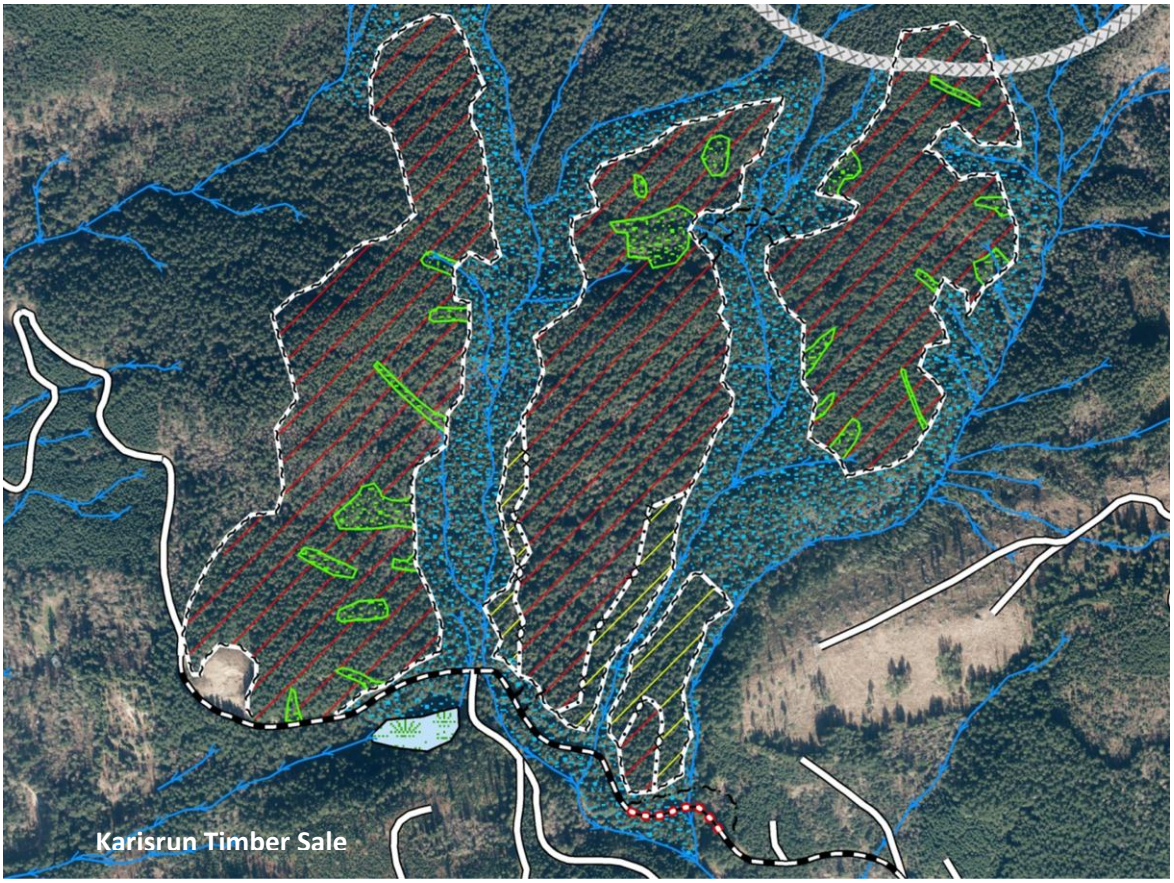
NATURAL RESOURCES

Trust Lands
Habitat Conservation Plan
2011 Annual Report



For Fiscal Year 2011
Published December 2011

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

Cover aerial photograph

Example of forest management under the trust lands Habitat Conservation Plan (HCP)

The Karisrun Timber Sale is a 346-acre management unit in the South Puget HCP Planning Unit. The sale design includes 190 acres of variable retention timber harvest, and a 17-acre riparian thinning. Almost half, 45 percent, of the management area is protected in either riparian and wetland areas (144 acres) or in wildlife leave tree areas (12 acres).

As with every timber sale managed under the trust lands HCP, 30 individual conservation strategies were evaluated in planning Karisrun. On this particular sale, marbled murrelet timing restrictions will be in effect for any activity occurring within one quarter of a mile of the northern portion of the timber sale due to potential but unverified presence of marbled murrelet habitat nearby. 17 acres of the 144-acre riparian management zone (RMZ) will be thinned to maintain vigorous tree growth, increase wind firmness and develop a diverse understory plant community. Within the managed RMZ, 51 trees will be felled to supplement in-stream wood for aquatic species habitat, and 34 snags will be created for upland species habitat. Road revisions associated with this timber sale include removing and replacing two culverts with an 85-foot bridge in order to allow fish passage to more than half a mile of stream habitat. The timber sale provides the funds to upgrade roads that are heavily used for recreation. Timing of road construction is restricted to minimize disruption of recreation activities for people who use the forest.

The timber sale design protects the historical site of a 1924 fatal train wreck located within the management unit. A segment of the much loved Tiger Mountain Trail located on one of the 1920s logging railroad grades will be closed temporarily, then reopened once it is safe and cleared of logging debris. The revenue from this particular timber sale is split between county services and education in King County, and Washington State University.

As with all DNR forest management on the Westside, this sale is governed by the 2006 Policy for Sustainable Forests (PSF) and by the 1997 state trust lands HCP. In addition, about a dozen state statutes, ranging from the Forest Practices Act to the Growth Management Act, govern management activities on DNR-managed trust lands. Statewide activities are also covered under the Sustainable Forestry Initiative® (SFI®) forest certification program standard. In addition, activities within the South Puget Planning Unit are covered under the Forest Stewardship Council® (FSC®) Forest Management Standard.

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Forest Resources and Conservation Division

WASHINGTON STATE DEPARTMENT OF
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Introduction

Background information on the Trust Lands HCP

This report is produced annually as a part of the Washington Department of Natural Resources trust lands Habitat Conservation Plan (HCP) commitments that are outlined in the HCP Implementation Agreement. The intended audience is the US Fish and Wildlife Service and the National Oceanic and Atmospheric Administration (Federal Services), and other interested parties. For more information on the HCP Implementation Agreement, please see the **Trust Lands HCP webpage.**

Report structure

Our efforts to streamline the trust lands Habitat Conservation Plan (HCP) Annual Report continued in 2011, in light of reduced staffing for report production. In the past two years, much of the background information on the trust lands HCP was eliminated from the reports to keep them concise. Prior to that, this information had been provided for readers less familiar with the HCP and its various elements. This year, the background information has been re-introduced in the form of an appendix. This material is accessible in its entirety, and also is accessible as links within each subject area of the report. For instance, clicking on the "background information" link at the top of this section will take the reader to a brief description of what is contained in the Annual Report and DNR's HCP commitments. To return to the Report, click on the "Back to Annual Report" link. This link will return the reader to the annual report, to the last section viewed.

HCP Program Overview

More about the Trust Lands HCP

Challenges for the Trust Lands HCP Program in 2011

The department continues to recover from the broad budget reductions of 2009. During this time we lost multiple key staff positions in our Research and Monitoring Section as well as several wildlife biologist field positions in our regional offices and headquarters. We also continue to experience high turnover in staff in both Olympia and our Regional offices challenging our ability to maintain a high level of familiarity and knowledge of HCP conservation strategies and their implementation. On the positive side, we are developing a new training approach to deliver the most critical and important information to the field. We also have filled or are in the process of refilling several key research and monitoring positions to help meet our HCP related commitments, although funding levels for Research and Monitoring still remain below pre-2009 levels.

Potential Long-term Habitat Impacts due to Deferrals of Pre-commercial Thinning and Vegetation Management

Both pre-commercial thinning (PCT) and vegetation management funding and implementation have been significantly reduced as result of the tough budget choices DNR has had to make in the past few years.

In the case of vegetation management—the reduced levels of treatment, if continued, will lead to more stands that are under-stocked because of competition from understory vegetation, or over-stocked with high densities of trees. Both conditions reduce the likelihood that a stand will meet the department's long-term financial and habitat objectives. The initial budget for fiscal years 2012 and 2013 restores full funding for vegetation management treatments at projected levels.

Pre-commercial thinning is an important forest management tool to ensure and maintain healthy and vigorous forests. It reduces high stem densities, maintains individual tree vigor, accelerates diameter growth, selects preferred species and

helps address forest health concerns. Pre-commercial thinning was sharply curtailed in the 2007-09 biennium and was essentially discontinued in the 09-11 biennium due to budget constraints. The department is striving to reestablish the pre-commercial thinning program to meet its habitat and financial goals in the future.

HCP Program Highlights from FY2011

Discover Pass

In May of 2011, Governor Gregoire signed into law new recreation access legislation (SSSB 5622). The 'Discover Pass' is a vehicle permit that is required to access state recreation lands managed by Washington State Parks, Department of Fish and Wildlife, and DNR. The new law went into effect in July. It includes DNR-managed trust lands, natural areas and aquatic lands.

The Discover Pass provides a funding source for DNR's Recreation program, to help pay for the maintenance of existing recreation sites and facilities. It is anticipated to help direct the public to appropriate areas to recreate, and provide education and enforcement capabilities. It will contribute to DNR's ability to restore areas damaged by unauthorized activities such as off-road vehicle use in sensitive sites, shooting and illegal garbage dumping. This new revenue stream will also help DNR address public safety issues such as hazard trees near campgrounds and unsafe road conditions.

Riparian Forest Restoration Strategy Technical Review

In 2011 the department and the Federal Services convened a technical advisory committee to review implementation of the Riparian Forest Restoration Strategy approved in 2007. One of the major findings of the group was the need to remove constraints related to thinning riparian forest stands more than 70-years old. The technical committee unanimously agreed that it is much more effective to focus on the physical characteristics of the stand's development as a governor on stand treatments, rather than age. Modifying this element of the Riparian Forest Restoration Strategy is anticipated to help increase enhancement of riparian forests toward high quality riparian habitat on an accelerated trajectory. Details on implementation of this change are still being finalized between the agencies.

Program Activities

Silvicultural Activities

Background on Silvicultural activities

A timber sale contract allows the purchaser to remove timber generally over a 2-year 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 removals or levels of completed activities may vary based on the purchaser's choice on when to finish (complete) harvesting the timber sale. The overall acreage of all completed timber harvests in fiscal year 2011 (17,587 acres) was 21 percent below 2010 levels (22,164 acres), and slightly below the 10-year mean acreage (18,291). This was predominantly due to a dramatic reduction in the combined acreage of variable density thinning (VDT) and uneven-aged management, from 4,156 acres in fiscal year 2010 to 315 acres in 2011.This historically low level of thinning was due to poor timber market conditions during fiscal years 2008-09, which made it difficult to sell relatively low value thinning sales. While the market had largely recovered in fiscal year 2011, the one- to two-year lag between sale layout and completed harvest explains why very few thinnings were harvested and completed this year.

Variable retention harvest (VRH) levels remained virtually unchanged from the previous fiscal year 2010 (14,594 acres) to 2011 (14,642 acres). However, some planning units experienced significant changes: Klickitat, Yakima, and South Puget decreased variable retention harvest levels, while Columbia and Straits increased VRH levels. The combined annual

acreage of completed variable retention and all other types of regeneration harvests[1] was 29 percent higher for the 2009-2011 biennium (16,068 acres) than for the 2007-2009 biennium (12,040 acres). Due to the time lag between regeneration harvests and stand re-establishment activities, these increased harvest removal levels have not yet led to correspondingly higher levels of other silvicultural activities in fiscal year 2011. However, it is anticipated that there will be significant increases in these stand re-establishment activities in the 2011-2013 biennium.

Forest site-preparation acreage (6,471 acres) was 24 percent higher than the previous fiscal year (5,201 acres), although it was only slightly above the five-year mean (6,132 acres). The 2011 increase was primarily due to increased regeneration harvest levels for the biennium, although the levels were lower than they might have been due to budgetary constraints for site-preparation activities. Units scheduled for treatment were prioritized, with only the most critical acres treated. Aerial herbicide increased 84 percent from last year (2,295 to 4,217 acres), This large increase represents a return to the five-year norm of 3,753 acres; the 2010 acreage was abnormally low due to the aforementioned budget limitations. Ground herbicide increased by 54 percent (1,250 to 1,925 acres), 29 percent higher than the five-year average of 1,492 acres. These increases were partially offset by an 85 percent reduction in ground mechanical treatments (1,653 to 240 acres).

Forest regeneration acreage (13,466) was somewhat lower than last year (14,423). While hand planting levels remained constant from 2010 to 2011 (13,173 to 13,190 acres), natural regeneration decreased from 1,250 to 276 acres. This reduction occurred almost entirely within the Yakima planning unit, where natural regeneration declined from 1,129 to 234 acres following an 89 percent decline in overall timber harvest levels due to reduced staffing for preparation of relatively low-value sales in this planning unit.

While more acres (8,600 as opposed to 8,008 acres) received vegetation management treatments than the previous year, budget limitations prevented the treatment of all scheduled units. Vegetation management acreage treated was 30 percent lower than the 10-year annual mean of 12,320 acres. The mean annual vegetation management acreage for the last three fiscal years (7,774 acres) represents a 46 percent reduction from that of the first seven fiscal years of the decade (14,268 acres), highlighting the impact of the budget cuts experienced during the economic downturn.

Due to budget limitations, essentially no pre-commercial thinning was done in fiscal years 2010 and 2011.

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

Table 1. Silviculture Activities Summary, in Acres

ACTIVITY	COLUMBIA	KLICKITAT	NORTH PUGET	OESF	SOUTH COAST	SOUTH PUGET	STRAITS	YAKIMA	GRAND TOTAL
TIMBER HARVEST									
Commercial thinning	397	146	279	21	791		145		1,779
Selective product logging	344						267	234	845
Shelterwood removal cut	6								6
Uneven-aged management	9								9
Variable density thinning	37		24	145	16	84			306
Variable retention harvest	4,620	89	3,536	816	3,484	671	1,426		14,642
TOTAL Timber Harvest	**5,413**	**235**	**3,839**	**982**	**4,291**	**755**	**1,838**	**234**	**17,587**
FOREST SITE PREPARATION									
Aerial herbicide	1,506		965	649	1,097				4,217
Ground herbicide	280		717	157	347	230	194		1,925
Ground mechanical			6					234	240
Hand cut				89					89
TOTAL Forest Site Preparation	**1,786**		**1,688**	**895**	**1,444**	**230**	**194**	**234**	**6,471**
FOREST REGENERATION									
Hand plant	2,327		4,417	1,551	2,024	1,417	1,454		13,190
Natural			42					234	276
TOTAL Forest Regeneration	**2,327**		**4,459**	**1,551**	**2,024**	**1,417**	**1,454**	**234**	**13,466**
VEGETATION MANAGEMENT									
Aerial herbicide	291		213		442	84			1,030
Ground herbicide	210		786	19	682	157	262		2,116
Hand cut	410		2,338	123	845	863	875		5,454
TOTAL Vegetation Management	**911**		**3,337**	**142**	**1,969**	**1,104**	**1,137**		**8,600**
PRE-COMMERCIAL THINNING									
Pre-commercial thinning	34			108			67		209
TOTAL Pre-Commercial thinning	**34**			**108**			**67**		**209**

Non-timber Management Activities

Background on Non-timber Management

Non-timber data presented in this report is identical to that reported in FY 2010. The department's database system (NaturE) currently does not upload acreage to our GIS system, with the result that there is no spatial component to the data on leases and permits, requiring manual compilation of acres of land included under the trust lands HCP that is associated with a given lease or permit. We currently do not have the staff to do this level of research and reporting. The department's Information Technology Division has been working to rectify this situation. However, complexities of the software and a staff reduction of about 60 percent in the Information Technology Division due to budget constraints have further delayed the project.

The number of leases and associated acreage on land included under the HCP changes very little year by year. While the data we are presenting is not as accurate as desired, we are confident that there have been no significant changes in the number of acres affected or habitat impacts in the last several years. We hope that the data management difficulties will be resolved for the 2012 Annual Report, but this will be dependent upon receiving adequate funding.

Table 2. Non-Timber Management Activities

FY2011 TOTAL Non-Timber Management Activities[2]	Leases	Acres
Special Forest Products		
Western Greens	446	129,000
Christmas Greens	20	54,451
Christmas Trees	5	188
Misc. (Medicinal, cone and transplant)	8	0
Special Forest Products Totals	**479**	**183,639**
Valuable Materials[3]		
Silvicultural Pits		
Active Silvicultural Pits	165	317
Inactive Silvicultural Pits	230	216
Abandoned Silvicultural Pits	55	56
Total Silvicultural Rock, Sand & Gravel Pits (No Commercial Sales)	**450**	**589**
Commercial Pits[3]		
Active Commercial Pits	4	116
Inactive Commercial Pits		
Total Commercial Rock, Sand & Gravel Pits	**4**	**116**

[2] Data is identical to that reported in 2010, due to problems with data retrieval and analysis.

[3] 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.

Table 2. Continued

FY2011 TOTAL Non-Timber Management Activities		
	Leases	**Acres**
Rock, Sand & Gravel Sales		
Rock, Sand & Gravel Sales	3	551
Rock, Sand & Gravel Direct Sales	1	
Valuable Materials (Rock, Sand & Gravel) Sales Totals	**4**	**551**
Prospecting Leases/Mining Contracts		
Leases	1	60
Contracts	4	905
Prospecting Leases/Mining Contracts Totals	**5**	**965**
Active Oil & Gas Leases		
Active Oil & Gas Leases Totals	**67**	**25,568.92**
Grazing Permits/Leases		
Eastside	108	131,983
Westside	1	10
Grazing Permits/Leases	**109**	**131,990**
Communications Site Leases		
Number Sites	**58**	
Number Active Leases	**286**	
Recreation Site Totals	**109**	
Special Use Leases Totals	**86**	**1,936**

Recreation Program

Background on DNR's Recreation Program

The 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, Samish Overlook in Skagit County, and Mailbox Peak, in King County, and will carry out the commitments associated with the trust lands HCP.

- For 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. This project is in the early planning stage.
- Samish Overlook is a non-motorized recreation area, mainly used as a paragliding launch site, but also connects with existing non-motorized trails on Blanchard Mountain. A parking area with 16 stalls and a viewing platform currently is under construction.
- 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.

We also received grants to plan for new recreation facilities at Raging River Recreation Area in King County, Green Mountain State Forest in Kitsap County, Harry Osborn State Forest in Skagit County and Tahuya State Forest in Mason County. In addition, we obtained funding to relocate a recreation site in Pacific County, and to design a new campground at the Elbe ORV recreation site in Pierce County.

This fiscal year, DNR completed the Reiter Foothills and Ahtanum State Forest Recreation Plans.

Natural Areas Program

Background on DNR Natural Areas Program

In fiscal year 2011, the Natural Areas Program has protected an additional 12,118 acres of Natural Area Preserves (NAPs) and Natural Resources Conservation Areas (NRCAs), nearly all of which fall within the area covered by the trust lands HCP. These protection efforts include the establishment of two new natural areas and addition of lands to ten existing sites. A complete listing of these additions can be seen in Table 3. Among the most significant of these additions are:

- The Middle Fork Snoqualmie NRCA was established with the transfer of 9,001 trust land acres, protecting mature and late-seral mid-elevation forests, subalpine meadows, talus fields, and lakes.
- 1,350 acres were added to the Dabob Bay NAP/NRCA, expanding protection of shoreline and estuary habitats, as well as adjacent upland forest.
- The Ink Blot NAP was established with the purchase of 153 acres of freshwater wetland, bog, and surrounding forest communities.

Table 3. Acres Added to Natural Areas Covered by the HCP, in FY 2011, and Current Total (acreages may not add correctly due to rounding)

Natural Area	Natural Area Preserve (NAP) or Natural Resources Conservation Area (NRCA)	County	Acres added in FY 2011	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	360	3,019
Clearwater Bogs	NAP	JEFFERSON		504
Clearwater Corridor	NRCA	JEFFERSON		2,323
Columbia Falls	NAP	SKAMANIA	680	1,194
Cypress Highlands	NAP	SKAGIT		1,072
Cypress Island	NRCA	SKAGIT		4,089
Dabob Bay	NAP/NRCA	JEFFERSON	1,350	1,929

Table 3. Continued

Natural Area	Natural Area Preserve (NAP) or Natural Resources Conservation Area (NRCA)	County	Acres added in FY 2011	Current Acres
Dailey Prairie	NAP	WHATCOM		229
Devils Lake	NRCA	JEFFERSON		80
Elk River	NRCA	GRAYS HARBOR	221	5,194
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	153
Kennedy Creek	NAP	MASON		203
Kings Lake Bog	NAP	KING		309
Kitsap Forest	NAP	KITSAP		572
Klickitat Canyon	NRCA	YAKIMA		598
Lake Louise	NRCA	WHATCOM		138
Lummi Island	NRCA	WHATCOM	10	672
Merrill Lake	NRCA	COWLITZ		114
Middle Fork Snoqualmie	NRCA	KING	9,001	9,001
Mima Mounds	NAP	THURSTON		636
Monte Cristo	NAP	KLICKITAT		1,151
Morning Star	NRCA	SNOHOMISH	122	30,495
Mount Si	NRCA	KING		12,528
Niawiakum River	NAP	PACIFIC		997
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	66	1,738

Table 3. Continued

Natural Area	Natural Area Preserve (NAP) or Natural Resources Conservation Area (NRCA)	County	Acres added in FY 2011	Current Acres
Table Mountain	NRCA	SKAMANIA		2,837
Tahoma	NRCA	LEWIS		230
Teal Slough	NRCA	PACIFIC		8
Trout Lake	NAP	KLICKITAT	67	1,840
Washougal Oaks	NAP/NRCA	CLARK		223
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	47	847
Totals			**12,078**	**108,342**

Table 4. Threatened and Endangered Species Found in Natural Areas within the Area Covered by the Trust Lands HCP

Species	Federal Status	Natural Area
Northern spotted owl[1]	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[2]	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

[1]Only sites with established territories included
[2]Only occupied sites included
NRCA – Natural Resources Conservation Area
NAP – Natural Area Preserve

Table 5. Special Status Species Found in NAPs and NRCAs

Species	Natural Area*
Federal Candidates	
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
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

*Locality information was determined by consulting the following databases: Washington Natural Heritage BCD and the following WDFW databases: Heritage Points, Herp database, Owl database, murrelet database, Priority Habitats and Species and Streamnet.

Table 5. Continued

Species	Natural Area[1]
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 located within the area covered by the HCP and composed primarily of mature forests, late seral forests or a combination of mature and late seral forests.

Natural Area	Natural Area Size (Acres)
Coastal	
Kitsap Forest NAP	572
Stavis NRCA	1738
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
Morning Star NRCA	30,495
West Tiger Mt. NRCA	3,908
Mt. Si NRCA	12,528
Rattlesnake Mt. Scenic Area	1,771
Table Mt. 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	598
Total	**76,471**

Road Management Activities

Background on DNR's Road Management Program

In October 2011, Forest Practices changed the Road Management and Abandonment Plan (RMAP) completion deadline to October 31, 2016, giving DNR one more construction season to accomplish RMAP project work. Through land transactions and inventory activities, DNR has acquired 35 new fish barriers that will need to be addressed. Despite these additions, we continue to be on track to meet our RMAP commitment. A total of 145 barriers were removed from the fish-barrier work list, 109 of these being physically removed or replaced, opening up an estimated 55 miles of fish habitat on DNR-managed lands in calendar year 2010, at an investment of $2.1 million dollars.

Since the deployment of the GIS-based Proprietary Roads System in 2010, we've completed updates to spatial road data for five of six DNR regions, and have entered road maintenance activities for four regions. Proprietary Roads is a more accurate and up-to-date representation of our transportation network. The new system will enable DNR to more easily edit roads data (spatial and attribute data) and track roadwork. This should eventually make reporting easier.

DNR acquired 597 miles of additional road in 2010 through land exchanges. Due to inconsistencies in reporting, Public Use Maintenance and Forest Road Maintenance activities were not included in this year's report. 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.

Table 7. Road Management Summary, Calendar Year 2010

	HCP Planning Unit										
ACTIVITY (Miles)	Chelan	Columbia	Klickitat	Non-HCP Lands	North Puget	OESF	South Coast	South Puget	Straits	Yakima	Grand Total
New Road Constructed	0.00	15.64	1.23	18.20	44.26	3.22	31.12	8.00	18.68	0.33	140.69
Road Reconstructed	0.00	20.09	2.19	5.18	68.67	4.10	7.38	1.23	4.77	1.90	115.51
Forest Roads Decommissioned	0.00	0.20	7.62	54.98	0.00	6.13	6.15	0.20	0.39	36.32	112.00

Table 7. Continued

ACTIVITY (Miles)	HCP Planning Unit: Chelan	Columbia	Klickitat	Non-HCP Lands	North Puget	OESF	South Coast	South Puget	Straits	Yakima	Grand Total
Forest Roads Abandoned (Miles)	0	7	1	47	93	2	5	11	3	23	193
Inventoried Road Mileage	91	1,350	593	2,986	1,580	1,807	1,556	1,082	741	1,426	13,205
Total Fish Barriers Removed (projects)	0	18	1	9	46	11	36	11	5	8	145

Table 8. Road Use Permits and Easements

Planning Unit	Columbia	Klickitat	North Puget	OESF	South Puget	Straits	TOTAL
New Road Constructed							
Feet	10,900.00	3,311.70	2,200.00	7,955.84	75.00	16,754.00	**41,196.54**
Acres	10.95	1.94	3.03	6.18	0.50	12.38	**34.98**
Road Reconstruction							
Feet	0.00	0.00	25,509.00	0.00	0.00	0.00	**25,509.00**
Acres	0.00	0.00	35.14	0.00	0.00	0.00	**35.14**
Road Abandonment							
Feet	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Acres	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Fish Barrier Removal							
Feet	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Acres	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**

Table 9. Utility Easements
For HCP Planning Units where changes occurred in 2010

Planning Unit	South Coast	Klickitat	South Puget	TOTAL
New Construction				
Feet	175.00	4,424.95	4,128.00	**8,727.95**
Acres	0.04	2.03	0.85	**2.92**
Easements Granted - 2				
Feet	0.00	0.00	418.14	**418.14**
Acres	0.00	0.00	0.13	**0.13**

Land Transaction Activities, by Planning Unit

Background on DNR Land Transactions

Columbia

The Columbia Falls Natural Area Preserve (NAP) received 680 acres of former state trust land through the Trust Land Transfer Program. The area is designated dispersal habitat for spotted owl and will remain subject to the HCP so there is no net change in acres.

Klickitat

One 67-acre property was added to this planning unit as an addition to the Trout Lake Natural Area Preserve (NAP).

North Puget

A total of 3,007 acres were added to this planning unit. Three forest properties totaling 1,430 acres in Skagit, Snohomish and King Counties were acquired for the Common School trust. The majority of the acres are in Skagit County, and all are designated as having No Role for spotted owl. Three properties purchased in the Marckworth State Forest in 2002, totaling 1,102 acres, were added to the HCP Permit lands this year. These properties were held out of the HCP until the majority of the timber stands reached 25 years of age. Also, a review of older transactions led to the reclassification of six properties acquired in 1997 and 2001, totaling 475 acres, as HCP Permit Lands. At the time they were acquired the properties were considered for non-forest uses but the expected development did not occur.

Two properties were disposed, one to the National Park Service on San Juan Island (320 acres), and one three-acre site to San Juan County that had been leased for a well.

A new 9,000-acre Natural Resources Conservation Area (NRCA), named Middle Fork Snoqualmie, was created in King County through the Trust Land Transfer Program. Four other natural areas received a total of 812 acres, including two properties in Skagit County known as South Marble and Pressentin Creek which were transferred to Seattle City Light. Both properties remain subject to the HCP Implementation Agreement so no net change in acres occurred with these transactions. The transferred properties include significant northern spotted owl and marbled murrelet habitat.

South Coast

A total of 581 acres has been added to this planning unit. Three properties totaling 433 acres (not including tideland acres) are additions to the Elk River and Chehalis River Surge Plain NRCAs. Two properties totaling 148 acres were 1997

acquisitions that were not originally included in the HCP Permit Lands. At the time of acquisition the properties were considered for potential non-forest uses but the expected development did not occur.

South Puget

A total of 270 acres have been added to this planning unit. Newly acquired properties totaling 247 acres are additions to Stavis NRCA, Ink Blot NAP and Woodard Bay NRCA. A 23-acre parcel acquired in 1998 has been added to the Permit Lands. At the time of acquisition the properties were considered for potential non-forest uses but the expected development did not occur. Also, an eight-acre property was transferred to Mason County for recreation use.

Straits

One 137-acre property acquired in 1997 has been added to the Permit Lands. At the time of acquisition the property was considered for non-forest uses but the expected development did not occur.

Under the Trust Land Transfer Program 1349 acres of trust land were transferred to the Dabob Bay NAP. No net change in acres occurred with these transfers.

Yakima

A total of 1,702 acres were added to this planning unit. DNR completed Phase 1 of an exchange with the Washington State Department of Fish & Wildlife (WDFW) that consolidated ownership of both agencies in Eastern Washington. DNR traded 2,794 acres of Permit Lands to WDFW and received 4,496 acres suitable for addition to the Yakima Planning Unit.

Chelan and OESF planning units

No activity for this reporting period.

Table 10. Transactions on Lands Covered by the Trust Lands HCP: July 2010 to June 2011

Planning Units for Chelan, Columbia, and OESF are not included in the chart, as they did not have any numbers to report this year. Other Habitats Acquired and Other Habitats Disposed are also not included in the chart, as they did not have any information reported this year. All categories are estimated and not field verified.

ACTIVITY		Planning Unit						
		Klickitat	North Puget	South Coast	South Puget	Straits	Yakima	Totals
Riparian: Stream Miles Acquired	Stream type 1	0.03	1.97	1.89	-	-	0.56	4.45
	Stream type 2	-	-	0.78	-	-	-	0.78
	Stream type 3	-	4.12	0.39	0.05	-	4.24	8.80
	Stream type 4	-	4.38	0.01	0.09	-	1.65	6.13
	Stream type 5	-	6.85	0.31	0.41	0.42	21.07	29.06
	Stream type 9	0.23	3.70	1.08	0.05	-	5.65	10.71
	Total Miles	**0.26**	**21.02**	**4.46**	**0.60**	**0.42**	**33.17**	**59.93**
Riparian: Stream Miles Disposed	Stream type 1	-	-	-	(0.05)	-	-	(0.05)
	Stream type 2	-	-	-	-	-	-	-
	Stream type 3	-	-	-	(0.07)	-	(0.78)	(0.85)
	Stream type 4	-	(1.15)	-	-	-	(1.10)	(2.25)
	Stream type 5	-	(0.52)	-	-	-	(3.16)	(3.68)
	Stream type 9	-	-	-	(0.02)	-	(12.13)	(12.15)
	Total Miles	**-**	**(1.67)**	**-**	**(0.14)**	-	**(17.17)**	**(18.98)**
ROS / Slopes Acquired	Rain on Snow	67.34	779.91	-	-	-	1,133.79	**1,983.70**
ROS / Slopes Disposed	Rain on Snow	-	-	-	-	-	(2,552.96)	**(2,552.96)**
Age Class Acquired	Open 0-10	-	751.46	110.10	-	-	113.40	974.96
	Regeneration 11-20	-	1,150.45	40.75	17.80	101.00	-	1,390.76
	Pole 21-40	-	644.69	105.45	25.43	-	-	871.78
	Closed 41-70	5.00	345.06	230.67	155.09	36.00	2,722.18	3,449.47
	Complex 71-100	-	88.22	65.58	-	-	135.70	223.92
	Complex 101-150	-	-	-	-	-	-	-
	Functional 150+	-	-	-	-	-	-	-
	Non-Forest Land	62.34	27.75	28.68	71.25	-	1,524.75	1,783.33
	Total Acres	**67.34**	**3,007.63**	**581.23**	**269.57**	**137.00**	**4,496.03**	**8,694.22**
Age Class Disposed	Open 0-10	-	-	-	-	-	-	-
	Regeneration 11-20	-	(57.76)	-	-	-	-	(57.76)
	Pole 21-40	-	(1.00)	-	-	-	-	(1.00)
	Closed 41-70	-	(2.00)	-	-	-	-	(2.00)
	Complex 71-100	-	(207.10)	-	(7.17)	-	(273.42)	(487.69)
	Complex 101-150	-	(55.14)	-	-	-	(663.09)	(718.23)
	Functional 150+	-	-	-	-	-	(100.15)	(100.15)
	Non-Forest Land	-	-	-	(1.00)	-	(1,757.58)	(1,758.58)
	Total Acres	**-**	**(323.00)**	**-**	**(8.17)**	**-**	**(2,794.24)**	**(3,125.41)**

Monitoring and Research

Background on HCP Monitoring and Research

Implementation Monitoring

Implementation monitoring supports continual improvement in implementation of the HCP objectives and strategies by assessing and documenting whether a wide variety of activities are being carried out effectively and as planned.

Implementation Monitoring Accomplishments

Since 2010, funding and staffing have been severely restricted, and results have not been compiled or published.

Some funding has been restored to the monitoring program beginning July 2011. As of November, DNR has been in the process of hiring and orienting staff, and outlining monitoring priorities and protocols.

In fall and winter 2011, office and field work will resume with review of field activities and subsequent reporting. Priorities may include analyses of the data collected in 2009-2010.

Monitoring efforts will be combined with programmatic review efforts (silviculture and product sales) to increase efficiency and the timeliness of results.

Effectiveness Monitoring

Northern Spotted Owl Effectiveness Monitoring

Effectiveness Monitoring of the Northern Spotted Owl Strategy increases management confidence and options, supports continual improvement of HCP procedures and provides replicated, controlled monitoring to document treatment outcomes. The focus of 2010-2011 work has been to complete canopy and stand data analysis for the five established monitoring sites and prepare an establishment report that summarizes both the pre-treatment and the post-treatment stand conditions. The five monitoring sites that have been established include:

- **Lyon's Share** – a 2004 variable density thinning site located in a Nesting, Roosting, and Foraging (NRF) Management Area in the Columbia HCP Planning Unit (Siouxon Block).
- **Cougarilla** – a 2005 variable density thinning site located in a dispersal management area in the South Puget HCP Planning Unit (Tahoma Block).
- **Loop** – a 2006 variable density thinning site located in a NRF management area in eastern Washington (Husum Sub-landscape).
- **Big Beaver** – a 2007 variable density thinning site located in a dispersal management area in the South Puget HCP Planning unit (Elbe Block).
- **Whitehorse Flats** – a 2007 variable density thinning site located in a NRF management area in western Washington (North Puget Planning Unit).

All of the canopy and stand data analyses have been completed for all five sites and an establishment report draft has been completed. Due to budget constraints, the five-year stand response field data collection for the Lyon's Share monitoring site was postponed.

Continuing budget constraints have further postponed any field data collection and currently the spotted owl effectiveness monitoring staff position is vacant. Recruitment for a replacement monitoring scientist is underway and should be finalized early in 2012. Finalization of the establishment report is slated to be completed when the position is filled.

Riparian Silviculture Effectiveness Monitoring-Calendar Year 2010

Effectiveness monitoring of the Riparian Forest Restoration Strategy (RFRS) utilizes replicated, controlled monitoring to document treatment outcomes, and tests alternatives to current management practices that can be considered for future implementation. Beginning in 2006, seven sites have been established that adhere to the monitoring study plan (last updated in 2009). The objective 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. The information below is for calendar year 2010.

- **Current activities** – Re-measurement of existing sites is taking place as resources allow. In 2010 we surveyed conifer regeneration within the existing network of monitoring plots.
- **Future activities** – As resources allow, we hope to monitor windthrow on effectiveness monitoring sites and other stands in which the Riparian Forest Restoration Strategy has been implemented, using remote sensing techniques.

Riparian in-stream and conditions effectiveness monitoring

Due to budget constraints, this line of investigation is currently on hold.

Recent activities

We published results from the first phase of in-stream conditions and trends effectiveness monitoring for the HCP Riparian Strategy (Pollock et al. 2009). This paper is the first product of our HCP effectiveness monitoring for in-stream conditions and trends. This paper links reach-level water temperature recovery with watershed management history. This information was considered in the development of the OESF riparian strategy condition assessment developed in 2011.

A draft riparian status and trends monitoring plan was developed for the Olympic Experimental State Forest. The plan provides the conceptual framework, monitoring indicators, sampling design, and analytical approaches to evaluate the change in riparian and aquatic conditions across the OESF.

Adaptive Management

Background on Adaptive Management

Draft Adaptive Management Process Document

At the request of division management, a draft document was prepared during the summer of 2011 related to making Adaptive Management changes to management activities within the scope of the Forest Resources and Conservation Division, including the trust lands HCP. The document describes a systematic adaptive management process to help inform changes to management practices. The division views Adaptive Management as an ongoing process of continual assessment and the application of the best available scientific information to affect improvements in the way that forest ecosystems are managed.

Conservation Strategy Updates

Riparian Conservation Strategy

Riparian Forest Restoration Strategy

Calendar Year 2010 Riparian Forest Restoration Strategy implementation

Under the RFRS, areas within riparian zones along Type 3 and 4 streams are sometimes thinned to provide large wood to streams, maintain good overstory tree growth rates and enhance understory development. Riparian management often is employed with the secondary objective of improving future northern spotted owl habitat. Riparian areas are evaluated on a site specific basis, and only an appropriate portion receives restoration thinning. The area of implementation is often limited to avoid possible impacts to sensitive soils, existing legacy structures and inoperable areas.

- In calendar year 2010, DNR sold a total of 131 timber sales. Of those, 21 (16 percent) applied the RFRS.
- Of the 21 timber sales that applied the Riparian Forest Restoration Strategy, 66 percent thinned less than 40 percent of the RMZ area.
- Six of the 21 sales (29 percent) that applied the RFRS treated 15 percent or less of the RMZ area of the sale on the basis of site-specific evaluation by the foresters.
- In practice, thinning sideboards and stand conditions resulted in a post-thinning Relative Density above 40.
- At the time of publishing, the department and the Services have agreed to remove the interim restriction on restoration thinning in stands 70 years and older per the consensuses from the April 2011 RFRS Technical Review committee meeting. Details on implementation of this change are still being finalized with the USFWS and NOAA Fisheries.

Headwaters Conservation Strategy

The Draft *Headwaters Conservation Strategy* was produced as the final component of the trust lands HCP Riparian Conservation Strategies. It represents a several-year collaborative effort between the Federal Services, the scientific community, and DNR scientists and managers. The strategy incorporates emerging ideas about the importance of non-fish-bearing streams for ecosystem conservation, and their relationship to the quality of downstream fish habitat. The strategy provides clear guidance to help DNR foresters prioritize site-specific protections and integrate them with other existing leave tree 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 the proposed headwater conservation strategy. Staff reduction resulting from budget curtailment and competing priorities have temporarily postponed progress.

Training on Wetland Identification and Protection

During spring and early summer of 2011, wetland training was provided by the agency wetland specialist for field staff in the districts that were not included in the 2010 training. One work group in South Puget Sound Region and all districts in Olympic and Northwest regions received a full day of training, including office and field components. The workshop focused on materials that are relevant to recognizing, delineating and protecting wetlands. Topics included wetland definition, functions and values, DNR wetland policy, the trust lands HCP riparian strategy for wetlands, recognition of wetland hydrology, soils and plants, and wetlands in DNR's timber sales designs. DNR field staff was introduced to the 2010 Regional Supplement to the US Army Corps of Engineers Wetland Delineation Manual for Western Mountains, Coast and Valleys (Regional Supplement). This supplement provides a useful set of tools for delineating wetlands, based on best available science.

In March, in response to a need for additional support to identify hydric soils (wetland soils), DNR Region Wildlife Biologists participated in a day-and-a-half long hydric soils workshop, provided by three Natural Resources Conservation Service soils scientists (Chuck Natsuhara, Erik Dahlke and Dan Ufnar), and focused on hydric soil identification using the Indicators of Hydric Soils from the Regional Supplement. In conjunction with the agency's wetland specialist, the Biologists now are available to provide support, to the foresters in their regions regarding hydric soil identification.

Northern Spotted Owl Conservation Strategy

Background on northern spotted owl management

DNR contributes to the recovery of spotted owls by conserving spotted owl habitat within nesting, roosting, foraging (NRF) and dispersal management areas and the Olympic Experimental State Forest (OESF). The owl conservation strategies have a stand-level component (required forest structure and species composition) and a landscape-level component (amount of habitat per landscape). The minimum threshold levels of suitable habitat in the HCP units other than the OESF are tracked by Spotted Owl Management Unit (SOMU), which are based upon the Watershed Administrative Units of 1997, quarter townships for Eastern Washington, Landscape Planning Units in the OESF and Sub-Landscapes in the Klickitat Planning Unit. For most of the Nesting Roosting and Foraging and Dispersal management areas, 50 percent of the owl management unit is targeted to maintain habitat. For South Puget Dispersal management areas, 35 percent should meet the definition of Movement Roosting and Foraging (MoRF) habitat and 15 percent should meet the definition of dispersal (movement) habitat. In the OESF, 40 percent of each landscape unit should be in marginal habitat condition and one half of this should meet the definition of old forest habitat. Depending on the current habitat levels, various management activities may occur in owl habitat and non-habitat portion of state lands. Below is a table containing current habitat thresholds per owl management unit in the Westside planning units.

Table 11. Current habitat thresholds per Spotted Owl Management Unit

SOMU Name	Planning Unit	Management Area	Percent Movement, Roosting and Foraging Plus	Percent Old Forest	Percent Total
Rock Creek	Columbia	NRF	Null	Null	24.02
Silverstar	Columbia	DISP	Null	Null	45.79
Siouxon	Columbia	NRF	Null	Null	46.74
Swift Creek	Columbia	NRF	Null	Null	19.76
Upper Washougal	Columbia	DISP	Null	Null	59.96
Wind River	Columbia	NRF	Null	Null	5.23
Cougar	Columbia	NRF	Null	Null	41.44
Hamilton Creek DISP	Columbia	DISP	Null	Null	47.13
Hamilton Creek NRF	Columbia	NRF	Null	Null	13.52
Harmony	Columbia	DISP	Null	Null	25.45
Upper NF Stilly	N. Puget	NRF	Null	Null	0.00
Wallace River	N. Puget	NRF	Null	Null	0.00
Canyon-Warnick	N. Puget	NRF	Null	Null	13.78
W Shannon NRF	N. Puget	NRF	Null	Null	0.00
W Shannon DISP	N. Puget	DISP	Null	Null	35.11
E Shannon NRF	N. Puget	NRF	Null	Null	0.00
E Shannon DISP	N. Puget	DISP	Null	Null	20.47
Mid Skagit DISP	N. Puget	DISP	Null	Null	42.84
Mid Skagit NRF	N. Puget	NRF	Null	Null	0.00
Upper Skagit South NRF	N. Puget	NRF	Null	Null	1.29
Upper Skagit South DISP	N. Puget	DISP	Null	Null	58.56

Table 11. Continued

SOMU Name	Planning Unit	Management Area	Percent Movement, Roosting and Foraging Plus	Percent Old Forest	Percent Total
Sauk Prairie DISP	N. Puget	DISP	Null	Null	48.71
Sauk Prairie NRF	N. Puget	NRF	Null	Null	0.42
Deer Creek	N. Puget	NRF	Null	Null	6.10
Ebey Hill	N. Puget	NRF	Null	Null	0.00
French Boulder	N. Puget	NRF	Null	Null	0.17
Hazel	N. Puget	NRF	Null	Null	1.09
Howard Creek	N. Puget	NRF	Null	Null	3.25
Loretta	N. Puget	NRF	Null	Null	22.24
Marmot Ridge	N. Puget	NRF	Null	Null	1.40
North Fork Skykomish	N. Puget	NRF	Null	Null	4.02
Pilchuck Mtn	N. Puget	NRF	Null	Null	1.34
Rinker	N. Puget	NRF	Null	Null	6.66
Silverton	N. Puget	NRF	Null	Null	0.00
Spada	N. Puget	NRF	Null	Null	0.11
Tenas	N. Puget	NRF	Null	Null	0.00
South Snoqualmie	N. Puget	NRF	Null	Null	3.06
Alder	N. Puget	DISP	Null	Null	55.30
South Fork Skykomish	N. Puget	NRF	Null	Null	0.00
Cavanaugh	N. Puget	NRF	Null	Null	0.00
Clearwater	N. Puget	NRF	Null	Null	4.32
Upper Skagit North	N. Puget	NRF	Null	Null	0.00
North Snoqualmie	N. Puget	NRF	Null	Null	2.73
Reade Hill	OESF	OESF	Null	16.41	36.13
Sekiu	OESF	OESF	Null	0.00	3.64
Upper Clearwater	OESF	OESF	Null	25.85	29.50
Upper Sol Duc	OESF	OESF	Null	1.03	12.88
Willy Huel	OESF	OESF	Null	18.71	25.01
Copper Mine	OESF	OESF	Null	14.58	18.72
Dickodochtedar	OESF	OESF	Null	8.26	22.67
Goodman Creek	OESF	OESF	Null	17.03	25.93
Queets	OESF	OESF	Null	21.96	26.42
Kalaloch	OESF	OESF	Null	12.38	22.01
Clallam River	OESF	OESF	Null	0.00	13.05
Black Diamond	S. Puget	DISP	7.50	Null	25.54
Green	S. Puget	NRF	Null	Null	23.20
Pleasant Valley DISP	S. Puget	DISP	1.35	Null	22.13
Pleasant Valley NRF	S. Puget	NRF	Null	Null	0.92
Tahoma	S. Puget	DISP	1.66	Null	16.97
Elbe Hills	S. Puget	DISP	1.81	Null	36.87

Marbled Murrelet Conservation Strategy

Background information on marbled murrelets

Development of the long-term Marbled Murrelet Conservation Strategy is a priority for DNR. A new project team and resources were committed in 2011 to complete this project. This strategy is intended to help DNR meet both its fiduciary responsibilities and fulfill its conservation commitments in the trust lands HCP.

Since the HCP was signed in January of 1997, DNR has conducted complete inventories of murrelet habitat use in three of the six HCP Planning Units that contain murrelet habitat—Straits, South Coast and Columbia. Some inventories also were conducted in the Olympic Experimental State Forest (OESF). Although inventories of habitat use have not been completed in the North and South Puget Planning Units and these units were not considered in the Science Team Report, DNR will include all six Westside Planning Units in the long-term Conservation Strategy. Currently the project team is considering options for how to include these planning units in the development and analysis of management alternatives.

The project lead is working closely with the Commissioner of Public Lands and the project's Steering Committee to ensure that project goals are met. The Project Manager manages the Conservation Strategy Team that includes key technical staff active in developing and analyzing alternatives. A designated Outreach Manager coordinates internal and external stakeholder outreach. All team members work with DNR Communications staff to develop appropriate materials that support an understanding of strategy alternatives and the public process that will examine environmental and other potential effects of various alternatives.

Marbled Murrelet Interim Conservation Strategy

Implementation of the Interim Marbled Murrelet Conservation Strategy has progressed. Various benchmarks have been reached throughout the Westside planning units regarding the Steps described in the HCP. Surveyed, unoccupied murrelet habitat has been released from deferral status per Step 4 of the HCP and is described below for the South Coast and Straits planning units. The following table shows the amount of released habitat, and how much of these forested trust lands has been harvested to date.

Table 12. Harvested Acres of Released Habitat to Date

Straits HCP Planning Unit

WAU Name	Reclassified Acres	Maximum Acreage available for Harvest	Harvested Acres as of 11/20/11
Bell Creek	220	-	-
Big Quil	113	56	1
Chimakum	13	6	-
Cushman	120	-	-
Dabob	22	10	-
Discovery Bay	1,137	568	216
Dungeness Valley	1,415	190	39
Hamma Hamma	186	92	31
Lake Crescent	156	-	-
Lilliwaup	570	285	38

Table 12. Continued

Straits HCP Planning Unit (Continued)

WAU Name	Reclassified Acres	Maximum Acreage available for Harvest	Harvested Acres as of 11/20/11
Little Quil	95	47	-
Ludlow	94	47	45
Lyre	640	19	-
Morse Creek	315	4	3
Port Angeles	159	155	66
Salt	2,414	703	134
Sequim Bay	1,969	448	186
Siebert McDonald	1,853	474	28
Skokomish, Lower	15	-	-
Skokomish, Lower NF	73	36	10
Sutherland-Aldwell	1,933	475	157
Twins	770	225	58
South Coast HCP Planning Unit, North of Highways 8 & 12			
Cook-Elk	227	-	-
Copalis River	258	31	-
Hoquiam, EF	8	3	1
Hoquiam, WF-MF	57	-	-
Humptulips, Middle	111	55	66
Humptulips, WF	261	30	1
Joe-Moeclips	653	326	53
Stevens Creek	118	59	48
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	2

Olympic Experimental State Forest Research and Monitoring Program

Background on the Olympic Experimental State Forest

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

Coordination with the OESF Forest Land Planning Project

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 being prepared. DNR plans to publish them in the spring of 2012. The Research and Monitoring Program contributes to the planning process by:

- Developing an adaptive management chapter in the Forest Land Plan, which describes how research and monitoring activities are to be integrated into planned management activities;
- Developing an adaptive management procedure, which describes the steps in the OESF adaptive management process and the roles and responsibilities of DNR staff in the adaptive management cycle;
- Reviewing the existing information management in the OESF and suggesting improvements in order to meet the needs of a functional experimental forest into the future;
- Developing study plans for monitoring and research projects, which will be included in the Forest Land Plan and will be carried out concurrently with implementation of the Forest Land Plan.

A draft study plan for status and trends monitoring of riparian forests in the OESF was prepared by DNR staff and sent to external experts for peer review in August 2011. The plan will be available to the public in the spring of 2012.

Exploration of the available data sources needed to characterize the historic range of variability in riparian forests of the western Olympic Peninsula

The objectives of the study were to identify and describe existing sources of information on natural disturbance regimes on the western Olympic Peninsula, and to organize them in an electronic database. The information will be used to characterize habitat complexity as afforded by natural disturbance regimes—a target condition envisioned by the OESF riparian conservation strategy (HCP, p. IV 107). The study started in April 2010, with funding provided by US Forest Service, Pacific Northwest Research Station. The project was completed in May 2011. The database includes 280 citations, most of them linked to electronic copies of the full text. The database is jointly owned by DNR and Pacific Northwest research station. It is available upon request through DNR's Forest Resources and Conservation Division.

Providing long-term hydrological and meteorological data for the Olympic Experimental State Forest

The project created an automated data transfer process to provide local stream-flow and temperature data to an open-access server that is maintained by the U.S. Forest Service and the Long Term Ecological Research Network. The project is a result of the OESF recently being added to the Forest Service's Experimental Forest and Range Network – a network that includes 70 experimental forests and ranges nationwide and promotes data-sharing and collaborative research. The automated data transfer process project was started in August 2010, with funding provided by the US Forest Service, Pacific Northwest Research Station. The work was conducted in collaboration with the Olympic Natural Resources Center in Forks. The project was completed in December 2010. Long-term stream flow and temperature data from the western Olympic Peninsula are available online via the experimental network's web harvester at. Data are updated monthly through an automated process managed by DNR.

Other Programs

Forest Certifications

Background on Forest Certification of DNR-managed State Trust Lands

Sustainable Forestry Initiative® Program (SFI®)

Fiscal Year 2011 SFI Surveillance Audit

The FY 2011 Sustainable Forestry Initiative program surveillance audit was conducted by an independent-third party auditing firm and was held in DNR's Olympic and Northwest Regions in June 2011. The focus of the audit was to verify forest management and silviculture activities, wildlife and water resource protections, natural area conservation measures, active logging operations, and recreation opportunities provided to the public. Landscape planning, tribal relationships and public awareness related to management activities also were reviewed. Field files for each site were reviewed and used to determine the effectiveness of DNR's forest management systems and processes. A total of 33 sites were visited during the two days in the field.

The auditors noted that DNR has a good, reliable internal audit program and monitoring system carried out at headquarters to determine conformance at all regions and to implement corrective actions when appropriate. The auditors commended DNR's coordination and communication between headquarters and regions. The auditors found DNR to be effective in managing the SFI program and preparing the field audit schedule and packets; noting that DNR staff is very knowledgeable of forest management operations. The auditors continue to be impressed with the DNR's willingness to collaborate with all stakeholders to implement management strategies to improve habitat.

The audit results include DNR receiving zero Non-Conformances; three Opportunities for Improvement dealing with outdated inventory, contract provisions that specify conformance to best management practices, and incomplete HCP implementation monitoring commitments; and two Notable Practices related to long-term working relationships with tribes in protecting cultural, water and forest resources, and on-going collaboration with various recreation stakeholder groups creating a variety of recreational opportunities and educating the public on resource protection.

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 continued statewide certification.

Forest Stewardship Council® (FSC®)

Fiscal Year 2010 FSC Surveillance Audit

The FY 2011 surveillance audit was conducted in November 2010 by an independent-third party auditing firm and was held in the South Puget HCP Planning Unit. The focus of the audit was to verify forest management and silviculture activities related to indigenous peoples' rights, benefits from the forest (economic viability, marketing, minimization of waste, diversification and sustainable harvest), environmental impacts, monitoring, and high value conservation forests. Sites were chosen based upon the type and methods employed and to visit sites with a wide range of activities. Treatments included forest planting, herbicide application, road maintenance and stream crossings. The auditors also selected a number of fish passage restoration projects as well as a number of natural areas and old growth sites. Harvest areas were inspected to determine their condition and whether there had been any significant soil disturbance or water quality issues. The activities implemented 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 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 24 sites were visited during the two days in the field.

Twenty-one stakeholders were contacted, chosen from the list provided by DNR. Interviews focused on relationships and communications with DNR along with any outstanding issues. Most stakeholders expressed satisfaction with DNR. Two stakeholders commented on issues that required clarification. One comment was about the alternatives in the forest planning process outside of the FSC-certified planning unit and the second expressed concern about the recent staff reduction and how that may affect the DNR's ability to meet beneficiaries needs in the future. Both of these were clarified and documented.

A review was conducted of previous audits. The FSC audit team closed a previously cleared Corrective Action Request (CAR) related to ensuring that shipping documentation includes the FSC product group and DNR certificate number. No new recommendations were put forth and no Corrective Action Requests were issued.

It is the opinion of the auditor that DNR continues to meet the requirements of the FSC Forest Management Standard for the Pacific Coast Region of the USA. The FSC third-party auditing firm recommended that DNR maintain FSC certification within DNR's South Puget HCP Planning Unit; FSC's Wood and Forestry Department has confirmed agreement.

Eastside Old Forest Conservation

Background on Old Forest and Old Growth Conservation

The Eastside legacy tree procedure (May 2011), called Retention and Perpetuation of Legacy Trees, Snags and Downed Wood (eastside), specifies a selection process for legacy trees on timber sales to be conducted in eastern Washington. The selection process uses crown form, branch and bark characteristics, as described in *Identifying Old Trees and Forests in Eastern Washington (Van Pelt, 2008).* Among other goals, this procedure ensures retention of the oldest trees, which are quite rare on the landscape and have the structural attributes favored by wildlife species that are associated with Eastside older forests. The procedure incorporates the legacy tree commitments addressed in HCP Amendment No. 1 (Kickitat Amendment).

This procedure was updated in the spring of 2011 to clarify some of the language. Among the clarifications is a specification that if old growth trees must be felled for forest health or operational reasons for which there is no other remedy, the logs must stay on site. The new language also clarifies a provision that limits hardwoods counted as legacy trees to no more than 5 percent of the total leave trees per Forest Inventory Unit.

Training was held in Northeast Region in May of 2011, provided by agency specialists, biologists and managers, to make sure that the procedure is well understood, and to assure consistent implementation. The training was a full day in length and included office and field portions.

Appendix

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

And Glossary of Terms

Background Information

What's in the Fiscal Year 2011 Annual Report?

Introduction

Each year, as part of our commitments in the trust lands Habitat Conservation Plan (HCP), the state Department of Natural Resources (DNR) produces a report on the management activities completed during the past fiscal year on HCP-managed lands. Each report covers topics such as timber sales, the number of miles of roads abandoned (or put to bed), activities carried out in designated northern spotted owl habitat, trust land transactions, leases and rights of way, non-timber resources, and monitoring and research summaries.

The Annual Report provides a record of our activities, allowing us to document trends and the factors influencing them. It also highlights our achievements in meeting the goals of the HCP conservation strategies, which include providing more and better habitat. This document provides an overview, an explanation of DNR's HCP commitments, and supporting information on the various subject areas covered. **Back to Annual Report**

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

What is the HCP?

Washington's DNR manages roughly 2.3 million acres of forested state trust lands statewide. DNR's trust lands 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 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.

Elements of the Trust Lands HCP

Conservation Objectives for ESA-listed Species and Multiple-Species Conservation Objectives

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. 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 trust lands HCP includes provisions for a dynamic, scientifically-based adaptive management component that allows continual improvements of its implementation. **Back to Annual Report Introduction**

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.

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.

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. Each year, this report includes data for all activities reported as complete in P&T during the reporting period.

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.

A lessee harvests salal (*Gaultheria shallon*)—a special forest product—from DNR-managed state trust lands.

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.

It should be noted that HCP Annual Reports cover only silvicultural activities completed in one fiscal year. To further 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 Silviculture**

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, Non-timber activities**

Utility 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.

Right-of-way easements are detailed in two tables (see Tables 8 and 9). The first reports on the total number of new easements —those that created a new "footprint," indicating that timber was cut (to create a corridor for the utility) and/or a new right-of-way was created. The second table reports on the acreage and mileage of all new utility easements granted in the reporting period, whether they created a new footprint or not. **Back to Annual Report, Non-timber activities**

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.

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 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. **Back to Annual Report, Non-timber activities**

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. Any signed exploration lease is considered an "active" lease, whether or not exploration takes place. Any new permits are subject to SEPA review, and any proposed on-the-ground activities must undergo SEPA review and have a plan of operations approved by DNR. If the lessee then wants to actively drill, he or she must obtain a permit from DNR. Regulations exist to protect water and air quality and any exploration holes must be plugged following use. Seismic exploration (including thumping, which involves measuring seismological tremors caused by the dropping of large weights or detonation of explosives) no longer

requires a permit, but does require DNR to be notified. 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. There has never been any extraction done on HCP lands.

There may be some confusion about the definition of an "active" lease in the Trust Lands HCP Annual Reports, as prior to 2009 the term was used to mean a lease for which a permit application had been submitted (for either drilling or seismic exploration). As stated above, all leases are now considered to be active leases. **Back to Annual Report, Non-timber activities**

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 a few acres of forested land and no acres of non-forested lands. **Back to Annual Report, Grazing permits and leases**

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 will become possible.

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. **Back to Annual Report, Non-timber activities**

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. **Back to Annual Report, Non-timber activities**

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 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, Recreation**

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

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.

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.

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).

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.

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

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.

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.

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).

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.

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, Natural areas**

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 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 'Forests and Fish' legislation (implemented through Washington State Forest Practices Rules) 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 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 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). **Back to Annual Report, Road Management**

Land Transactions

DNR's 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'.

Through the transaction program, we look for opportunities to dispose of trust lands not appropriate for revenue production. Such lands 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 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, Land Transactions**

Monitoring and Research

Monitoring and research provide information necessary to improve the implementation and effectiveness of our conservation strategies in the 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 financial 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, Monitoring and Research**

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 past 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 monitoring of wetland and riparian management areas. Due to budgetary and staffing constraints, no implementation monitoring occurred in 2011. **Back to Annual Report, Implementation Monitoring**

Effectiveness Monitoring and Research for HCP Conservation Strategies

Effectiveness monitoring will document 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 will be monitored for effectiveness.

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

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.

Northern Spotted Owl Conservation Strategy

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.

Nesting, Roosting, Foraging and Dispersal/Desired Future Condition Management

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 WAU or quarter-township and the habitat type present in the potential harvest area. 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.

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

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) 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. **Back to Annual Report, northern spotted owl**

Marbled Murrelet Conservation Strategy

DNR protects marbled murrelets and their habitat through the 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 with additional staff in 2011. **Back to FY 2011 HCP 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.

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. 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 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 the **OESF Webpage** .

Management policy direction for management of the Olympic Experimental State Forest (OESF) is provided by the 1997 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 trust lands HCP is on riparian habitat maintenance and restoration. Back to FY 2011 HCP 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, Adaptive Management**

Other Programs

Forest Certifications

Forest certification is an approval 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 certification is not a requirement of DNR's trust lands Habitat Conservation Plan (HCP) but is complimentary to its intent, providing value through annual audits conducted by independent third-party auditors. Implementing obligations outlined within the HCP assists DNR in meeting the commitments outline within forest certification standards.

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).

We include forest certification updates in the trust lands HCP Annual Reports, to report on the auditor's annual findings. **Back to Annual Report, Certification**

Earth Sciences Program

This program was established to provide centralized technical and scientific support for state trust land management activities in the fields of geology, geomorphology, and hydrology. Program staff work with foresters and engineers to assess the potential effects of management activities on soil erosion and hydrology and to develop measures to mitigate adverse impacts. Their work includes conducting landslide risk assessments for individual timber sales, developing landscape-scale landslide hazard zonation maps, locating suitable rock sources for constructing and maintaining forest roads, and carrying out earth sciences-related research and monitoring.

Landslide Risk Assessments for Timber Sales

Earth Sciences Program staff provide technical and scientific support for the timber sales program by conducting landslide risk assessments for individual timber sales. While most assessments are performed remotely using aerial photographs, geologic maps, and Digital Elevation Model- or LiDAR-derived topographic information, many are field-based evaluations where geologists and hydrologists work directly with foresters and engineers to assess landslide potential and design mitigation measures to reduce risk. In areas where timber harvesting or road construction is proposed on slopes or landforms considered "potentially unstable" under the state's Forest Practices rules, a Licensed Engineering Geologist must conduct a more detailed landslide risk assessment. The Engineering Geologist must prepare a written report that describes the potential for the proposed activities to trigger landslides and the likelihood that water quality and aquatic habitat will be adversely affected.

Landslide Hazard Zonation

The goal of the Landslide Hazard Zonation project is to create an improved screening tool to use in identifying unstable landforms during both harvest layout and the sale permitting process. A product of the project is to produce maps that foresters, engineers, and other natural resource professionals can use to plan and implement forestry activities on state trust lands managed under the HCP, as well as non-HCP areas.

By better describing and mapping all potentially unstable slope areas in priority watersheds, we hope to eliminate errors of omission in identifying areas of hazard for mass wasting. As a part of the screening, landforms and hazard classifications are linked by the degree of hazard and sensitivities to land management practices. The Landslide Hazard Zonation project is managed through the Forest Practices Division, and State Lands benefits from completed projects. In the past, the Earth Sciences Program has completed projects on its own, and assessed State Lands Blocks within particular Watershed Analysis Units (WAUs). Due to reductions in budget and staffing, Earth Sciences Program staff is not currently developing landscape-scale slope stability screening maps. However, of the 59 WAUs completed in the Landslide Hazard Zonation project, six were completed by the Earth Sciences program in past years along with several sub-basin scale maps intended to be part of larger projects that would be submitted to Forest Practices for formal approval. These projects are currently suspended due to budget and staffing.

Old Growth Forest Identification and Management

Westside Forests

DNR's commitment to identify and protect old growth stands and individual old trees in the five Westside HCP planning units is written in the Policy for Sustainable Forests (DNR 2006), and is supported by the trust lands HCP and DNR's Westside old growth procedure.

On the Westside, DNR identifies old growth forest as part of screening that takes place before the timber sales is designed. Screening includes field assessments done by designees trained to identify old growth, with help from the Weighted Old Growth Habitat Index, a GIS-based screening tool developed by an independent scientific panel (The Old-Growth Definition Committee) in 2005. The Old-growth Definition Committee was chartered by the 2004 Legislature (ESHB 2573, sec. 905, 1-3) to work with DNR to develop a 'definition' of old-growth forest that could be used with forest inventory data to provide a map and inventory of old-growth forests on state lands managed by the department.

The Weighted Old Growth Habitat Index uses data from DNR's Forest Resource Inventory System (FRIS) inventory to analyze structure of stands on DNR-managed state land as they compare with known old growth stands in western Washington.

The index has several advantages over the use of previous definitions of old-growth forest, including the ability to identify stands that may be lacking in one or more structural components (such as snags). In western Washington, an index value of 60 or greater denotes a high probability of being old growth.

Eastside Forests

Old forests on the Eastside are far more complex than those on the Westside, due to more diverse environmental conditions and complex and varied disturbance and management histories. Trees that originated before Euro-American settlement (prior to 1850) are protected on the Eastside through a management procedure that requires all such trees to be left standing on DNR's timber sales on state trust lands, except when worker safety is at risk or when forest health issues threaten the regenerating stand. The HCP includes a conservation strategy for northern spotted owls east of the Cascade crest, which is also implemented in part through this procedure.

Several old growth-related publications—for both eastern and western Washington—can be downloaded from the **DNR Old Forest webpage**. **Back to Annual Report, Old Forest Conservation**

Glossary of terms used in DNR 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.

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

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.

Forest certification: an approval 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 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: a landscape area that is managed to realize its capability to provide future potential marbled murrelet nesting habitat. Some portion of the DNR-managed lands within its boundary is managed with the goal of providing high-quality marbled murrelet nesting habitat.

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 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 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 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: the term DNR uses for the high-quality habitat expected to contain at least 95 percent of the occupied marbled murrelet sites on DNR-managed lands.

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, then uses 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 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 that meet state 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.

Seeding grass: broadcast seeding of annual grass species so that they—not noxious weeds—will occupy newly prepared sites. This generally is used east of the Cascade crest.

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.

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 under-burning 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 pre-commercial 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 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.