.

Harvest areas were inspected to determine their condition and whether there had been any significant soil disturbance or water quality issues. The activities employed were assessed as to whether they were conducted as planned and whether the sites were regenerating. The post-harvest monitoring also was assessed to insure that the post-harvest activities were being implemented. All areas examined were found to be in conformance and met the forest management standards of the FSC audit region. Field files for each site were reviewed and used to determine the effectiveness of DNR's forest management system and process. A total of 29 sites were vis-

ited during the two days in the field. Consistency was found throughout the field sites visited and implementation of planned site activities was excellent.

A review was conducted of previous audits. The FSC audit team closed a previously cleared Corrective Action Request related to ensuring that shipping documentation includes the FSC product group and DNR certificate number. One minor Corrective Action Request was issued during the FY 2012 audit dealing with State Trust Lands Habitat Conservation Plan requirements related to monitoring. The 2009 Habitat Conservation Plan Implementation Monitoring report had not been completed. DNR has one year to address the Corrective Action.

It is the opinion of the audit team that DNR meets the requirements of the FSC-US Forest Management Standard. The minor Corrective Action Request issued will remain open until the next audit. The FSC third-party auditing firm recommended that FSC-certification within DNR's South Puget HCP Planning Unit continue.

Please refer to the **FSC-Forest Management Certification Public Summary Report** for more information related to FSC forest certification audits on DNR-managed forest state trust lands.

Appendix A:

A brief background for this Annual Report about DNR management of forested state trust lands guided by the HCP

Background Information

HCP timber sales work to develop diverse future forest structures. Implementation of the Northern Spotted Owl and Riparian Conservation strategies superimpose to fundamentally change the landscape from past forest practices. These strategies protect aquatic habitats and promote biodiversity.

What is the Habitat Conservation Plan (HCP)?

Washington's DNR manages roughly 2.1 million acres of forested state trust lands statewide. DNR's **State Trust Lands Habitat Conservation Plan** (HCP) guides management of about 1.8 million acres of forested state trust lands within the range of the northern spotted owl (Strix occidentalis caurina). Authorized under the Endangered Species Act (ESA), the HCP is a partnership between DNR, the United States Fish and Wildlife Service and NOAA Fisheries Service (collectively, the Federal Services). The State Trust Lands Habitat Conservation Plan was signed in January 1997.

In general, the HCP guides our management of forested state trust lands west of the crest of the Cascade Mountains and those on the eastern slopes of the Cascades, from the Canadian border to the Columbia River. To manage these areas more effectively and efficiently, DNR divided this area into nine planning units based primarily on large watersheds. The HCP enables us to comply with Endangered Species Act requirements while permitting certain activities. It does this through conservation objectives and strategies that provide habitat for listed and unlisted species while providing greater certainty, flexibility, and stability to meet our trust responsibilities—generating revenue for trust beneficiaries through activities such as harvesting timber and other forest products. **Back to Annual Report.**

Conservation Objectives for ESA-listed Species and Multiple-Species

The HCP is built around four primary conservation strategies. These are the northern spotted owl strategy, the marbled murrelet strategy, the riparian strategy and the multiple-species conservation strategy. These strategies are individually described but each is linked to and benefits the other strategies.

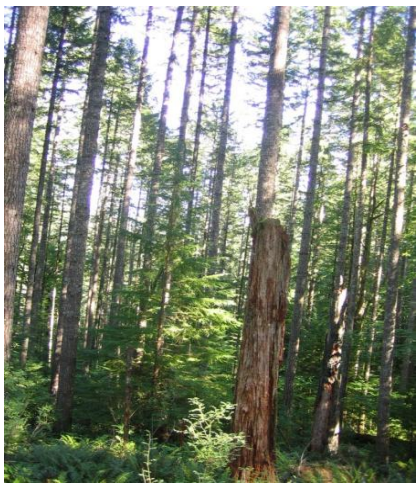
Northern Spotted Owl Conservation Strategy

DNR is committed to providing habitat to help maintain nesting areas for northern spotted owls and facilitate their movement through the landscape. To aid in this goal, we have designated nesting, roosting and foraging (NRF) and dispersal management areas. Through HCP research and monitoring commitments, DNR is working to develop a better understanding of what comprises functional owl habitat and to learn which silvicultural techniques create suitable owl habitat.

When the HCP was developed, DNR-managed lands were assessed for their potential role in northern spotted owl conservation. Those lands identified as likely to provide demographic support and contribute to maintaining species distribution were designated as NRF management areas. Suitable NRF habitat is primarily high-quality roosting and foraging habitat with enough interspersed nesting structure that the whole area can be utilized by reproducing owls. Lands identified as important for facilitating owl dispersal (movement by young owls from nest sites to new breeding sites) were designated as dispersal management areas.

Our conservation strategy calls for maintaining at least 50 percent of designated NRF and dispersal management areas in suitable habitat at any given time. Acceptable management activities depend on the amount of habitat in a Spotted Owl Management Unit and the habitat type present in the potential harvest area.

A Spotted Owl Management Unit (SOMU) is a generic spatial unit delineating the area used to track suitable spotted owl habitat thresholds. For all NRF management areas and Westside dispersal management areas, SOMUs are derived from the 1997 Watershed Administrative Units. For Eastside dispersal management areas, SOMUs are derived from ¼ Townships. In some instances, SOMU boundaries have been adjusted, in accordance with the HCP, to improve conservation and management opportunities.



As stands mature into suitable NRF habitat, they develop snags and multiple canopy layers.

In general, harvest activities must not increase the amount of time required to achieve habitat goals beyond what would be expected in an unmanaged stand. To ensure that procedures are being followed and goals met, the types and amounts of silvicultural activities in both designated NRF and designated dispersal management areas are tracked.

The Olympic Experimental State Forest (OESF) has a unique goal of learning how to integrate production and conservation across the landscape. To achieve this goal, the northern spotted owl conservation strategy is based on an unzoned forest concept, i.e., a forest in which no special zones are set aside exclusively for either species conservation or commodity production. In the OESF, the strategy of conserving spotted owls by restoring habitat capability is proposed as a working hypothesis regarding the necessary quality, quantity and distribution of potential habitat, accompanied by an approach for managing toward those conditions. The habitat objective is to attain at least 40 percent of each landscape planning unit in the stem-exclusion to old-growth stand development stages and half of that 40 percent (or 20 percent of the Landscape Planning Unit) should attain the understory-re-initiation to old-growth stages.

In the Klickitat Planning Unit, forest health is being degraded by issues associated with stands overstocked with tree species more susceptible to stand-replacing fires, drought, disease, and insect infestations. In addition, some lands originally designated as NRF management areas are not, and never will be, capable of sustaining suitable spotted owl habitat. This makes the original habitat goals difficult to achieve. In April 2004, an amended spotted owl conservation strategy (HCP Amendment No.1; The Klickitat Amendment) was implemented to address these issues in the Klickitat Planning Unit. Field assessments, forest inventory data, and spotted owl demography data were used to create new habitat targets for the area. Four sub-landscapes within the planning unit were created, with habitat targets based on those sub-landscapes. In addition, dispersal management areas in the Klickitat Planning Unit have been renamed desired future condition (DFC) management areas. Klickitat DFC lands have the same habitat commitments as dispersal lands, but are managed by vegetative series, with the goal of maintaining 50 percent of each vegetative series, by sub-landscape, in mature DFC (at least 60 years old). Areas incapable of growing and sustaining habitat, and those better suited for a different habitat classification, have been reclassified.

The Klickitat Amendment also changed the boundaries of the Klickitat and Yakima planning units to include the portion north of the Yakama Nation's lands in the Yakima Planning Unit. Through this change, approximately 23,000 acres of dispersal management area were transferred to the Yakima Planning Unit.

Definitions for Northern Spotted Owl Habitat Types

HABITAT TYPE	HABITAT DEFINITIONS (HCP: IV.11-12) & (WAC 222-16-085)	QUERY USED TO INTERPRET HABITAT DEFINITIONS
HIGH QUALITY NESTING	At least 31 trees per acre are greater than or equal to 21 inches dbh with at least 15 trees, of those 31 trees, per acre greater than or equal to 31 inches dbh.	(LiveTrees ≥ 21" diameter class) ≥ 31 trees/acre **and**
		(Live trees ≥ 31" diameter class) ≥ 15 trees/acre **and**
	At least 12 snags per acre larger than 21 inches dbh	(Snags ≥ 21" diameter class and ≥ 16 ft tall) ≥ 12 trees/acre **and**
	A minimum of 70 percent canopy closure	(Relative Density of Live Trees ≥ 4" diameter class) ≥ 48 **and**
	A minimum of 5 percent ground cover of large woody debris	(Downwood ≥ 4" diameter class) ≥ 2,400 CuFt/Acre
	At least three trees from the above group of 31 trees have broken top	Not in query
TYPE A	A multi-layered, multispecies canopy dominated by large (30 inches dbh or greater) overstory trees (typically 15-75 trees per acre)	(FVS-derived number of canopy layers) ≥ 2 **and**
		(Primary species ≥ 4 diameter class) >10% and (Primary species ≥ 4dbh) ≤ 80% (mulitspec = yes) **and**
		(Live Trees ≥ 30" diameter class) ≥ 15 trees/acre and ≤ 75 trees/acre **and**
	Greater than 70 percent canopy closure	(Relative Density of Live Trees ≥ 4" diameter class) ≥ 48 **and**
	More than two large snags per acre, 30 inches dbh or larger	(Snags ≥ 30" diameter class and ≥ 16 ft tall) ≥ 2.5 trees/acre **and**
	Large accumulations of fallen trees and other woody debris on the ground	(Downwood ≥ 4" diameter class) ≥ 2,400 CuFt/Acre
	A high incidence of large trees with various deformities such as large cavities, broken tops, and dwarf mistletoe infection	Not in query
TYPE B	Few canopy layers, multispecies canopy dominated by large (greater than 20 inches dbh) overstory trees (typically 75-100 trees per acre, but can be fewer if larger trees are present)	(FVS-derived number of canopy layers) ≥ 2 **and**
		Primary species >10% and Primary species ≤ 80% (mulitspec = yes) **and**
		(Live Trees ≥ 20" diameter class) ≥ 75 trees/acre and ≤100 trees/acre **and**
	Greater than 70 percent canopy closure	(Relative Density of Live Trees ≥ 4" diameter class) ≥ 48 **and**
	Large (greater than 20 inches dbh) snags present	(Snags ≥ 20" diameter class and ≥ 16 ft tall) ≥ 1 tree/acre **and**
	Accumulations of fallen trees and other woody debris on the ground	(Downwood ≥ 4" diameter class) ≥ 2,400 CuFt/Acre
	Some large trees with various deformities	Not in query

Definitions for Northern Spotted Owl Habitat Types

HABITAT TYPE	HABITAT DEFINITIONS (HCP: IV.11-12) & (WAC 222-16-085)	QUERY USED TO INTERPRET HABITAT DEFINITIONS
MOVEMENT, ROOSTING, AND FORAGING (MORF)	Forest community dominated by conifers, or in mixed conifer/hardwood forest, the community is composed of at least 30 percent conifers (measured as stems per acre dominant, co-dominant, and intermediate trees)	(Live Conifers ≥ 4" diameter class) ≥ 30% of all live tree/acres **and**
	At least 70 percent canopy closure	(Relative Density of Live Trees ≥ 4" diameter class) ≥ 48 **and**
	Tree density of between 115 and 280 trees greater than 4 inches dbh per acre	(Live Trees ≥ 4" diameter class) ≥ 115 and ≤ 280 trees/acre **and**
	Dominant and co-dominant trees at least 85 feet tall	(Largest 40 live trees/acre) ≥ 85' tall **and**
	Minimum of 5 percent ground cover of large down woody debris	(Downwood ≥ 4" diameter class) ≥ 2,400 CuFt/Acre **and**
	At least three snags or cavity trees per acre that are at least 15 inches	(Snags ≥ 15" diameter class and ≥ 16 ft tall) ≥ 3 trees/acre **and**
	At Least two canopy layers	(FVS-derived number of canopy layers) ≥ 2
SUB-MATURE	Forest community dominated by conifers, or in mixed conifer/hardwood forest, the community is composed of at least 30 percent conifers (measured as stems per acre dominant, co-dominant, and intermediate trees)	(Live Conifers ≥ 4" diameter class) ≥ 30% of all live tree/acres **and**
	At least 70 percent canopy closure	(Relative Density of Live Trees ≥ 4" diameter class) ≥ 48 **and**
	Tree density of between 115 and 280 trees greater than 4 inches dbh per acre	(Live Trees ≥ 4" diameter class) ≥ 115 and ≤ 280 trees/acre **and**
	Dominant and co-dominant trees at least 85 feet tall	(Largest 40 live trees/acre) ≥ 85' tall **and**
	At least three snags or cavity trees per acre that are at least 20 inches	(Snags ≥ 20" diameter class and ≥ 16 ft tall) ≥ 3 trees/acre **and**
	Minimum of 5 percent ground cover of large down woody debris	(Downwood ≥ 4" diameter class) ≥ 2,400 CuFt/Acre
Young Forest Marginal (SAME AS SUB-MATURE EXCEPT FOR SNAG AND DOWN WOOD REQUIREMENTS)	Forest community dominated by conifers, or in mixed conifer/hardwood forest, the community is composed of at least 30 percent conifers (measured as stems per acre dominant, co-dominant, and intermediate trees)	(Live Conifers ≥ 4" diameter class) ≥ 30% of all live tree/acres **and**
	At least 70 percent canopy closure	(Relative Density of Live Trees ≥ 4"diameter class) ≥ 48 **and**
	Tree density of between 115 and 280 trees greater than 4 inches dbh per acre	(Live Trees ≥ 4" diameter class) ≥ 115 and ≤ 280 trees/acre **and**
	Dominant and co-dominant trees at least 85 feet tall	(Largest 40 live trees/acre) ≥ 85' tall **and**
	Snags greater than or equal to 2/acre (greater than or equal to 20 inches dbh and 16 feet in height) OR greater than or equal to 10% of the ground covered with 4 inch diameter or larger wood, with 25-60% shrub cover	(Snags ≥ 20" diameter class and ≥ 16 ft tall) ≥ 2 trees/acre **OR**
		(Downwood ≥ 4" diameter class) ≥ 4,800 CuFt/Acre

Definitions for Northern Spotted Owl Habitat Types

HABITAT TYPE	HABITAT DEFINITIONS (HCP: IV.11-12) & (WAC 222-16-085)	QUERY USED TO INTERPRET HABITAT DEFINITIONS
MOVEMENT	Canopy closure at of least 70 percent	(Relative Density of Live Trees ≥ 4" diameter class) ≥ 48 **and**
	Quadratic mean diameter of 11 inches dbh for 100 largest trees per acre in a stand	(Largest 100 live trees/acres) ≥ 11" Quadratic Mean Diameter (QMD) **and**
	Forest community dominated by conifers, or in mixed conifer/hardwood forest, the community is composed of at least 30 percent conifers (measured as stems per acre dominant, co-dominant, and intermediate trees)	(Live Conifers ≥ 4" diameter class) ≥ 30% of all live tree/acres **and**
	Tree density no more than 280 trees per acres greater than or equal to 3. 5 inches dbh	(Live Trees ≥ 4" diameter class ≤ 280 trees/acre **and**
	Top height of at least 85 feet (Top height is the average height of the 40 largest diameter trees per acre.)	(Largest 40 live trees/acre) ≥ 85' tall
	At least four trees per acre from the largest size class retained for future snag and cavity tree recruitment	Not in query
DISPERSAL	Canopy cover at of least 70 percent	(Relative Density of Live Trees ≥ 4" diameter class) ≥ 48 **and**
	Quadratic mean diameter of 11 inches dbh for 100 largest trees per acre in a stand	(Largest 100 live trees/acres) ≥ 11" Quadratic Mean Diameter (QMD) **and**
	Top height of at least 85 feet (Top height is the average height of the 40 largest diameter trees per acre.)	(Largest 40 live trees/acre) ≥ 85' tall
	At least four trees per acre from the largest size class retained for future snag and cavity tree recruitment	Not in query

The following table describes the suitable habitat types for the various Northern Spotted Owl Management Areas. It also shows the total percent threshold objectives for each Spotted Owl Management Unit (SOMU). Within the Olympic Experimental State Forest (OESF) and South Puget Planning Unit Dispersal areas, these SOMU thresholds are two-tiered or have two threshold objectives. For example, the OESF has a 40 percent overall habitat threshold objective, however it is further refined with an objective of having at least 20 percent of the SOMU in an Old Forest condition with the rest made up of Structural or better habitat.

Suitable Habitat Thresholds by Spotted Owl Management Unit

NSO MANAGEMENT AREA	TOTAL % SOMU THRESHOLD		HABITAT CLASSIFICATION	HABITAT CODE NAME
OESF	40%	At least 20%	Old Forest	Old Forest
				High Quality Nesting
				Type A
				Type B
		20%	Structural Habitat	Sub-mature
				Young Forest Marginal

Suitable Habitat Thresholds by Spotted Owl Management Unit

NSO MANAGEMENT AREA		TOTAL % SOMU THRESHOLD		HABITAT CLASSIFICATION	HABITAT CODE NAME
NRF (NESTING, ROOSTING, FORAGING)		50%		High Quality Habitat	High Quality Nesting
					Type A
					Type B
				Sub-Mature Habitat	Sub-mature
DISP	(Not SPPU)	50%		High Quality Habitat	High Quality Nesting
					Type A
					Type B
				Sub-Mature Habitat	Sub-mature
				Dispersal Habitat	Young Forest Marginal
					Dispersal
	(SPPU Only)	50%	At least 35%	MoRF Plus Habitat	High Quality Nesting
					Type A
					Type B
					MoRF
			15%	Movement Plus Habitat	Sub-mature
					Young Forest Marginal
					Movement

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Marbled Murrelet Conservation Strategy

DNR protects the marbled murrelet and their habitat through the State Trust Lands HCP. When the HCP was signed in 1997, managers had insufficient information to create a long-term conservation strategy for the marbled murrelet. Murrelet ecology and habitat use were not well understood, particularly in relation to nesting habitat in DNR-managed forests. To address this, the HCP specified that an interim strategy be implemented while we conducted inventories, surveys and additional research to support development of a long-term strategy. Following extensive research and input from an independent science team, DNR now has enough information to develop this long-term strategy. Development of the long-term conservation strategy was delayed by budgetary and staffing shortfalls for a time, but resumed as a top agency priority with additional staff in 2011. **Back to Annual Report**

Marbled murrelets nest on large limbs covered with moss or other substances that create a relatively flat platform. Their nests are usually in mature or old conifer forest. Photo courtesy of Tom Bloxton.

Riparian Conservation Strategy

The **State Trust Lands HCP Riparian Strategy** was developed with the specific objectives of:

1) maintaining or restoring freshwater habitat for salmonids (species of fish in the salmon family) on DNR-managed lands, and
2) contributing to the conservation of other species that depend on aquatic and riparian habitats, including wetlands (State Trust Lands HCP pg. IV-55).

This includes providing clean water, shade and large logs for streams, through the use of riparian and wetland management zones. It also includes the prevention of sediment delivery to streams

and wetlands through management standards for road building, unstable slopes, and rain-on-snow areas.

The Riparian Forest Restoration Strategy (RFRS) is a part of the Riparian Strategy that was adopted in 2006. It was developed by a Technical Review Committee consisting of technical staff from DNR, National Oceanic and Atmospheric Administration, U. S. Fish and Wildlife Service, Northwest Indian Fisheries Commission, and the Washington Department of Fish and Wildlife. Riparian forest restoration thinning is designed to restore older forest species and forest structure in streamside forests where historic timber harvest has created even-aged, often over-stocked forest stands. Canopy gaps and "skips"— areas that are left unmanaged—help to increase structural diversity and accelerate the development of habitat. Accelerating the growth of large conifer trees is an important part of the HCP Riparian Forest Restoration Strategy. Over time, these trees will provide shade and nutrient-rich litter-fall for the stream while they are living, and contribute large woody debris to the stream channel when they die and fall over. Large diameter fallen logs in the stream create pools and cover which are important for salmon habitat. Once the riparian forest stand is on a developmental trajectory to reach the older forest structural condition, there will be no further harvest next to the stream.

During an RFRS Implementation Period of three years, thinning in stands 70 years of age or older was addressed on a site-specific basis with the Services. As of 2012, this restriction has been lifted through a **joint concurrence letter** between DNR and the Services.

A Headwaters Conservation Strategy has been developed, and DNR is moving toward adoption. When the State Trust Lands HCP was adopted in 1997, DNR did not have enough information on the functions and protection needs of headwater streams (also known as first-order streams or Type 5 streams) to develop a full strategy. For this reason, Headwater streams are currently managed through an interim strategy that provides protection to headwater streams when associated with unstable slopes and when necessary for water quality, fisheries habitat, stream banks, wildlife, and other important elements of the aquatic system. In addition, the HCP specified that DNR would conduct research on the effects of forest management on headwater streams, in preparation for developing a long-term headwater strategy. The research has been completed, a Headwaters Conservation Strategy is designed, and DNR has begun the steps necessary for adoption and implementation. **Back to Annual Report**

Multiple Species Conservation Strategy

In addition to providing habitat for ESA-listed species, the conservation objectives developed for the HCP were designed to provide appropriate habitat protection for many native species not currently listed or protected under the Endangered Species Act. The HCP also specifies habitat protection for numerous state-listed plant and animal species of concern.

Unique Habitat Objectives

Protection of specific habitats is incorporated into the multispecies conservation strategy for unlisted species and includes identifying and protecting critical habitat types such as caves, cliffs, talus slopes, wetlands, balds, mineral springs, snags, oak woodlands, and large, structurally unique trees. These habitats provide nesting, roosting, hiding, and foraging opportunities for many species.

Adaptive Management Component

Information obtained through research and monitoring and new scientific developments sometimes identifies changes in management practices that would help address the needs of specific species and habitat conditions. For this reason the State Trust Lands HCP includes provisions for a dynamic, scientifically-based adaptive management component that allows continual improvements of its implementation. **Back to Annual Report**

Silvicultural Activities

Silviculture is the means by which many objectives— including HCP objectives and maximization of trust revenue—are achieved on the landscape. Through Silviculture DNR determines the composition and structure of future forests, and therefore the quality of habitat as well as future income.

The department defines silviculture as the art and science of cultivating forests to achieve specific objectives. Objectives, in this context, include desired future stand conditions over a rotation (from one harvest cycle to the next), the portions of landscapes to be sustained in specified forest stand conditions (landscape objectives), and transient conditions sought at the conclusion of activities (activity objectives) in order to direct the development of a forest stand. A rotation is the length of time between when a stand of trees is planted or naturally regenerates and when it is harvested and ready for regeneration once again. A forest management unit is an area of trees and associated vegetation that is ecologically similar enough to allow it to be managed to achieve common objectives.

Silvicultural data for the HCP Annual Reports comes from DNR's Forest Management Planning and Tracking (P&T) database. This database incorporates information related to timber harvests, forest site preparation, forest regeneration (replanting), vegetation and pest management, thinning, fertilization, and pruning. The data can be queried by date, forest management unit, HCP planning unit, habitat type, or other criteria.

Clumps of green trees are left following timber harvests to provide habitat and a seed source for future generations. Sometimes they also protect valuable habitat features such as snags or seeps.

Trends

DNR designs various types of timber harvests and other silvicultural activities on forested state trust lands to achieve specific environmental and economic goals. Many of these activities have been employed since HCP annual reporting began. Some types of activities can be used frequently across landscapes, while others are appropriate only in limited locations under specific conditions.

The levels and types of silvicultural management activities practiced on forested state trust lands are governed by landscape and forest management unit objectives. Emphasis on particular harvest activities may vary from year to year due to market conditions, new policies and procedures, and scientific discoveries implemented through adaptive management. There are a number of environmental and market conditions that influence where and when activities are carried out within the forested landscape.

However, the first decision filter always factors in the biological capability of each specific site, including suitable tree species and the site's productive capacity. The following is a guide to help the reader understand some of these conditions and factors. In turn, this may help in interpreting the data presented in the HCP Annual Reports.

Proper management regimes vary with site conditions. Ecological constraints, such as unstable slopes and critical habitat, dictate which activities are implemented in a given location. All silvicultural activities are applied within a context of specific objectives to achieve ecological outcomes, a long-term sustainable flow of forest products, and other benefits. DNR employees prioritize activities based on available resources and relative benefits.

Economic and fiscal factors also dictate what can be done at a particular time. Budget allocations and market conditions influence the timing and extent of silvicultural activities that are carried out.

Purchasers' timber removals, meanwhile, are driven by two main factors: the harvest contract length and market conditions. Timber stands may be sold in one year, but not harvested until years later. A timber harvest contract length may be as long as five years, but the average length is currently about 18 months.

To complicate tracking, since there is a lag time between changing economic or environmental conditions as well as changes in levels of reported activities, the reader may not see changes for several years. In addition, it generally is true that the first few years of a forest stand's regeneration and establishment are the time of greatest risk as well as opportunity. Seedlings are vulnerable to a variety of environmental factors, but this is also the time when field managers can have the most influence on how the stand will develop over time. Consequently, significant changes in timber harvest volumes will usually be followed by corresponding increases or decreases in the overall level of silvicultural activities that can be tracked over several years. **Back to Annual Report**

Non-Timber Management Activities

Numerous non-timber management activities take place on DNR-managed state trust lands. This section of the HCP Annual Report details the levels of the activities (numbers of sites/permits/leases and acres involved) that DNR agreed to report on when the HCP was approved in 1997. It also discusses recreation and public use activities on state trust lands and the steps we take to minimize the impacts of these activities on the ecological systems. The section concludes with information on DNR's Natural Areas Program, which manages and protects rare native ecosystems, habitat, and unique natural features.

We work continually to improve our methods of tracking and reporting on non-timber activities. As DNR's systems improve, and we are able to collect more accurate data, there may be changes in reporting methods or corrections to our data.

The following are descriptions for the categories of non-timber activities covered in HCP Annual Report, with explanations for trends or noticeable differences in the numbers where possible. In some cases, such differences may be due to improvements in our methods for identifying and tracking the data. **Back to Annual Report**

Special Forest Products

Special forest products are items such as Christmas greens, medicinal plants, and western greens (typically used by florists) that can be harvested from forested trust lands but do not fall in traditional timber or fiber categories. DNR policy is to promote the sale of special forest products where doing so will benefit the trusts and not cause significant damage to the environment. Permits are selectively granted to prevent habitat degradation. As of 2009 DNR lost the ability to accurately report on specific categories of Special Forest Products, due to the loss of program staff dedicated to tracking this information. We cannot at this time distinguish acres leased for Christmas greens from those leased for western greens, for instance. However, improvements have been made in the accuracy of reported acreage involved in Special Forest Product leases as a whole.

Valuable Materials Sales

Rock, sand and gravel (valuable materials) sales are handled under special sale contracts. Most active commercial pits are not in forested areas. Generally, the few commercial contracts on forested trust lands are small sales from pits that are primarily used by DNR for materials used in forest road management.

The number of non-commercial (silvicultural) pits and inactive commercial pits was not tracked until fiscal year 2003, when DNR initiated an inventory of all such pits. Since the initial inventory, changes—such as abandoning pits or creating new ones—have not been consistently tracked. We hope to find the resources to begin tracking and reporting such data more regularly and consistently.

Early in the implementation of the State Trust Lands HCP, the department had a substantial number of rock, sand, and gravel sales, but currently there are few. This primarily is due to two factors: (1) the lengthy contract development process, including requirements for more valuable or longer-term contracts to be reviewed and approved by the Board of Natural Resources; and (2) periodic charges to keep contracts alive regardless of whether or not there are removals. Most rock, sand, and gravel sales are now from private pits, which have fewer time and procedural constraints. Direct sales are one-time agreements that remove only small amounts of a resource (a maximum of $25,000 in value) and don't require Board of Natural Resources approval. Other (non-direct) sales are active for longer periods of time and/or have larger maximum removal value limits.

Prospecting Leases and Mining Contracts

Like oil and gas leases, prospecting and mining leases are simply exploration agreements that allow searching for mineral deposits. A lease must be converted to a contract if the lessee wants to begin active mining operations that could alter habitat, even if they do not result in extraction. Before any surface-disturbing work is conducted, the lessee must submit a plan of operations for review and approval. In 1996, when the HCP was written, there were no 'active' mining operations (meaning activities that actually extract minerals) on lands managed under the HCP, nor have there been any since.

Oil and Gas Leases

Oil and gas exploration leases simply allow a leaseholder to reserve the right to explore for underground deposits. The lessee has the sole and exclusive right to explore for, drill, extract, or remove oil and gas. However, any proposed on-the-ground activities must undergo SEPA review

and have a plan of operations approved by DNR. One of the early steps of this process is acquiring a drilling permit. If the lessee then wants to actively drill or thump (measuring seismological tremors caused by the dropping of large weights or detonation of explosives), he or she must obtain an 'active' lease. Regulations exist to protect water and air quality and any exploration holes must be plugged following use. Any new permits are subject to SEPA review. There has been only one active oil and gas lease involving drilling on lands managed under the HCP (in 1996), and the well has since been abandoned and plugged.

Grazing Permits/Leases

Most DNR-managed grazing takes place on non-forested state trust lands. However, grazing is selectively allowed in forests guided by the HCP. In western Washington, we lease minimal acres of forested land.

The vast majority of grazing on state trust lands is east of the Cascade Crest on both non-forested and forested lands. In eastern Washington, trust land is grazed under permits and leases. Permits cover large acreages and include Resource Management Plans with ecosystem standards that must be met, including specific direction for turnout and removal dates and the number of animals allowed on the range. Leases cover smaller areas, are also guided by a Resource Management Plan and can allow grazing at any time during the year, as long as guidelines in the plan are followed. DNR currently is not able to distinguish forested from non-forested grazing on Eastside lands covered by the HCP. However, as the tracking methodology is refined, this should become possible in the future.

Details of land transactions, including large scale exchanges such as the Central Cascades exchange completed in 2008, can influence which lands will be managed under the HCP and where grazing will be allowed.

Communication Site Leases

Communication site leases allow private and public entities to build new towers or attach communication equipment to existing towers (e. g. cell phone towers). These sites typically are on non-forested mountaintops or along second-growth highway corridors and are less than an acre in size. They are accessed by the same road system as forest management activities and subject to the same management practices.

Special Use Leases

Special use leases are issued for a wide variety of commercial and other uses—primarily on rural trust lands, although they can be on forested, agricultural, or urban lands. "Miscellaneous" is often the best descriptor of these leases. Some examples of uses include: golf courses, small commercial businesses and buildings, commercial recreation facilities, colleges, takeoff or landing sites for paragliding, governmental or public use facilities, honeybee hive sites and stockpile sites. Special use leases do not cover major urban commercial uses, aquatic land uses, or any of the other categories described above. Often, but not always, these leases are for "interim uses," and, as such, contain language that allows for termination should the department wish to take advantage of a "higher and better use" for the land.

These box steps were built as part of a trail restoration project and will help minimize erosion by providing a stable and water-permeable hiking surface.

Recreation Sites

These sites allow public recreation on forested state trust lands as long as it is compatible with state laws and the objectives of the **Policy for Sustainable Forests** and the **State Trust Lands HCP**. A variety of sanctioned recreational activities take place on DNR-managed land including hiking, biking, horseback riding, off-road vehicle use, and camping. The number of sites and acreage reported are only for DNR-sanctioned trails, camping, and picnicking areas. DNR's vision statement for recreation and public access is to: "Manage public and trust lands in a manner that provides quality, safe recreational experiences that are sustainable and consistent with DNR's environmental, financial and social responsibilities". DNR is developing recreation plans for many of the areas it manages. Plans are developed with extensive involvement of local recreation groups and the public, many of whom also volunteer to help maintain trails and campgrounds, and clean up areas. **Back to Annual Report**

Natural Areas Program

Washington State's natural areas protect outstanding examples of the state's extraordinary diversity. These lands represent the finest natural, undisturbed ecosystems in state ownership, often protecting one-of-a-kind features unique to this region. The department's Natural Areas Program currently manages almost 145,000 acres statewide in 54 Natural Area Preserves (NAPs) and 31 Natural Resources Conservation Areas (NRCAs). More than 107,000 of those acres fall within the area managed under the HCP. This system of natural areas was established by the Washington Legislature in 1972 to protect native ecosystems, rare plant and animal species, and unique natural features. The lands protected in the natural areas system include Puget prairies, estuaries, native forests, bogs, ponderosa pine forests, shrub steppe communities, and significant geological features. These lands provide opportunities for research, education and, where appropriate, low impact public use. In addition, these lands provide important contributions toward meeting statewide conservation priorities and to DNR's Habitat Conservation Plan obligations.

Volunteers such as these students pulling invasive Scot's broom (*Cytisus scoparius*) from Mima Mounds NAP are essential to the Natural Areas Program.

Since the HCP was signed in 1997, the Natural Areas Program has protected an additional 62,000 acres of land within the area managed under the HCP and more than 66,000 acres statewide. Washington's natural areas contain habitat for 10 species listed as threatened or endangered under the Endangered Species Act. Eight of these species are known to occur on natural areas within the area covered by the HCP. Outside of the HCP, the Canada lynx (Lynx canadensis) is found in a NRCA in the Loomis area and several natural areas provide suitable habitat for grizzly bears (Ursus arctos horribilis).

Carlisle Bog NAP represents the most diverse and undisturbed example of a sphagnum bog ecosystem and connected lake on the Olympic Peninsula. The site supports populations of the Olympic mudminnow and Makah copper butterfly.

The federally listed species living on natural areas include the largest and healthiest population of the golden paintbrush (Castilleja levisecta), the largest and most viable population of Wenatchee Mountain checker-mallow (Sidalcea oregana

var. calva), more than 15 established territories for the northern spotted owl (Strix occidentalis caurina), and waters that contain listed runs of Chinook (Oncorhynchus tshawytscha), chum (Oncorhynchus keta), steelhead (Oncorhynchus mykiss) and bull trout (Salvelinus confluentus). Ten of our preserves contain occupied marbled murrelet (Brachyramphus marmoratus) sites. At South Nemah NRCA there have been more than 30 marbled murrelet occupancies recorded, including a confirmed murrelet nest site.

Natural areas provide habitat for three federal candidate species. Trout Lake NAP contains the second largest population and highest quality native habitat for the Oregon spotted frog (Rana pretiosa). Washougal Oaks NAP/NRCA protects spawning habitat for coho salmon (Oncorhynchus kisutch). Both the Loomis NRCA and Chopaka NAP support substantial populations of whitebark pine (Pinus albicaulis), recently determined to be a candidate for federal listing.

Our natural areas provide habitat for Oregon spotted frogs (*Rana pretiosa*) and other amphibians. Photo courtesy of W.P. Leonard.

Natural areas also provide habitat for other sensitive species (federal species of concern, state-listed, state candidate, and others) identified in the HCP. This includes the bald eagle (Haliaeetus leucocephalus), which was de-listed from the Endangered Species Act in June 2007. Species whose habitat is protected include butterflies associated with prairie habitat like the Valley silverspot (Speyeria zerene bremnerii) and Puget blue (Icaricia icarioides blackmorei), amphibians that depend on forested talus slopes like the Larch Mountain salamander (Plethodon larselli), birds associated with mountain streams and rivers like the harlequin duck (Histrionicus histrionicus), bats that depend on maternal colonies like the colony found at Woodard Bay NRCA, and mammals that depend on high elevation rocky outcrops and alpine communities like the California bighorn sheep (Ovis canadensis sierrae).

Late seral forests and trees with potential nesting platforms are important features to two of the primary species protected under the HCP, the northern spotted owl and the marbled murrelet. A number of our natural areas were established because of their high-quality native forest ecosystems and are dominated by mature and/or late seral forests. The native forests on these preserves represent some of the highest quality examples of globally imperiled forest ecosystems.

In the Natural Areas Program, there are five high-quality estuaries including three on the coast and two in Puget Sound. These sites protect rare tidal wetland communities. Estuaries also provide important foraging and cover habitat for anadromous fish during the critical transition from a freshwater to a marine environment. In addition, estuaries help dissipate potentially damaging wave energy before it reaches the land, they provide a sink for sediments and wastes derived from both land and sea, and they are some of the most biologically productive systems in the world.

Washougal Oaks NAP/NRCA contains high-quality oak woodland habitat that is home to one of the last populations of the slender-billed white-breasted nuthatch in Washington. We are restoring this landscape by removing competing conifer trees, planting oak seedlings, and replanting native understory species.

Since our inventory of the state's biodiversity is incomplete, the protection of a broad representation of ecological communities also contributes to the conservation of many species. For example, Mima Mounds NAP was originally established to protect unusual geologic formations and high-quality prairie habitat. We recently learned that it also has the only known population of the ground-dwelling lichen Cladonia ciliata in the United States. Similarly, North Bay and Carlisle Bog NAPs were established to protect high-quality wetlands. We later discovered that they both contain populations of the rare Makah copper butterfly (Lycaena mariposa charlottensis).

Our Natural Areas Program is actively working to restore and enhance habitat for special status species on a number of sites. At Mima Mounds and Rocky Prairie NAPs, for example, we are using prescribed fire, invasive species control, and seeding of native grassland plants to restore native prairie habitats that have been heavily fragmented and degraded over most of their range. We are restoring and enhancing oak woodland habitat at two sites – Washougal Oaks NAP/NRCA and Bald Hill NAP - by removing competing conifer trees, planting oak seedlings, and replanting native understory species. In addition, we are restoring Puget Sound estuary and nearshore habitats at Stavis and Woodard Bay NRCA's by removing bulkheads, fill, and creosote-treated structures.

Nearly 280 research, inventory, and monitoring projects have been conducted in natural areas by agency biologists, professors, and students. These projects are helping us identify critical habitat features for species of concern. They are also helping us learn new techniques for protecting and restoring rare ecological communities.

Taken together, this demonstrates the important contribution of natural areas to the protection of biodiversity and to our HCP obligations. **Back to Annual Report**

Road Management Activities

Roads that are improperly constructed or maintained can negatively impact habitat in a number of ways. Such roads can increase slope failure rates, contribute sediment to streams, and create fish passage blockages—potentially harming salmon and other aquatic and riparian obligate species. Current road-building and maintenance practices create better roads that minimize damage, while also allowing us to abandon or improve poorly built roads.

In 2001, state Forest Practices Rules were updated to reflect 'Forests and Fish' legislation. The legislation (passed in 1999) required that by July 1, 2006, all large forest landowners were to have all their forest roads under an approved Road Maintenance and Abandonment Plan (RMAP). The legislation included plans for all roads constructed or used for timber harvest and other forest practices activities after 1974. The legislation also stipulated that all forest roads must be improved and maintained to the standards established in WAC 222-24 by the year 2016. DNR completed a full stream crossing assessment in 2001 and completed the road assessment for all 2.3 million acres of DNR-managed forest lands in 2006. DNR intends to be fully compliant with RMAP standards by 2016.

Under the State Trust Lands HCP, DNR made a commitment to develop and institute a process to achieve comprehensive landscape-based road network management. The major components include:

- minimization of active road density;

- a site-specific assessment of alternatives to new road construction (e. g., yarding systems) and the use of such alternatives where practicable and consistent with conservation objectives;
- a base-line inventory of all roads and stream crossings;
- prioritization of roads for decommissioning, upgrading, and maintenance; and
- identification of fish passage blockages caused by stream crossings and a prioritization of their retrofitting or removal." (DNR 1997, p. IV. 62)

The department accomplishes these objectives through several overlapping planning processes. Among many other issues, Forest Land Planning (completed for the South Puget HCP Planning Unit and currently underway in the OESF HCP Planning Unit) evaluates the overall active road density. Through implementation of forest land plans, individual project-level activities will address the site-specific alternatives to new road construction. Implementation of DNR's RMAP requirements will address the last three components.

As part of the HCP Annual Report requirements, we track and report on the number of road miles constructed (newly built roads); reconstructed (existing roads improved to a timber haul standard); decommissioned (roads stabilized and made impassable to vehicular traffic); or abandoned (roads stabilized and abandoned to forest practices standards); active forest road miles; and total fish barriers removed.

Unlike other activities, road management activities are reported on a calendar year (rather than fiscal year) basis. This is because the end of the fiscal year is at the start of the busiest time of the construction season. A good majority of roadwork is subject to a hydraulic "work window" that limits in- or near-stream work to the summer months (typically June 15 to September 30).
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Rights-of-Way

Right-of-way easements across state trust lands are granted to private individuals or entities for roads, power lines, and pipelines. These easements can be granted if they will enhance trust assets, and if any detrimental effects can be offset or minimized.

Unlike other categories of non-timber activities, utility rights-of-way are not reported on a cumulative basis. Only new easements for the fiscal year are reported —not the total number that are active in that period. DNR has not had a system to tally total utility rights-of-way, primarily because many were granted in the early 1900s and hand-entered on records now in archives. A new tracking system for rights-of-way is currently under development. **Back to Annual Report**

Land Transactions

DNR's Land Transactions Program is designed to reposition trust lands for better long-term management and increased revenue for each of the state trusts. Repositioning simply means disposing of properties that don't fit the department's management strategies and acquiring more suitable replacement properties. When parcels are sold at public auction or transferred (sold) to other public ownership, the proceeds are used to acquire replacement lands for the trusts, to keep the trust 'whole'.

Lands identified to transition out of are often better suited to other public benefits, such as parks or habitat for rare native species. We also seek to consolidate our forest landscapes, which allows

for more cost-effective management and offers opportunities to optimize trust revenue while maintaining habitat and allowing public recreation as appropriate.

Land transactions affect the amount of habitat or potential habitat on DNR-managed forested state lands. Transactions may be carried out to consolidate forested state ownership in certain areas, often by trading with owners of adjacent lands for scattered DNR-managed parcels elsewhere. State trust lands also may be transferred out of trust ownership into protected status as Natural Area Preserves (NAPs) or Natural Resource Conservation Areas (NRCAs)—both part of DNR's Natural Areas Program. Another option is for trust lands to be transferred to other government agencies to be used as parks or open space or for public facilities. When this happens, the trust is compensated at fair market value, and replacement properties are acquired to maintain trust assets over time. Acquired lands are assessed for inclusion as State Trust Lands HCP permit lands (meaning they are managed subject to the commitments in the HCP); whether they should be designated as northern spotted owl nesting, roosting, foraging (NRF) or dispersal/desired future condition (DFC) management areas and their potential role in other HCP conservation strategies.

Some lands have important social or ecological values and are best managed to protect these special values and uses, rather than for income production. When that is the case, the lands may be candidates for the **Trust Land Transfer Program**, which applies only to Common School Trust lands. Through this program, land is transferred to Washington Department of Fish and Wildlife; the State Parks and Recreation Commission; county government; city government; Natural Area Preserves; or Natural Resource Conservation Areas. The value of the timber (which is not cut) is given to the common school construction account, which helps fund K-12 schools statewide. The value of the land is used to purchase replacement property for the trust. Lands transferred to the Natural Areas program are retained under the HCP. Transfers to entities outside of DNR are evaluated for their HCP conservation values and if their value is very important to the HCP, they are either not transferred or they receive a deed restriction stipulating their continued management under the HCP. Assigning a deed restriction is rarely used by DNR because of the complexities in assuring compliance with the HCP on non-DNR-managed lands. **Back to Annual Report**

Monitoring and Research

Monitoring and research provide information necessary to improve the implementation and effectiveness of our conservation strategies in the State Trust Lands HCP, helping us document how well our plans and actions are working to achieve our desired outcomes. The information gained can then be used to adjust or adapt our management practices as needed.

Sound application of silvicultural and ecological knowledge, creative ideas, and reliable data are needed to develop innovative forest management practices capable of achieving the business and ecological objectives of the HCP.

Since the HCP was adopted in 1997, there have been advances in terms of understanding the biology of northern spotted owls, marbled murrelets, and other species addressed by the HCP. However, much remains to be learned, and new systems and techniques continue to be developed and tested. Research supports the completion of conservation strategies, tests promising alternatives to current methods, and also contributes to the ecological foundation of our management.

Budgetary constraints have restricted the research and monitoring efforts of late. However we continue to work within the confines prescribed by funding, and look forward to greater flexibility in the future.

A system consisting of three types of monitoring—implementation, effectiveness, and validation—has become a common organizational framework for monitoring programs in forest management.

- Implementation monitoring determines whether or not the HCP is being implemented properly on the ground. It is sometimes also referred to as compliance monitoring.
- Effectiveness monitoring determines whether or not the HCP strategies are producing the desired habitat conditions.
- Validation monitoring determines whether or not a certain species responds to the desired habitat conditions as anticipated. **Back to Annual Report**

Implementation Monitoring

The HCP requires DNR to monitor implementation of the conservation strategies, to ensure that the physical outcome of our management activities matches our intention as described in the HCP. Conservation strategies are selected for implementation monitoring based on a number of criteria which may include the level of risk or uncertainty associated with the strategy, the level of management discretion, the cost and timeliness of monitoring results, new information, and input from the Federal Services and DNR managers. Examples of monitoring projects include monitoring of the large, structurally unique trees left on timber sales following harvest, monitoring for compliance with the marbled murrelet interim conservation strategy and the northern spotted owl strategy, and monitoring of wetland and riparian management areas. **Back to Annual Report**

Effectiveness Monitoring and Research for HCP Conservation Strategies

Effectiveness monitoring documents changes in habitat conditions, including general forest structure, specialized habitat features and spotted owl prey populations that result from timber harvest and other forest management activities. Only habitat areas addressed by the conservation strategies are monitored for effectiveness. Effectiveness monitoring has been in a hiatus since the economic recessions of 2008-2009.

The following are examples of past areas of focus, which will be revisited when funding becomes available. Information from this monitoring increases our ability to understand the influence of land management on aquatic and upland habitat conditions and effectively implement the conservation strategies to reach the goals of the HCP.

Riparian Conservation Strategy Effectiveness Monitoring

The objectives of riparian monitoring and research fall under four main categories:

- **Riparian forest restoration management:** Provides information on proper management to achieve older stand conditions in riparian and wetland areas by testing existing and promising alternative approaches to integrating biodiversity-type thinning into our management options.
- **Headwaters conservation:** Supports the development and future implementation of the headwaters conservation strategy, including assessing the strategy's effectiveness.
- **Riparian forest integrity:** Supports our understanding of the loss of riparian area integrity due to blown down trees using long-term measurements of wind throw.

- **In-stream conditions:** Provides linkage between management techniques in riparian management zone forests and in-stream habitat conditions, habitat trends, and water quality. **Back to Annual Report**

Northern Spotted Owl Conservation Strategy Effectiveness Monitoring

The objective of northern spotted owl research and effectiveness monitoring is to help us better understand the habitat needs of the owl, and how to effectively manage forest stands and landscapes to create and sustain suitable habitat. In addition, this work supports the adaptive management goals of the spotted owl conservation strategy, such as developing better stand- and landscape-level habitat definitions.

Olympic Experimental State Forest Research and Monitoring Program

The Olympic Experimental State Forest (OESF) occupies 270,000 acres of state trust lands on the western Olympic Peninsula.

The OESF is unique among the forested trust lands in management and purpose due to its strong emphasis on experimentation. DNR manages the OESF with the long-term vision of a commercial forest in which both revenue generation for the trust beneficiaries and ecological health are maintained though integration of forest production activities and habitat conservation. The State Trust Lands HCP conservation strategies in the OESF are based on an experimental concept of an "unzoned" forest—that is, a forest without specific areas deferred from timber management.

Monitoring, research, and information sharing are the basis for the experimental management. Adaptive management—a formal process of improving land management practices in response to new information—is a key commitment in the OESF. HCP Annual Reports detail any changes to the program, research findings or adaptive management developments as they apply to any given year.

Past and Current Research

The Olympic Experimental State Forest (OESF) is a place for applied research into innovative silviculture techniques, wildlife habitat development, and riparian restoration. Field experiments provide invaluable knowledge of the relationship between forest management and ecosystem functions, thus helping DNR and other land managers to continuously improve forest management based on sound science. For more information on OESF research see **DNR's State Trust Lands OESF Webpage.**

Management policy direction for management of the OESF is provided by the **1997 State Trust Lands HCP** and the **2006 Policy for Sustainable Forests**. The policies in these documents are implemented through a series of planning processes, such as the sustainable harvest modeling, forest land planning and timber harvest scheduling.

A **forest land plan**, currently under development, is intended to guide management activities in the OESF, the majority of which are timber harvests. Through the planning process, DNR identifies local habitat conservation goals and natural resource issues and creates strategies to address them. Much of the focus of the HCP's conservation efforts through the State Trust Lands HCP is on riparian habitat maintenance and restoration. **Back to Annual Report**

Adaptive Management

The HCP's adaptive management process allows changes to our forest land management when results from our monitoring programs or new information from the scientific literature indicate that such changes are warranted. For example, adaptive management has resulted in management modifications such as the Riparian Forest Restoration Strategy, the Administrative Amendment to the Northern Spotted Owl Conservation Strategy for the Klickitat HCP Planning Unit, and a legacy tree procedure for eastern Washington that protects old-growth trees. **Back to Annual Report**

Other Programs

Forest Certifications

Forest certification is a confirmation process conducted by an independent third-party audit team that verifies forest management practices against a set of standards demonstrating environmentally responsible, socially beneficial and economically viable practices. It's also known as 'green certification'. The 'green certified' label represents a promise that harvesting of timber and other forest management activities are conducted in ways that maintain the forest's biodiversity, productivity and ecological processes.

Forest Stewardship Council™ (FSC®) is an independent, non-profit organization that promotes responsible management of the world's working forests through the development of forest management standards, a voluntary certification system, and trademarks that provide recognition and value to products bearing the FSC label in the marketplace. FSC standards ensure forestry is practiced in an environmentally responsible, socially beneficial, and economically viable way.

Sustainable Forestry Initiative, Inc. is an independent non-profit organization internationally endorsed and accepted around the world. The *Sustainable Forestry Initiative® (SFI®)* program is based on the premise that responsible environmental behavior and sound business decisions can co-exist. Its three-chamber Board of Directors governs all aspects of the SFI program, with equal representation from the environmental, economic and social sectors.

Currently, all DNR-managed forested state trust lands in Washington State are certified under the Sustainable Forestry Initiative® (SFI®) program standard (2.1 million acres). Included in that number, about 166,000 acres are also certified under the Forest Stewardship Council™ (FSC®) Forest Management Standard. These FSC-certified forests are located within DNR's South Puget Habitat Conservation Plan Planning Unit (located in King, Pierce, Thurston, Kitsap, and Mason Counties). **Back to Annual Report**

Appendix B:

Glossary of Terms used in DNR's HCP Annual Reports

Abandoned road: a road that is stabilized and removed from use to state forest practices standards, including removing water crossings, providing erosion control, and making the road impassible to vehicles.

Activity objective: a measurable and possibly transient condition sought at the conclusion of an activity, such as a certain number of trees left following a timber harvest to serve as habitat and a seed source.

Adaptive management: a process of periodically reviewing and adjusting management practices based on feedback from internal and external research and monitoring.

Aerial herbicide: application of herbicides from a helicopter, or sometimes a plane, to achieve site preparation or vegetation management objectives.

Aerial pesticide: application of an insecticide, herbicide or other pesticide from a helicopter or airplane.

Animal repellant: chemicals or other products applied to discourage animals from damaging seedlings.

Biosolids: the nutrient-rich organic materials resulting from the treatment of sewage sludge. When properly treated and processed in a sewage treatment facility, biosolids can be safely applied as fertilizer to maintain productive soil and stimulate tree growth.

Blowdown: (windthrow) a tree that has been knocked over or had its top blown out by wind.

Broadcast burn: allowing prescribed fire to burn over a designated area to achieve site preparation or vegetation management objectives.

Certification: see forest certification.

Clearcut: according to Washington Forest Practices rules, a 'clearcut' is a harvest method in which the entire stand of trees is removed in one timber harvesting operation. From the inception of the State Trust Lands HCP through fiscal year 2008, this term was used to describe 'variable retention harvest' activities on DNR managed lands (see glossary). Although thousands of acres were reported by DNR as having been 'clearcut' during the first decade of the HCP, in fact the vast majority of these harvests met the definition for 'variable retention harvest'. From 2009 on, few acres have been reported as 'clearcuts'.

DBH: diameter at breast height, which is the diameter of a tree measured 4.5 feet above the ground on the uphill side of the tree.

De minimis: a legal term for a level of activity that is too small or insignificant to be concerned about.

Decommissioned road: a road made impassible to vehicles.

Demography: the study of populations or communities, including births, deaths, movement, and distribution.

Desired future condition (DFC): A desired future condition is a set of parameters that can be compared to current conditions, showing any management changes needed to achieve specific goals. In the Klickitat HCP Amendment, DFC habitat represents a sustainable set of stand characteristics (canopy closure level,

maximum tree height, etc.) that could realistically be achieved in a 60-year old stand that has been properly managed.

DFC: see desired future condition.

Direct sale: a one-time agreement that removes only small amounts of a resource such as gravel or trees (a maximum of $25,000 in value) from DNR-managed lands and is not subject to public auction or advertisement.

Dispersal habitat: habitat used by northern spotted owls when moving from one area of nesting, roosting, and foraging habitat to another, often to establish new breeding sites.

Dispersal: the movement of an animal from one sub-population to another, or movement from one area to another, often to establish a new nesting area.

Easement: permission given by one person or business to another, allowing the first to access their property by crossing through property owned by the other.

Ecoregion: an area with generally similar ecosystems and types, quality, and quantities of environmental resources. It is designed to provide a spatial framework for research and monitoring of ecosystems and their components.

Effectiveness monitoring: for the HCP, a system used to determine whether or not a management plan and its specific strategies are producing the desired habitat conditions.

Endemic: a species that is a native of, prevalent in, or confined to a specific region.

Even-Aged Management: A set of final harvest systems defined as a method to "regenerate a stand with a single age-class" (Society of American Foresters). For purposes of managing forested state trust lands, even-aged includes final harvest systems of 'clearcut', seed tree, variable retention harvest (VRH), and shelterwood.

Final harvest: The harvest that signifies the end of a rotation by harvesting trees within a FMU in order to make room for regeneration of a new stand.

First order stream: a stream that does not have any other streams intersecting or feeding into it.

Forest certification: an confirmation process by an independent auditor that shows that a landowner manages forests by a set of standards that demonstrate environmentally responsible, socially beneficial, and economically viable practices. It is also known as 'green' certification.

Forest fertilization: ground or aerial-based fertilization of forest stands using chemical fertilizers or biosolids to enhance growth.

Forest land planning: a DNR process—focused at the HCP planning unit-scale—to integrate social-cultural, economic, and ecological issues into management strategies for forested state trust lands.

Forest management unit (FMU): a forested area with conditions that are ecologically similar enough to allow it to be managed to obtain specific objectives; it is the unit for which a silvicultural prescription is written.

Forest practice(s): any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber or forest biomass, including but not limited to: road and trail construction, harvesting, final and intermediate, pre-commercial thinning, reforestation, fertilization, prevention and suppression of diseases and insects, salvage of trees and brush control.

Forest Practices: the administrative branch of the Washington DNR responsible for regulating forest practices activities on all state and private forest lands.

Grazing lease: a DNR lease agreement covering smaller areas of land (as compared to the larger rangeland of a grazing permit) which includes a Resource Management Plan to protect natural resources. It allows grazing at any time of year as long as the plan's guidelines are followed.

Grazing permit: a DNR agreement covering large areas of land that includes a Resource Management Plan containing specific details regarding the number of animals allowed as well as when the animals may be on the land.

Ground herbicide: ground-based applications of herbicides used to achieve site preparation or vegetation management objectives. Using ground herbicides allows for application in smaller work areas, thus avoiding spraying areas where herbicides are not desired (i.e., streams, wetlands, and adjacent properties).

Ground mechanical: in forestry, using mechanized equipment to achieve site preparation objectives.

Habitat conservation plan (HCP): a long-term management plan authorized under the Endangered Species Act to conserve threatened and endangered species across a large landscape while allowing activities to occur under specific conditions.

Hand planting: in forestry, planting seedlings of various species or species mixes.

Hand-cutting: in forestry, using hand-held equipment to cut stems of existing vegetation to achieve site preparation or vegetation management objectives, such as removing invasive species.

HCP permit lands: lands that are managed subject to the commitments in the State Trust Lands Habitat Conservation Plan.

Headwater stream: a small, first or second order stream that forms the beginning of a river. It is often seasonal and forms where saturated ground flow first emerges as a recognizable watercourse.

Implementation monitoring: a form of monitoring that determines whether or not a management plan (e.g. an HCP) or its components are implemented as written.

Inholding: a parcel of land owned by one party that is entirely surrounded by another ownership. In terms of DNR land transactions, it generally refers to private land entirely surrounded by state-owned property.

Landscape objective: specific stand conditions to be obtained in part or all of a landscape, usually laid out in a plan that specifies the management activities needed to achieve this goal.

Landslide hazard zonation: a screening tool in which watershed-scale maps are created that show and describe all areas of potentially unstable slopes in a watershed as well as potential mitigation measures to minimize damage.

Large, structurally unique tree: a tree that is tall and/or has a large diameter and contains structural elements which are important for habitat, such as a hollow trunk, broken top, open crown, and large strong limbs. During a timber harvest, DNR leaves such trees to provide habitat and a source of seeds to help develop a new stand.

Late rotation thinning (older stand thinning): a partial cut timber harvest that extends the rotation age of a stand to generally more than 80 years, or achieves a visual or habitat objective that requires larger trees. Stands eligible for 'late' thinning are typically 45 to 70 years old and contain diverse sizes of trees.

Leave tree: A live tree left on a timber sale after harvest, intended to provide habitat and structure in the developing stand.

LiDAR: short for Light Detection and Ranging, it is a remote sensing technology that uses lasers to detect distant objects and determine their position, velocity, or other characteristics by analyzing reflections. It has a wide variety of uses, including measuring tree canopy heights, making topographical maps, and mapping floodplains.

Marbled murrelet management area: Proposed areas managed to protect occupied sites and develop future marbled murrelet habitat in areas that are not occupied. More information on marbled murrelet habitat can be found **here.**

Natural Area Preserve (NAP): a state-designated area that protects a high-quality, ecologically important natural feature or rare plant and animal species and their habitat. It often contains a unique feature or one that is typical of Washington State or the Pacific Northwest.

Natural regeneration: allowing naturally produced seedlings to grow after harvest and produce a new forest without human intervention. DNR assesses success by carrying out a thorough regeneration survey of the stand.

Natural Resources Conservation Area (NRCA): a state-designated area managed to protect an outstanding example of a native ecosystem or natural feature; habitat for endangered, threatened, or sensitive species; or a scenic landscape.

Nesting, roosting, and foraging (NRF) habitat: a forested area with the right forest structure, a large enough size, and adequate food to meet the needs of a nesting pair of northern spotted owls.

'No role' lands: a term used by DNR's Land Transactions Program to refer to lands not designated as Nesting, Roosting, and Foraging (NRF), dispersal, or desired future condition (DFC) and thus having no role in spotted owl management under the State Trust Lands HCP.

Non-commercial pit: a rock, sand, or gravel pit used to supply materials used in DNR's silviculture-related activities, primarily building forest roads.

NRF: see nesting, roosting, and foraging habitat.

Oil and gas lease: an agreement that allows the leaseholder to reserve the right to explore for underground oil and/or gas deposits on state land. Before active drilling or thumping can occur, the proposal must undergo SEPA review and have a plan of operations approved by DNR.

Overstory (upper canopy): the upper canopy in a multi-canopy stand.

Pest management: treatments or management decisions designed to prevent pest populations from reaching levels that present an unacceptable risk of damage to forest stands.

Phased patch regeneration cut: an even-age timber harvest method using small patch cuts (1 to 5 acres) to progressively harvest and regenerate a single stand over a period of up to 15 years. Several separate patches are simultaneously harvested within a forest management unit (FMU). After an adequate green-up period (5-10 years), additional patches are harvested and the process is repeated until the FMU is completely harvested.

Pile and burn: a process where logging 'slash' is placed in piles, generally using mechanized equipment, then the piles are burned under controlled conditions.

Planning unit: in the State Trust Lands Habitat Conservation Plan, it is a management unit based on large watersheds. The roughly 1.8 million acres managed under the HCP are divided into 9 HCP planning units to allow for more efficient planning and management.

Pre-commercial thinning: removal of some trees in a stand, not for immediate financial gain, but rather to reduce stocking to concentrate growth in more commercially desirable trees.

Prospecting and mining lease: an exploration agreement that allows the holder to search for mineral deposits on state lands; if the leaseholder wants to begin active mining operations (extraction and removal of valuable materials) that could alter habitat, they must convert the lease to a contract which includes a plan of operations and undergoes SEPA review.

Radio telemetry: a tracking system where wildlife are outfitted with collars that transmit individual signals that can be monitored to track their movement.

Relative density (RD): a mathematically derived parameter that indicates the level of intra-stand competition between trees, and consequently, a theoretical optimal range for thinning. RD guidelines for thinning vary by species and sometimes other factors, such as climatic zones. A commonly used version of RD is formally known as Curtis' RD after Bob Curtis, USDA-Forest Service biometrician who developed the measure.

Reclassified habitat: Two classes of marbled murrelet habitat, identified based on a predictive model:

1. Marginal habitat: those lands expected to contain a maximum of five percent of the occupied sites on DNR-managed lands within each planning unit. These areas were made available for harvest. All known occupied sites were deferred from harvest, and were not included in this habitat designation.
2. Higher-quality habitat: in contrast to marginal habitat, this is defined as those lands expected to contain at least 95% of the occupied sites on DNR-managed lands within each planning unit. This habitat is frequently referred to simply as "reclassified habitat. "

Recreation plan: a DNR document for a forest block or landscape outlining what types of recreation are appropriate in what portions of that landscape, as well as what facilities are needed. It includes broad management guidelines and a plan to implement them.

Regeneration: the act of renewing or re-establishing tree cover in a forest by establishing young trees through natural seeding or planting sites—usually those sites that were harvested or burned in a wildfire.

Repositioning: a land transaction process in which DNR exchanges, sells, or transfers state trust properties, using the proceeds to acquire more suitable property for the affected trust(s). Repositioning occurs on lands that do not fit with management strategies or that are not appropriate for long-term trust revenue production.

Riparian desired Future Condition (RDFC): In the Riparian Forest Management Strategy, the RDFC refers to six measureable target stand conditions that are intended to eventually develop into the Fully Functional stand
development stage.

Riparian management zone RMZ): a buffer of trees and shrubs applied alongside a stream to protect the stream and habitat for salmon and other species. Where necessary, DNR also applies a wind buffer on the windward side of the stream following timber harvest to protect the riparian buffer from wind damage.

Road construction: the building of new roads in compliance with DNR policy and state forest practices standards.

Road maintenance and abandonment plan (RMAP): a plan that covers all forest roads on a landowner's property constructed or used for forest practices after 1974. It is based on a complete inventory that also shows streams and wetlands adjacent to or crossed by roads. The plan lays out a strategy for maintaining existing roads to meet state standards and shows areas of planned or potential road abandonment.

Road reconstruction: a process of bringing existing roads back to drivable conditions in compliance with DNR policy and state forest practices standards.

Rotation: the length of time between when a stand of trees is planted or naturally regenerates and when a "final harvest" occurs.

Salvage cut: a type of timber harvest used to log trees that are dead, dying or deteriorating due to fire, insect damage, wind, disease or injuries.

Seed tree intermediate cut: the first timber harvest in a series conducted as part of the even-aged seed tree silvicultural harvest system. The purpose is to provide a desirable seed source to establish seedlings. As many as 10 trees per acre may be left following this harvest; once the new trees are established, some of these seed trees may be harvested.

Selective product logging: (selective cutting) a timber harvest that removes only specific species from certain size classes which are of high value. This typically is a pole or cabin log sale or removal of individual high value trees.

SEPA: see State Environmental Policy Act.

Seral: relating to the stages of an ecological sere.

Sere: the sequential stages in forest succession; the gradual replacement of one community of plants by another.

Shelterwood intermediate cut: the first timber harvest in a series conducted as part of the even-age shelterwood harvest system. The purpose is to provide shelter (typically shade) and possibly a seed source for the seedlings that are regenerating in the stand. As many as 20 trees per acre may be left following this harvest, generally dispersed across the stand.

Shelterwood removal cut: the second or final harvest in a series of harvests conducted as part of the even-aged shelterwood harvest system. The purpose is to remove overstory trees that create shade levels that are too high to allow the new understory to thrive.

Shielding or fencing: using a physical barrier to prevent animals from entering an area and damaging trees or other resources.

Silvicultural pit: a rock, sand or gravel pit used exclusively for construction of DNR forest roads and timber sale landings. Silvicultural pits are distinct from commercial pits, from which DNR sometimes sells rock, sand or gravel, either through a one-time direct sale or a longer term lease.

Silviculture: the art and science of managing or cultivating trees and forests to achieve particular goals and objectives.

Site preparation: activities performed to increase the probability of successful regeneration in a harvested unit by reducing slash and/or undesirable plants that would compete with seedlings for nutrients, water, and light. Site preparation may be performed concurrent with logging (by, for example, pulling up and disposing of brush clumps), through piling and burning logging slash, through broadcast- or underburning logging slash, by manually cutting undesirable vegetation, by application of herbicide (aerial or

ground) to undesirable tree and brush species prior to planting, or other methods or combinations of methods.

Slash: The residue, e.g., tree tops and branches, left on the ground after logging or accumulated as a result of a storm, fire, girdling, or delimbing.

Smallwood thinning: a partial cut timber harvest in young stands (typically less than 40 years of age). Smallwood thinning maintains or enhances the stand's growth potential, and improves the quality of the remaining trees.

Special forest products: items that can be harvested from forests, but do not fall in traditional timber or fiber categories, such as Christmas trees and boughs, medicinal plants, and floral greens.

Special use lease: a DNR lease for state trust lands that is issued for one of a wide variety of commercial or other uses, often best described as 'miscellaneous' uses (e.g. golf courses; paragliding landing sites; and public use facilities).

Stand: a group of trees that is similar enough in composition, structure, age, spatial arrangement, or condition to distinguish it from adjacent groups of trees.

Stand development stage: a developmental phase for a forest, defined using a classification system based on the structural conditions and developmental processes occurring within a forest stand.

State Environmental Policy Act (SEPA): a process for reviewing proposals that require permits or other forms of agency approval. It requires government agencies to consider the potential environmental consequences of their actions and incorporate environmental values into their decision-making processes. It involves the public and provides the agency decision-maker with supplemental authority to mitigate identified impacts.

Take: as used in the Endangered Species Act, refers to harming, hunting, wounding, collecting, capturing, or killing an endangered or threatened species or disturbing habitat in a way that disrupts a species' normal behavior.

Temporary retention first cut: a partial cut timber harvest in which selected overstory trees are left for a portion of the next rotation. Shelterwood and seed tree harvests are traditional examples with relatively short retention periods. Habitat objectives increase the length of retention periods up to the time of precommercial or smallwood thinnings. The purpose of this harvest method is to retain overstory trees without diminishing establishment of a new stand. Two-aged stands can be an outcome when some level of overstory is left through the entire rotation.

Thumping: The measurement of seismological tremors caused by dropping large weights or by detonating explosives, used when exploring for oil or gas deposits.

Trust land transfer program: a program in which Common School trust land is transferred from DNR to another public agency or conservation program. The state legislature provides the value of the timber (which is not cut) to the Common School Construction account to build K-12 public schools. The value of the land is placed in an account used to purchase replacement property for the school trust. Land can be transferred to the State Parks and Recreation Commission; Washington Department of Fish and Wildlife; a county or city government; or the state Natural Areas Program.

Trust lands: DNR-managed state lands held as a fiduciary (financial) trust and managed to benefit specific trust beneficiaries (public K-12 schools and universities; capitol buildings; and counties and local services such as libraries).

Trust: a legal term for a relationship where one person, company, or entity (the trustee) holds title to a property and/or manages it for the benefit of another person, company or entity (the beneficiary).

Two-age management–Westside: an even-age harvest method that is essentially the same as a temporary retention harvest except that the overstory trees are not removed until the time of the planned harvest of the younger component of the stand.

Uneven-aged management: A planned sequence of treatments designed to regenerate a stand with three or more age classes (Society of American Foresters).

Validation monitoring: for the HCP, a data-collection system that determines whether or not certain species respond as expected to habitat conditions created by following a management plan and its strategies.

Variable density thinning (VDT): thinning to create a mosaic of different stand densities, with canopy openings generally between 0.25 and 1 acre that capitalizes on landforms and stand features. DNR uses variable density thinning to encourage development of structural diversity in areas where spotted owl habitat is needed or to meet other objectives. Diversity is created by thinning to different residual tree densities, retaining large trees, and, in some cases, adding down woody debris and snags.

Variable retention harvest (VRH): An approach to harvesting based on the retention of structural elements or biological legacies (trees, snags, logs, etc.) from the harvested stand for integration into the new stand to achieve various ecological objectives. The following threshold targets apply under the State Trust Lands HCP:

- Retention of at least 8 trees per acre. Of these:
  - At least 2 per acre are suitable for wildlife, and are from the largest size class
  - At least 3 per acre are snag recruits
  - At least 3 per acre are snags, provided that safety requirements are met; if snags are not available, then 3 live trees will be retained
- There are at least 2 down logs per acre of largest size class (but at least 12" on small end by 20' long).

Vegetation management: using hand-cutting, herbicide, mechanical, or other means to remove undesirable competing vegetation in a stand after planting but before seedlings become fully established.

Washington Administrative Code (WAC): administrative regulations, or rules, adopted by state agencies to enact legislation and **RCWs.**

Windthrow (blowdown): a tree that has been knocked over or had its top blown out by wind.

Map: OESF Riparian Status & Trends Monitoring Sites

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