

Trust Lands Habitat Conservation Plan 2010 Annual Report

December 2010



WASHINGTON STATE DEPARTMENT OF
Natural Resources
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Cover photo: The aerial photograph illustrates how timber sales within the Beaver Creek drainage of the South Puget Planning Unit work to develop diverse future forest structures. A synergy between implementing the Northern Spotted Owl and Riparian Conservation strategies superimpose to fundamentally change the landscape from past forest practices. Conservation strategies under the Trust Lands Habitat Conservation Plan protect aquatic habitats and promote niche diversity in upland habitat for a variety of older forest species.

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Introduction

This report provides an overview of the many dimensions of implementing the Trust Lands Habitat Conservation Plan (HCP) on State Lands for fiscal year 2010. After more than a decade working under the guidelines of the plan, the extensive riparian management zones and leave tree provisions now are some of the most visible effects to HCP landscapes. As evidenced by the breadth of activities discussed in this report, implementation of the HCP touches almost every aspect of management in the 1.8 million acres of Washington State Department of Natural Resources (DNR) managed Trust forest landscapes included under the HCP.

Due to the effects of the national recession, DNR has experienced budgetary constraints that continue to influence management activities on state-managed trust lands covered by the HCP. While the conservation strategies continue to be implemented, budget and staffing shortfalls continue to curtail many silvicultural, research and monitoring activities.

Reporting mechanisms have also been affected. Some of the staff who have supplied information for this Annual Report are providing data and information for the first time without benefit of some of the “institutional memory” that has been lost with staff turnover. In a few cases in the non-timber management activities category, new data for 2010 was not available, and the data presented in this report is from fiscal year 2009. Such instances are labeled accordingly.

A plan to use the DNR website as a platform to facilitate communication of trends and measures of success has experienced some setbacks as well, due to short staffing and existing web structure. However, we expect to expand web access, providing the public with a variety of information regarding the Trust Lands HCP over time.

As with many challenging times, budgetary difficulties at DNR are accompanied by opportunities to streamline efforts and improve efficiencies. We are investigating new ways to employ DNR’s Geographic Information Systems (GIS), Large Data Overlay and NaturE data systems to summarize some of the data that we report annually. We’re hopeful that new approaches will improve our reporting capacity for future years.

In the meantime, this year’s Annual Report is presented in the same format as the Fiscal Year (FY) 2009 report, and for the foreseeable future will continue to be an electronic document rather than a printed document.

This past year, DNR encountered a single but significant HCP non-compliance issue relating to a timber harvest activity. This non-compliance included the misidentification of several wetlands and their buffers, as well as the mistyping of several streams.

Information gained from this experience has been shared with the Federal Services, within the region affected, with appropriate agency divisions, and with other regions across the state as “lessons learned”. Mitigation measures taken included: identifying additional areas for resource protection, and collective review of other timber sale layout work that was done during the same timeframe. We took pause to assess the current organization of our timber sales process, and identify needed focus areas such as training, proper supervision, mentoring and pre-sales review. Within DNR, there is a renewed commitment and dedication to re-assessing the current written framework for environmental decision making, and better documentation of the professional judgments and recommendations that are made as part of the pre-sales program, and as part of our sustainable stewardship of the land.

The application of the lessons learned from this non-compliance incident will occur at many levels in DNR’s organization, beginning with manager priorities. Clearly strong leadership is the first key to preventing future non-compliance. As economic times improve and we again find ourselves in a position to hire new foresters, training and mentoring plans will be key to providing the next generation of foresters with sound resource identification knowledge and skills.

Program Highlights

Silvicultural Activities

The overall acreage of timber harvests in FY2010 (22,164 acres thinned or harvested with variable retention methods) was well above FY 2009 acreage (16,329 acres) due to harvesting of sales that had been delayed in 2009 by the recession. While the overall harvested acreage significantly increased, the harvest acreage for Yakima and Straits HCP Planning Units decreased.

Forest site-preparation acreage was slightly lower than last fiscal year and near the 10-year mean. Budget allocations for the year were not adequate to treat all units scheduled for site-preparation. Units scheduled for treatment were prioritized, with only the most critical acreage treated.

Forest-regeneration acreage was lower than last year but still near the 10-year mean. The level of regeneration activity varies annually with the level of harvest. A small backlog of un-regenerated areas was created due to a shortage of seedlings for some specific areas. These areas will be regenerated in FY 2011.

While more acres received vegetation management treatments than the previous year, budget limitations prevented the treatment of all scheduled units. Vegetation-management acreage treated remains significantly lower than the 10-year mean.

Due to budget limitations, essentially no pre-commercial thinning activities were conducted during FY 2010.

Table 1. Silviculture Activities Summary, in Acres

ACTIVITY	HCP Planning Unit: numbers reported in acres								GRAND TOTAL
	COLUMBIA	KLICKITAT	N PUGET	OESF	S COAST	S PUGET	STRAITS	YAKIMA	
TIMBER HARVEST									
Clear cut				124	106				230
Commercial thinning		968	618	152					1,738
Seed tree intermediate cut		358				35		114	507
Timber Harvest - Selective productive logging						211	124		335
Shelterwood intermediate cut						168		351	519
Shelterwood removal cut		85							85
Uneven-aged management		525					116	994	1,635
Variable density thinning	269	259	437		72	1,329		155	2,521
Variable retention harvest	1,960	1,512	2,837	1,265	4,551	1,062	892	515	14,594
TOTAL TIMBER HARVEST	2,229	3,707	3,892	1,541	4,729	2,805	1,132	2,129	22,164
FOREST SITE PREPARATION									
Aerial herbicide	1,020		711		564	0			2,295
Ground herbicide	98		284	301	161	37	369		1,250
Ground mechanical			6				10	1,637	1,653
Pile and burn	111				372			1,690	2,173
Underburning						3			3
TOTAL Forest Site Preparation	1,229		1,001	301	1,097	40	379	3,327	7,374
FOREST REGENERATION									
Hand planting	1,973	2,195	2,291	1,040	3,157	842	1,675		13,173
Natural regeneration	121							1,129	1,250
TOTAL Forest Regeneration	2,094	2,195	2,291	1,040	3,157	842	1,675	1,129	14,423
VEGETATION MANAGEMENT									
Ground herbicide	63		2,284	107	357	102	648		3,561
Hand cutting	869		1,092	44	1,836	387	219		4,447
TOTAL Vegetation Management	932		3,376	151	2,193	489	867		8,008
PRE-COMMERCIAL THINNING									
Pre-commercial thinning					53				53
TOTAL Pre-commercial thinning					53				53

Non-timber Management Activities

Table 2. Non-timber Management Activities

	FY 2009 TOTAL (for comparison)		FY 2010 TOTAL	
	ACTIVITY in NUMBERS	ACTIVITY in ACRES	ACTIVITY in NUMBERS	ACTIVITY in ACRES
Utility Rights-of-Way				
Utility Rights-of-Way	8	32.45 ac / 7.29 miles	1	3 ac / 2.5 miles
TOTAL Rights-of-Ways Issued during respective reporting period.	8	32.45 ac / 7.29 miles	1	3 ac / 2.5 miles
Special Forest Products				
Western Greens	446	129,000	446	129,000
Christmas Greens	20	54,451	20	54,451
Christmas Trees	5	188	5	188
Misc. (Medicinal, cone and transplant)	8	-	8	-
TOTAL Special Forest Products in force during respective reporting period	479	183,639	479*	183,639*
Silvicultural Pits				
Active Silvicultural Pits	165	317	165	317
Inactive Silvicultural Pits	230	216	230	216
Abandoned Silvicultural Pits	55	56	55	56
TOTAL Silvicultural Rock, Sand & Gravel Pits (No Commercial Sales) ¹	450	589	450*	589*
Commercial Pits				
Active Commercial Pits	7	101	4	116
Inactive Commercial Pits	2	66	0	-
TOTAL Commercial Rock, Sand and Gravel Pits	9	167	4	116
Rock, Sand & Gravel Sales				
Rock, Sand, & Gravel Sales	3	178	3	551
Rock, Sand, and Gravel Direct Sales	0	-	1	-
TOTAL Rock, Sand & Gravel Sales	3	178	4	551

Table 2. continued

	FY 2009 TOTAL (for comparison)		FY 2010 TOTAL	
	ACTIVITY in NUMBERS	ACTIVITY in ACRES	ACTIVITY in NUMBERS	ACTIVITY in ACRES
Prospecting Leases/Mining Contracts				
Leases	16	3,219	1	60
Contracts	11	2,064	4	905
TOTAL Prospecting Leases/Mining Contracts 2	27	5,283	5	965
Oil & Gas Leases				
Oil & Gas Leases	182	79,164	67	25,569
TOTAL Active Oil & Gas Leases	182	79,164	67	25,569
Grazing Permits/Leases				
Eastside	108	131,983	108*	131,983*
Westside	2	11	1	10
TOTAL Grazing Permits/Leases	110	131,994	109*	131,990*
Communications Sites/Leases				
Number Sites	58	-	58	-
Number Active Leases	282	-	286	-
TOTAL Communication Sites/Leases	340	-	344	-
Recreation Sites				
Recreation Sites	123	2,409	109	1,936
TOTAL Recreation Sites	123	2,409	109	1,936
Special Use Leases				
Special Use Leases	86	5,699	86*	5,699*
TOTAL Special Use Leases	86	5,699	86*	5,699*
*Data presented is approximate, and in some cases is the same data presented in FY 2009. Difficulties in obtaining accurate data should be resolved for FY 2011.				
1 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.				
2 Erroneous numbers of prospecting leases and mining contracts for FY 2008 and 2009 included some non-HCP lands, which accounts for the sharp difference between these years and FY 2010.				

Sustainable Recreation

Education and Enforcement

DNR has initiated a Forest Watch Program that trains volunteers to be the eyes and ears for the department. This program has been very successful in deterring and catching those few members of the public who destroy public resources.

Recreation Plan Development

Recreation plans have been developed for the State Trust Lands at Reiter Foothills Forest in the North Puget HCP Planning Unit, Western Yacolt State Forest in the Columbia HCP Planning Unit, and the Ahtanum State Forest in

the Yakima HCP Planning Unit. Implementation has begun on these plans, including development, redevelopment and restoration of proposed and existing trails, facilities and restoration of areas impacted by unauthorized use. Development and implementation of these plans were funded by the 2008 and 2010 Washington State Legislature.

Natural Areas Program

In FY 2010, the Natural Areas Program has designated and protected an additional 493 acres of Natural Area Preserves (NAPs) and Natural Resources Conservation Areas (NRCAs), all of which fall within the area covered by the HCP. Highlights include:

- 174 acres were added to the Dabob Bay NAP/NRCA, expanding protection of shoreline and estuary habitats, as well as adjacent upland forest.
- Klickitat Canyon NRCA was expanded by 128 acres including dry meadows, seasonal wetlands, ponderosa pine forest, and riparian habitat.
- 115 acres were added to the Stavis NRCA, helping protect additional areas of Douglas-fir forest, including three forest plant associations endemic to the Puget Trough Ecoregion, and high-quality freshwater wetlands and riparian systems.

Table 3. Number of Acres Added to Natural Areas within the Area covered by the HCP in FY 2010, and current Total Acreage
(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 2010	Current Acres
Admiralty Inlet	NAP	ISL		33
Bald Hill	NAP	TH		314
Bone River	NAP	PA		2,720
Camas Meadows	NAP	CH		1,987
Carlisle Bog	NAP	GH		310
Cattle Point	NRCA	SJ		112
Charley Creek	NAP	KG		1,966
Chehalis River Surge Plain	NAP	GH	15	2,658
Clearwater Bogs	NAP	JE		504
Clearwater Corridor	NRCA	JE		2323
Columbia Falls	NAP	SKA		514
Cypress Highlands	NAP	SKT		1,072
Cypress Island	NRCA	SKT		4,089
Dabob Bay	NAP/NRCA	JE	174	579
Dailey Prairie	NAP	WHA		229
Devils Lake	NRCA	JE		80
Elk River	NRCA	GH		4,973
Ellsworth Creek	NRCA	PA		557
Goose Island	NAP	GH		12
Granite Lakes	NRCA	SKT		603
Gunpowder Island	NAP	PA		152
Hamma Hamma Balds	NAP	MA		957
Hat Island	NRCA	SKT		91
Hendrickson Canyon	NRCA	WAH		159
Kennedy Creek	NAP	MA		203
Kings Lake Bog	NAP	KG		309
Kitsap Forest	NAP	KIP		572
Klickitat Canyon	NRCA	YA	128	598
Lake Louise	NRCA	WHA		138
Lummi Island	NRCA	WHA		661

Natural Area	Natural Area Preserve (NAP) or Natural Resources Conservation Area (NRCA)	County	Acres added in FY 2010	Current Acres
Merrill Lake	NRCA	COW		114
Mima Mounds	NAP	TH		636
Monte Cristo	NAP	KL		1151
Morning Star	NRCA	SN		30,373
Mount Si	NRCA	KG	41	12,528
Niawiakum River	NAP	PA		997
North Bay	NAP	GH		1,098
Oak Patch	NAP	MA		17
Olivine Bridge	NAP	SKT		148
Point Doughty	NAP	SJ		57
Rattlesnake Ridge	NRCA	KG		1,771
Rocky Prairie	NAP	TH		35
Sand Island	NAP	GH		8
Shipwreck Point	NRCA	CLM		472
Shumocher Creek	NAP	MA		494
Skagit Bald Eagle	NAP	SKT		1,546
Skookum Inlet	NAP	MA		143
Snoqualmie Bog	NAP	KG		110
South Nemah	NRCA	PA		2,440
South Nolan	NRCA	JE		213
Stavis	NRCA	KIP	115	1,672
Table Mountain	NRCA	SKA		2,837
Tahoma	NRCA	LW		230
Teal Slough	NRCA	PA		8
Trout Lake	NAP	KL		1,773
Washougal Oaks	NAP/NRCA	CLK	20	223
West Tiger Mtn	NRCA	KG		3,908
Whitcomb Flats	NAP	GH		5
White Salmon Oak	NRCA	KL		551
Willapa Divide	NAP	PA		587
Woodard Bay	NRCA	TH		800
Totals			493	96,420

Table 4. Threatened and Endangered Species Found in NAPs and NRCAs 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

¹Only sites with established territories included

²Only occupied sites included

Table 5. Special Status Species found in NAPs and NRCAs (Federal Species of Concern, State-listed, State Candidate or other sensitive species) found in Tables III.14 and III.17 of the Final trust lands HCP

(Note: New Federal Candidates within the area covered by the HCP and found in natural areas have been added, and any change in species status also has been changed).

Species	Natural Area ¹
Federal Candidates	
Coho salmon (Lower Columbia/SW Washington)	Washougal Oaks NAP/NRCA
Oregon spotted frog	Trout Lake NAP
Taylor's checkerspot	Bald Hill NAP
Federal Species of Concern	
Beller's ground beetle	Snoqualmie 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

Species	Natural Area¹
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
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 mudminnow	Carlisle Bog NAP, Chehalis River Surge Plain NAP, West Tiger Mountain NRCA
Western bluebird	Rocky Prairie NAP, Mima Mounds NAP

¹Locality 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 6. Trust Lands HCP-covered Natural Areas Composed Primarily of Mature Forests, Late Seral Forests or a Combination of Both

Natural Area	Natural Area Size (Acres)
Coastal	
Kitsap Forest NAP	572
Stavis NRCA	1672
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	30,373
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	514
Charley Creek NAP	1,966
Tahoma NRCA	230
Eastern Cascades	
Monte Cristo NAP	1,151
Klickitat Canyon NRCA	598
Total	66,264

Road Management Activities

Road management activities traditionally are recorded and reported for calendar year rather than fiscal year. At the time of writing, calendar year data was not available for 2010. Table 6, which reports road management activities for calendar year 2009, was included in last year's HCP Annual Report and is repeated here to provide a frame of reference for the scale at which annual road management activities generally occur.

DNR has re-committed to the original RMAP deadline of July 2016. With the re-committal, DNR will need to reprioritize road work to focus more on fish-barrier remediation. Other road management activities may become a lower priority due to the reprioritization; however, road management activities and mileages associated with timber sales should remain consistent with timber volume removed.

Unlike 2008 and 2009, DNR has not acquired a significant amount of road mileage from land exchanges, to date. Nevertheless, as land transactions continue, we can expect an increase in road mileage over the next couple of years.

After three years of work, DNR has completed the production of the new GIS based Proprietary Roads System report/map. 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), track road work and eventually make reporting easier. Proprietary Roads was deployed for use in July 2010.

Table 7. Road Management Summary, Calendar Year 2009

Activity (Miles)	HCP Planning Unit										
	Chelan	Columbia	Klickitat	Non-HCP Lands	North Puget	OESF	South Coast	South Puget	Straits	Yakima	Grand Total
Road Reconstructed (Miles)	0	9.02	2.54	3.30	60.27	0.58	7.16	5.39	5.02	2.34	95.62
FEMA Storm Damage (# of projects)	0	0	0	0	30	10	0	25	0	0	65
Forest Roads Abandoned (Miles)	0.72	3.5	0.94	6.86	53.94	0.73	6.81	12.24	6.3	7.71	99.76
Forest Roads Decommissioned (Miles)	0	1.2	2.43	1.13	0	5.91	2.13	4.17	1.87	15.38	34.22
Inventoried Road Miles in Unit	90.65	1350	591.21	137.50	1609.11	1812	1556	874.79	737.86	990.18	9749.29
New Road Constructed (Miles)	0	16.71	3.11	7.05	54.02	4.20	16.67	13.15	8.76	3.15	126.82
Public Use Maintenance	0	0	0	0	0	0	0	0	0	0	0
Road Maintenance	0.27	0	171.44	94.50	1315.00	0	0	0	0	142.43	1723.64
Total Fish Barriers Removed	0	5	0	10	16	14	13	7	3	2	70

Table 8. Road Use Permits and Easements

For HCP Planning Units where changes occurred in 2009.

Planning Unit	North Puget	OESF	South Coast	South Puget	Straits	Total
New road Constructed						
Miles	0.3	0.1	0.7	0.1	8.7	9.9
Acres	1.74	0.7	2.13	0.8	12.53	17.9
Road Reconstruction						
Miles	0	0	0	0	0	0
Acres	0	0	0	0	0	0
Road Abandonment						
Miles	.24	0	0	0	0	.24

Table 9. Utility Easements

For HCP Planning Units where changes occurred in 2009

Planning Unit	North Puget	Total
New Construction		
Miles	2.5	2.5
Acres	3.03	3.03

Land Transactions Activities

Chelan

There was no activity during this reporting period.

Columbia

DNR acquired 2,600 acres of forest land in Lewis County for the Common School trust, including one 2,300-acre block of land. One 20-acre parcel was acquired for the Washougal Oaks Natural Area.

Through a timber exchange with Plum Creek, DNR traded just under 2,000 acres of forest land in Clark, Cowlitz and Lewis counties. Most traded parcels were either single, isolated properties or small blocks; including one 280-acre parcel located within a designated Dispersal Management area for the Northern Spotted Owl. One parcel of transition land was also sold to Clark County.

Klickitat

The acquired acres are an addition to the Klickitat Canyon Natural Area. The acres disposed were traded to Plum Creek.

North Puget

Two properties (about 40 acres) were added to the Mt Si Natural Area. About 935 acres of forest land were acquired in Skagit, Snohomish and northern King counties. The latter property is an addition to the Marckworth State Forest, and though it will be managed as trust land, King County holds a conservation easement on the piece for development rights.

One 40-acre parcel was sold to Island County, and one 80-acre parcel in northern King County was traded to Plum Creek.

Two properties in Skagit County (851 acres) were transferred to Seattle City Light but through a deed restriction will remain to be managed under the HCP.

OESF

Two small parcels of forest land were acquired that added acreage to an existing DNR-managed state trust lands block.

South Coast

One forested parcel was added to the Chehalis River Surge Plain Natural Area Preserve. Four properties in Lewis County, totaling 1,066 acres, were traded to Plum Creek.

South Puget

DNR acquired a large block of forest land from Plum Creek located just south of the Cedar River Watershed, totaling 20,677 acres. Also, this year, one 160-acre parcel acquired in the 2001 exchange with Plum Creek is being added to lands managed under the HCP. It was not included in the permit lands originally due to the age of the timber. The remaining 115 acres acquired were added to the Stavis Natural Resources Conservation Area in Kitsap County.

The majority of the disposed acres went to Plum Creek, with one recreation parcel transferred to Thurston County.

Four properties totaling 384 acres were transferred from the Common School trust to the Dabob Bay Natural Area in Jefferson County. They will remain part of lands managed under the HCP.

Straits

There was no activity during this reporting period.

Yakima

There was no activity during this reporting period.

**Table 10. Effects of Transactions on Permit Lands:
July 2009 to June 2010**

ACTIVITY	PLANNING UNIT									
	Chelan	Columbia	Klickitat	N Puget	OESF	S Coast	S Puget	Straits	Yakima	Total ACRES
Total Habitat Acres Acquired	-	2,662.45	217.70	976.66	86.45	15.00	21,042.33	-	-	25,000.59
Total Habitat Acres Disposed	-	(2,081.69)	(2,356.72)	(120.00)	-	(1,066.08)	(608.57)	-	-	(6,233.06)
Net Change	-	580.76	(2,139.02)	856.66	86.45	(1,051.08)	20,433.76	-	-	18,767.53
Owl Habitat Acquired	Designated Dispersal	-	-	-	-	-	160.00	-	-	160.00
	Existing Dispersal (41+)	-	-	-	-	-	66.00	-	-	66.00
	Designated DFC	-	-	130.00	-	-	-	-	-	130.00
	Existing DFC	-	-	62.00	-	-	-	-	-	62.00
	Designated NRF	-	-	-	-	-	-	-	-	-
	Existing NRF (71+)	-	-	-	-	-	-	-	-	-
	OESF	-	-	-	-	86.45	-	-	-	86.45
	No Role	-	2,647.90	-	976.66	-	15.00	20,796.33	-	-
Total Acres	-	2,647.90	192.00	976.66	86.45	15.00	21,022.33	-	-	24,940.34
Owl Habitat Disposed	Designated Dispersal	-	(279.45)	-	-	-	-	-	-	(279.45)
	Existing Dispersal (41+)	-	-	-	-	-	-	-	-	-
	Designated DFC	-	-	-	-	-	-	-	-	-
	Existing DFC	-	-	-	-	-	-	-	-	-
	Designated NRF	-	-	-	-	-	-	-	-	-
	Existing NRF (71+)	-	-	-	-	-	-	-	-	-
	OESF	-	-	-	-	-	-	-	-	-
	No Role	-	(1,802.24)	(2,356.72)	(120.00)	-	(1,066.08)	(608.57)	-	-
Total Acres	-	(2,081.69)	(2,356.72)	(120.00)	-	(1,066.08)	(608.57)	-	-	(6,233.06)
Other Habitats Acquired	Murrelet	-	-	-	-	-	-	-	-	-
	Oregon silverspot butterfly	-	-	-	-	-	-	-	-	-
	Aleutian Canadian goose	-	-	-	-	-	-	-	-	-
	Bald eagle	-	-	-	-	-	20.00	-	-	20.00
	Peregrine falcon	-	-	-	-	-	-	-	-	-
	Gray wolf	-	-	-	-	-	-	-	-	-
	Grizzly bear	-	-	-	-	-	-	-	-	-
	Columbia white-tailed deer	-	-	-	-	-	-	-	-	-
	Talus and cliffs	-	-	-	-	-	-	-	-	-
	Meadows	-	14.55	25.70	-	-	-	-	-	40.25
	Total Acres	-	14.55	25.70	-	-	-	20.00	-	-
Other Habitats Disposed	Murrelet	-	-	-	-	-	-	-	-	-
	Oregon silverspot butterfly	-	-	-	-	-	-	-	-	-
	Aleutian Canadian goose	-	-	-	-	-	-	-	-	-
	Bald eagle	-	-	-	-	-	-	-	-	-
	Peregrine falcon	-	-	-	-	-	-	-	-	-
	Gray wolf	-	-	-	-	-	-	-	-	-
	Grizzly bear	-	-	-	-	-	-	-	-	-
	Columbia white-tailed deer	-	-	-	-	-	-	-	-	-
	Talus and cliffs	-	-	-	-	-	-	-	-	-
	Meadows	-	-	-	-	-	-	-	-	-
Total Acres	-	-	-	-	-	-	-	-	-	

Table 10. continued

ACTIVITY		PLANNING UNIT									
		Chelan	Columbia	Klickitat	N Puget	OESF	S Coast	S Puget	Straits	Yakima	Total
Riparian Stream Miles Acquired	Stream type 1	-	1.79	-	0.48	-	0.37	0.07	-	-	2.71
	Stream type 2	-	-	-	-	-	-	1.98	-	-	1.98
	Stream type 3	-	0.87	1.06	0.25	0.26	-	11.50	-	-	13.94
	Stream type 4	-	4.19	-	-	0.16	0.01	28.20	-	-	32.56
	Stream type 5	-	8.99	-	0.09	0.53	-	86.28	-	-	95.89
	Stream type 9	-	7.66	0.06	1.63	0.20	-	70.32	-	-	79.87
	Total Miles	-	23.50	1.12	2.45	1.15	0.38	198.35	-	-	226.95
Riparian Stream Miles Disposed	Stream type 1	-	(0.74)	(0.34)	-	-	-	-	-	-	(1.08)
	Stream type 2	-	-	-	-	-	-	-	-	-	-
	Stream type 3	-	(3.71)	(1.77)	(0.06)	-	(1.79)	-	-	-	(7.33)
	Stream type 4	-	(1.85)	(2.40)	-	-	(0.93)	(0.07)	-	-	(5.25)
	Stream type 5	-	(1.27)	(1.68)	(0.30)	-	(5.90)	-	-	-	(9.15)
	Stream type 9	-	(3.21)	(9.06)	-	-	(6.22)	(0.08)	-	-	(18.57)
	Total Miles	-	(10.78)	(15.25)	(0.36)	-	(14.84)	(0.15)	-	-	(41.38)
Rain on Snow/Slopes Acquired	Rain on Snow	-	3.69	-	-	-	-	8,254.70	-	-	3.69
Rain on Snow/Slopes Disposed	Rain on Snow	-	-	(1,676.40)	-	-	-	-	-	-	(1,676.40)
Age class Acquired	Open 0-10	-	255.23	-	14.52	26.45	-	63.77	-	-	359.97
	Regeneration 11-20	-	86.08	8.90	10.32	13.00	-	126.01	-	-	244.31
	Pole 21-40	-	2,107.14	-	693.24	-	15.00	4,553.32	-	-	7,368.70
	Closed 41-70	-	124.12	-	98.19	-	-	7,709.12	-	-	7,931.43
	Complex 71-100	-	-	62.00	6.00	-	-	2,149.12	-	-	2,217.12
	Complex 101-150	-	-	-	17.52	-	-	850.54	-	-	868.06
	Functional 150+	-	-	-	13.42	-	-	385.94	-	-	399.36
	Total Acres	-	2,647.90	130.00	976.66	86.45	15.00	20,956.33	-	-	24,812.34
Age class Disposed	Open 0-10	-	(196.23)	(167.90)	-	-	(157.26)	(77.00)	-	-	(598.39)
	Regeneration 11-20	-	(549.06)	(92.39)	-	-	-	(261.18)	-	-	(902.63)
	Pole 21-40	-	(556.00)	(351.30)	-	-	(691.50)	(103.96)	-	-	(1,702.76)
	Closed 41-70	-	(233.47)	(195.17)	-	-	(69.70)	(9.89)	-	-	(508.23)
	Complex 71-100	-	(186.05)	(436.54)	(110.58)	-	-	(108.78)	-	-	(841.95)
	Complex 101-150	-	(82.93)	(765.50)	-	-	-	-	-	-	(848.43)
	Functional 150+	-	-	-	-	-	-	-	-	-	-
	Total Acres	-	(2,081.69)	(2,356.72)	(120.00)	-	(1,066.08)	(608.57)	-	-	(6,233.06)

Monitoring and Adaptive Management

Implementation Monitoring

Implementation monitoring supports continual improvement of HCP procedures by assessing and documenting implementation of a wide variety of activities. In 2010, monitoring efforts focused on timber sales implemented under the *HCP Amendment No. 1 Administrative Amendment to the Northern Spotted Owl Conservation Strategy for the Klickitat HCP Planning Unit* and a review of the number of snags retained on Westside timber sales. In addition, a study was initiated using Socet Set (digital mapping software) in combination with photogrammetry and geospatial analysis to estimate widths of riparian management zone (RMZ) throughout Westside timber sales.

Implementation Monitoring Accomplishments

- Post-harvest Northern Spotted Owl habitat was monitored in Klickitat HCP Planning Unit. In an effort to reduce program costs, monitoring was conducted on two of the four habitat characteristics required to be present for a stand to be considered suitable spotted owl habitat — canopy closure and leave trees per acre (snags and down wood were not measured). Results are pending and will be reported in the 2010 Implementation Monitoring Report.
- Post-harvest snag counts were completed on three out of five of the sales sampled. Two remaining sales have not yet been harvested.
- In an effort to reduce program travel costs, a study was initiated to



determine whether Socet Set could be used as an office based data collection tool that would provide results similar to those measured in the field. Nearly two hundred RMZ's were measured using a combination of Socet Set, photogrammetry, LiDAR, and geospatial analysis.

A detailed report on these projects can be found on the implementation monitoring page of DNR's website:

www.dnr.wa.gov

Effectiveness Monitoring

The aim of trust lands HCP effectiveness monitoring is to determine whether implementation of the conservation strategies results in the anticipated habitat conditions. As specified in the HCP (p. V.2), effectiveness monitoring relies upon field-based before-and-after comparisons. Changes in habitat conditions are evaluated both in the short-term (one to three years after harvest) and over the life of the HCP. Effectiveness monitoring strives to reveal the cause-and-effect relationships between implementation of the conservation strategies and the resulting habitat conditions.

Riparian silviculture effectiveness monitoring

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. Multiple sites (seven sites since 2006) have been established adhering 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 RFRS.



Figure 1. Permanent plot used for riparian effectiveness monitoring recently thinned to RD 40.

Current activities

Re-measurement of existing sites is taking place as resources allow. As part of the adaptive management process, we are actively working with our foresters to establish demonstration sites to illustrate results of management in stands within riparian areas that are 70 years of age and older.

Future activities

As resources allow, we hope to incorporate windthrow monitoring using remote sensing on effectiveness monitoring sites and other stands in which the RFRS has been implemented.

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. The importance of this paper is in the linking of reach-level water temperature recovery with watershed history.

Future activities

The next two projects planned for riparian in-stream monitoring are “on hold” for the foreseeable future due to lack of funding. Both projects would occur on the OESF and would be cooperative efforts, involving scientists from NOAA fisheries research lab in Seattle. The projects are covered by the existing in-stream conditions and trends effectiveness monitoring plan.

Proposed Project 1 would continue testing a hypothesis generated from Pollock et al. 2009. The hypothesis would address the role of channel condition on the rate of temperature recovery of previously logged watersheds.

Proposed Project 2 would utilize and re-measure an existing data set first established 10 years ago that tracks in-stream Large Woody Debris (LWD) in OESF streams. This project would directly link adjacent stand condition with in-stream wood dynamics. We would calibrate an existing LWD recruitment model that uses existing data—on both fish and habitat condition, and fish-carrying capacity and production—to describe the influence of passive and active Riparian Management Zone management on in-stream habitat.

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. Due to budget constraints, the five-year stand response field data collection for the Lyon’s Share monitoring site was postponed. Instead, the focus of 2010 work has been to complete canopy and stand data analysis for the five established monitoring sites and prepare progress reports that summarize 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 a progress report summarizing the data is in progress, and anticipated to be completed in 2011.

Adaptive Management

The trust lands HCP includes provisions for continual improvement of its implementation. The adaptive management component of the HCP is an important tool for facilitating ongoing modifications of DNR's conservation strategies in order to respond to monitoring information and new scientific developments. Three notable areas made significant progress in 2010. They are related to old forest and legacy structure operational guidance and the management along streams.

Eastside Legacy Management

Lands managed for Northern Spotted Owl habitat on the east flank of the Cascades now have new guidance for leave tree selection. A legacy tree procedure was developed, specifying a selection process for legacy trees that uses crown form and bark characteristics, as described in *Identifying Old Trees and Forests in Eastern Washington* Van Pelt, 2008. This procedure, called *Retention and Perpetuation of Legacy Trees, Snags and Downed Wood (eastside)*, was signed in June 2010. The procedure currently is being implemented. Minor changes in wording are expected to further clarify the procedure, and are expected to be completed during the winter of 2011. The new approach will ensure retention of the oldest trees, which are quite rare on the landscape and have the structural attributes favored by many wildlife species.

Riparian Forest Restoration Strategy implementation in 70-year old stands

The 2006 *Riparian Forest Restoration Strategy* specified an adaptive management cycle to be initiated after three years of implementation. That process is underway, and has focused review on the interim restriction of restoration treatments to stands less than 70-years of age. Of the acreage completed in restoration timber sales since implementation began, 50 percent of the stands were at least 70-years old. DNR is actively developing demonstration sites in stands with origin dates 70-years and older to illustrate how stands, regardless of age, are managed to improve habitat and ecosystem health under the Riparian Forest Restoration Strategy.

Headwaters Conservation Strategy

The Draft *Headwaters Conservation Strategy* was produced to complete the HCP Riparian Conservation Strategies. It represents a several-year collaborative effort between the Federal Services, the scientific community, and DNR managers. The strategy incorporates emerging ideas about the importance of non-fish-bearing stream habitat for ecosystem conservation, and the linkage to downstream fish habitat quality. The strategy provides clear guidance to prioritize site-specific protections and integrate with other existing leave areas to maximize conservation effectiveness.

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

Publication continues regarding research carried out on state trust lands related to the Draft *Headwaters Conservation Strategy*. These papers contain results that will be considered in the refinement of the strategies for headwaters and other riparian conservation through the ongoing adaptive-management process.

- Wilk R. J., M. G. Raphael, C. S. Nations, J. D. Ricklefs. 2010. Initial response of small ground-dwelling mammals to forest alternative buffers along headwater streams in the Washington Coast Range, USA. *Forest Ecology and Management* 260:1567–1578
- Janisch, J. E., Wondzell, S. M., and Ehinger, W. J. (under revision). Six years of headwaters temperature monitoring: riparian buffer effectiveness in logged small catchments, Washington, USA. Submitted to *Canadian Journal of Aquatic and Fisheries Sciences*. March, 2010.

Olympic Experimental State Forest Research and Monitoring Program

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

It is comprised of four program areas:

- monitoring of HCP conservation strategies,
- research projects,
- adaptive management, and

- program coordination and outreach.

Funding request submitted to Congress for OESF research

In February 2010, DNR applied for funding from the United States Congress to support researchers from the US Forest Service, Pacific Northwest Research Station, and other scientists to conduct studies in the OESF. The three research proposals, included in the request, were selected for their relevance to the critical management uncertainties faced by DNR and other local natural resources managers:

1. A landscape-based approach to riparian management and conservation in the OESF;
2. Silvicultural research in young forests to accelerate development of older forest attributes; and
3. Long-term ecosystem productivity and carbon sequestration in a changing climate.

The research proposals were reviewed and officially supported by a number of DNR stakeholders—including the environmental caucus, timber industry, and state trust beneficiaries, as well as potential research collaborators. The request is pending review in the US House Interior Appropriations Subcommittee.

Coordination with the OESF Forest Land Planning Project

The Research and Monitoring Program contributes to the OESF forest land planning process by integrating research and monitoring activities with planned management activities. This includes prioritizing management uncertainties identified through Environmental Impact Statement (EIS) analyses; proposing specific research and monitoring projects to reduce key uncertainties, and developing an adaptive management process for the OESF. Some of this work was included in the Draft EIS, published in June 2010. More information will be presented in the final EIS and the Forest Land Plan. Both documents are expected to be released in 2011.

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 are to identify and evaluate existing sources of information on natural disturbance regimes on the western Olympic Peninsula, and to develop an annotated bibliography. The information will be used in the future to characterize habitat complexity as afforded by natural disturbance regimes—a target condition envisioned by the OESF riparian conservation strategy (HCP, p. IV 107). This project started in April 2010, with funding provided by US Forest Service, Pacific Northwest Research Station. The final report is expected by April 2011.

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

The project creates an automated data transfer process, maintained by DNR 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 in response to the OESF recent joining of the Forest Service's Experimental Forest and Range Network. The network includes 70 experimental forests and ranges nationwide, and promotes data-sharing and collaborative research. Funding is provided by the US Forest Service, Pacific Northwest Research Station. The work is conducted in collaboration with the Olympic Natural Resources Center in Forks. The project started in August 2010 and is expected to be completed in late 2010.

Marbled Murrelet Long-term Conservation Strategy

Long-term Conservation Strategy for the Olympic Experimental State Forest, Straits, South Coast and Columbia Planning Units

Development of the Marbled Murrelet Long-term Conservation Strategy is a priority for DNR. The planning process for the project has been reinitiated. Current tasks under development are internal scoping and staffing of the project. Recruitment of a Project Manager to direct the project is underway. The project is expected to be fully staffed and well under development by the end of 2011.

Interim Marbled Murrelet Strategy – South Puget and North Puget Planning Units

Implementation of the Interim Marbled Murrelet Conservation Strategy for South Puget and North Puget HCP planning units is currently on hold. For both planning units, letters of concurrence with the USFWS (US Fish and Wildlife Service) are in place. The documents provide interim guidance for protection of occupied sites and un-surveyed suitable habitat.

Forest Certifications

Sustainable Forestry Initiative® Program (SFI®): Fiscal Year 2010 SFI Surveillance Audit

The FY 2010 surveillance audit was conducted by an independent-third party auditing firm and was held in DNR's South Puget Sound and Pacific Cascade Regions in June 2010. The focus of the audit was to verify forest management and silviculture activities, fish blockage removals, wildlife and riparian protections, natural area conservation measures and recreation opportunities provided to the public. Discussions also involved field studies and public awareness regarding management activities. Field files for each site were reviewed and used to determine the effectiveness of DNR's forest management system and process. A total of 27 sites were visited during the two days in the field.

The auditors noted that DNR forest certification staff is very effective in managing DNR's Sustainable Forestry Initiative Program and preparing field audit packets. The auditors also noted that DNR staff is very knowledgeable of forest management operations, and that all field files were complete. The auditors continue to be impressed with DNR's vision for landscape planning and willingness to cooperate and collaborate with other stakeholders to implement management strategies to improve habitat.

The audit resulted in DNR receiving one minor 'Non-Conformance' dealing with multiple skid trails and excessive rutting; three 'Opportunities for Improvement' dealing with seedling damage, inadequate utilization and logger training; and five 'Notable Practices' dealing with efforts in re-establishment of cedar, wetland protection measures, climate change efforts, working with the public in educational opportunities and efforts to promote forestry and development of the modified Dispersal Habitat Strategy in the South Puget Planning Unit. The SFI audit team has accepted DNR's corrective action plan addressing the one Non-Conformance related to excessive rutting.

It's the opinion of the third party auditing team that DNR continues to meet the SFI requirements and has effectively implemented the SFI 2010-2014 Standard. Bureau Veritas recommends continued certification.

Forest Stewardship Council® (FSC®):

Fiscal Year 2010 FSC Surveillance Audit

The FY 2010 surveillance audit was conducted by an independent-third party auditing firm, and was held in the South Puget HCP Planning Unit in November 2009. The surveillance audit included checking on the progress of one outstanding 'Corrective Action Request' from the previous audit held December 2008 (ensuring that invoices for FSC timber include the product group (FSC Pure) and the certificate number), consulting with stakeholders (focusing on relationships, communications, outstanding issues, merit of the certificate and billing practices), and to extend the scope of the certificate to include additional acres being managed within the planning unit due to land acquisitions.

A variety of timber sale invoices were examined during the audit along with all the related sales documentation for lump sum, scale and contract harvest type sales. In all cases the invoices contained the appropriate language, ultimately adhering to the standard and clearing the previously issued 'Corrective Action Request.'

All contacted stakeholders expressed satisfaction with DNR and were more concerned with recent staff and budget reductions than with FSC certification within the South Puget HCP Planning Unit.

A variety of sites were chosen for the field verification portion of the audit. Selection was based on the desire to address all phases of forest management, including planning, herbicide applications, fish passage restoration projects, natural areas, road abandonment projects and recreation sites. All harvest areas were inspected to determine their condition; whether there had been any significant soil disturbance, were boundaries respected, was the site regenerating, and if there was damage to residual trees. All areas examined met the forest management standards of the region. A total of 25 sites were visited during two days in the field.

During the FY 2010 audit, one 'Corrective Action Request' was issued, related to ensuring that shipping documents for FSC timber include the product group (FSC Pure) and the certificate number. In May 2010, DNR provided the lead FSC auditor with the acceptable shipping documents to clear this 'Corrective Action Request'. No new recommendations were put forth and no major '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. All outstanding minor 'Corrective Action Requests' have been addressed and closed. The FSC audit team recommends that certification of DNR's South Puget HCP Planning Unit continue; FSC's Wood and Forestry Department has confirmed agreement.

Wetland Identification and Protection Training

During spring of 2010, wetland training for field staff was completed for all of the districts of Pacific Cascade Region and two work groups in South Puget Sound Region. Training is planned for the remaining South Puget Sound Region work group, the two districts of Olympic Region and the two districts of Northwest Region in spring of 2011. Training includes both office and field components, and focuses on wetland functions and values, wetland definition, DNR wetland policy, HCP riparian strategy for wetlands, recognition of wetland hydrology, soils and plants, and other material relevant to the recognition, delineation and protection of wetlands on DNR timber sales.