Oil and Gas Leases - There are approximately 77 existing leases and most are in the Puget Sound lowlands. Some are small leases but most leases cover full legal sections. The total acreage affected by all oil and gas leases is approximately 20,000 to 25,000 acres. Much oil and gas exploration is accomplished through a process known as "thumping." Thumping is the measurement of siesmolgocial tremors caused by the dropping of extremely large weights or the detonation of explosives. Exploration may also be acomplished through drilling. The on-site operations of exploratory wells can generally be contained in 5 acres or less. Historically, surface disturbance on these sites has been minimal. Only two wells have been drilled on DNR-managed land. One of these wells is currently being used for active exploration, and the other well has been abandoned and plugged. No oil or gas is currently produced on DNR-managed land. In fact, no oil or gas is currently produced in the state of Washington. All oil and gas leases go through a phased review under SEPA before the parcel is auctioned.

Potential adverse impacts of exploration and extraction on air and water are regulated by the Department of Ecology. Water quality in the vicinity of underground and open pit mines is protected through the National Pollutant Discharge Elimination System Permit Program (WAC 173-220). The Department of Ecology administers this program and issues individual permits only to facilities that can meet the surface and groundwater standards described in WAC 173-201A and WAC 173-200, respectively.

Oil and gas wells are regulated through the Oil and Gas Conservation Act (78.52) which is enforced by DNR. Sufficient safeguards to minimize hazards of pollution of all surface and ground waters is required. If acceptable safeguards cannot be provided, then a drilling permit is is not issued (RCW 78.52.125). Exploration holes drilled in search of oil or gas deposits must be plugged in a manner as to prevent the pollution of fresh water supplies (RCW 78.52.150). DNR would also require that the site be restored. For example, if the site was used for timber production before exploration, then, where feasible, the site would be restored for continued timber production.

Because the location and scope of eventual activities are not known, the initial SEPA review does not include details (for example, the management of riparian zones), but subsequent phased reviews would occur if and when additional activities are planned, and the depth of the review would depend on the activities planned. Before any surface disturbing work is conducted on a leased area, the lessee must file a plan of operations that is reviewed by the DNR administrative Region. Under the HCP, the activities would be reviewed to ensure compliance with the commitments of the HCP. Roads may be constructed during oil and exploration or extraction. Typically, these roads are part of the same road network used for forest management and would be subject to the same conservation measures for design, construction, use, maintenance, and abandonment described in the HCP. Oil or gas produced at a well site may be transported by truck or by pipeline. Pipeline construction is also subject to SEPA review.

Grazing Permits - There are approximately 15 permit and 6 leased ranges located in Yakima and Klickitat counties (approximately 100,000 acres) and the Methow valley (approximately 5,000 acres). Grazing occurs only on DNR-managed lands east of the Cascade crest where DNR is not applying for unlisted species agreements.

Electronic Site Leases - There are 427 leases with 100 sites, totaling 106 acres, currently extant. Hence, electronic sites average only about 1 acre in size. Approximately 80 percent of the sites are on non-forested mountain tops and the remaining 20 percent are on second-growth highway corridors. Roads are constructed to access electronic sites, but these roads are part of the same road network used for forest management and would be subject to the same conservation measures for design, construction, use, maintenance, and abandonment described in the HCP. Occasional disturbance to wildlife may occur during periodic visits for maintenance and improvements. On DNR-managed lands the impacts of electronic site leases relative to the impacts of timber management are *de minimus*.

Recreational Sites - Policy No. 29 of the Forest Resource Plan addresses recreation on state forest lands. It says:

> "The department will allow recreation on state forest land when compatible with the objectives of the Forest Resource Plan. As part of its efforts, the department will continue to comply with the Statewide Comprehensive Outdoor Recreation Plan."

There are approximately 150 total sites, most affecting less than 20 acres, and 2 to 3 large (300 to 600 acres), leased sites. Acreage by DNR administrative Region is Olympic = 141 acres, Central = 696 acres, South Puget Sound = 315 acres, Southwest = 159 acres, Northwest = 515 acres, Northeast =783, and Southeast = 630 acres. Total area of recreational sites is 3,239 acres. Many, if not most, recreational sites have been built in riparian areas. Under the HCP, future development of recreation sites would adhere to the riparian conservation strategy (HCP Chapter IV.D). Recreational activities conducted in DNR-managed forests include hiking, biking, horseback riding, skiing, ORV use (e.g., motorcycles, snowmobiles, 4-wheel drive trucks), and camping. Some trails, including those used by ORVs, are located within riparian areas. DNR is concerned about damage to aquatic resources caused by recreational activity in high use areas, and has undertaken a program in the Tahuya State Forest to develop and monitor measures that will mitigate these impacts. In general, on DNR-managed lands the impacts of recreational activity relative to the impacts of timber management are *de minimus*.

Activities in the East-side Planning Units

pg. IV.172 - add to end of the second paragraph:

...However, current insect populations indicate it is reasonable to expect between 2,000 and 15,000 acres of treatment in the east-side planning units during the first decade. Appropriate treatment might include site-specific application of insecticides. At some of these sites the application of insecticides could result in the incidental take of federally listed invertebrate species. Such activities shall be covered under the incidental take permit except for aerial application of pesticides, which shall be covered upon the Service's approval of a site-specific plan presented by DNR. If the Service disapproves such a plan, or if Service approval of such a plan is not forthcoming within 30 days of the Service's receipt of the plan, a multi-agency science team may be convened to resolve questions regarding the biological basis of the Service's decision.

Activities in the Five West-side Planning Units

pg. IV.175 - add to end of the fourth paragraph:
...Should unforeseen attacks by forest defoliators occur, they might require appropriate treatment to be determined at that time. Such appropriate treatment might include site-specific application of insecticides. At some of these sites the application of insecticides could result in the incidental take of federally listed invertebrate species. Such activities shall be covered under the incidental take permit except for aerial application of pesticides, which shall be covered upon the Service's approval of a site-specific plan presented by DNR. If the Service disapproves such a plan, or if Service approval of such a plan is not forthcoming within 30 days of the Service's receipt of the plan, a multi-agency science team may be convened to resolve questions regarding the biological basis of the Service's decision.

pg. IV.178 - change second full paragraph on page and separate into two paragraphs:
Various methods can be used to control competing vegetation. Site-specific conditions and management objectives are considered when choosing a control method. Forest Resource Plan Policy No. 33 tacitly directs DNR to minimize the use of herbicides. The policy directs DNR to weigh the effectiveness of herbicide use against likely adverse effects on public water supplies, public health, fish health, and fish and wildlife habitat. The strategy for minimizing herbicide use presented in Policy No. 33 (1992) is a conservation measure which is part of DNR's HCP.

Hand slashing or cutting of unwanted vegetation , ground or aerial application of herbicide, and combinations of these methods may be used...

Activities in the Olympic Experimental State Forest Planning Unit

pg. IV.181 - change last paragraph on page:
Due to the experimental nature of the OESF, it is difficult to quantify potential management activities. However, based on current inventory, the conservation strategies, and potential harvest opportunities, one can reasonably expect approximate ranges described in Table IV.~~14~~ 15 at the end of this section...

V. Plan Implementation

Monitoring

pg. V.1 - change last paragraph:
...Such monitoring will be primarily accomplished through ~~reporting methods that rely upon DNR's geographic information system and the use of remote sensing data and will likely involve little field data collection. Limited field work may be necessary to evaluate these methods.~~ DNR's planning and tracking, and geographic information systems. Statistically valid sampling of management activities will be conducted to evaluate the reliability of information stored in these databases.

pg. V.1 - insert subheadings and text before Monitoring heading:

Funding

DNR shall submit to the Washington State Legislature, on at least a biennial basis, an agency operating and capital budget for asset management that will be adequate to fulfill DNR's obligations under the HCP, ITP, and IA. Failure by DNR to ensure that adequate funding is provided to implement the HCP shall be grounds for suspension or partial suspension of the ITP.

Transition Activities

Timber sales prepared by DNR normally require approximately 24 months of preparation between the planning of the sale and its eventual auction. The HCP conservation strategies call for certain actions to occur (for example, the designation of the 300-acre spotted owl nest patches) and certain materials be prepared (for example, implementation guidelines for riparian areas) in the first year after approval. Additionally, once implementation guidelines are completed, training will be required for DNR staff. For these reasons, following approval of the HCP and issuance of the ITP, a transition period will be required. Timber sales in the DNR "pipeline" at the time of approval of the HCP will continue to be brought forward by DNR through the end of calendar year 1998, provided such sales are consistent with spotted owl survey agreements in effect between DNR and the USFWS. Such sales will not include known occupied marbled murrelet sites or unsurveyed, suitable marbled murrelet habitat. Because of current DNR actions such as spotted owl survey efforts and the deferral of sale of marbled murrelet habitat, it is believed that take of any listed species will be limited to non-existent. Mitigation for any such take has been included in the conservation strategies contained within the HCP.

pg. V.2 - change second paragraph:

Validation monitoring, which will occur only within the OESF Planning Unit, will document spotted owl and marbled murrelet use of areas managed to provide nesting habitat, and salmonid use of streams crossing DNR-managed lands. For spotted owls and marbled murrelets, ~~v~~Validation monitoring will rely upon surveys to detect changes in site occupancy, numbers and locations of breeding pairs, and reproduction, as appropriate for each species. For salmonids, validation monitoring will employ surveys to detect changes in the productivity of spawning adults and salmon-habitat relationships. As an additional objective for the OESF, validation monitoring reflects the emphasis on experimentation that defines the OESF...

pg. V.2 - change third paragraph:

...Implementation and effectiveness monitoring will be carried out for all of these major strategies. ~~In addition, validation monitoring will be carried out for spotted owl and marbled murrelet nesting habitat in the OESF. However, validation monitoring will not be undertaken for other conservation strategies.~~ The spotted owl conservation strategy, current spotted owl and marbled murrelet habitat, and current riparian ecosystem conditions are not uniform across planning units. Effectiveness monitoring will necessarily be tailored to the conservation strategy and habitat or ecosystem conditions in each planning unit.

pg. V.2 - add to the beginning of the fourth paragraph:
Validation monitoring will be carried out for spotted owl nesting habitat, marbled murrelet nesting habitat, and salmonid habitat in the OESF. Validation monitoring will not be undertaken for the other conservation strategies or in other planning units. ~~Nor will v~~Validation monitoring will not be undertaken for spotted owl dispersal habitat. ~~Because t~~ The OESF spotted owl conservation strategy does not draw the management distinction between NRF habitat and dispersal habitat that prevails in other HCP planning units~~, this issue does not pertain there~~. In the other planning units, an evaluation of the cause-and-effect relationship between conditions on DNR-managed lands and the ability of juvenile spotted owls to disperse successfully across the landscape would be difficult to design, expensive to implement, and impractical to undertake, given the distribution of DNR-managed lands...

pg. V.2 - last paragraph:
Validation monitoring for salmonid habitat will be focused to detect changes in the productivity of spawning adults and salmon-habitat relationships, parameters that are not affected by marine conditions and downstream fisheries ~~will not be undertaken for riparian/salmonid habitat~~. This will involve estimating numbers of spawning adults and numbers of recruits, (i.e., out migrating smolts or rearing juveniles), and surveying different stream habitat types and conditions to determine fish numbers, species composition, and densities. Validation monitoring for salmonid habitat will be conducted in an appropriate watershed unit comprised primarily of DNR-managed lands, to minimize the potential influences of management activities not under DNR's control. ~~Attempts to evaluate cause-and-effect relationships between conditions on DNR-managed lands and salmonid populations would be confounded by the watershed-level effects of a wide range of forestry and non-forestry activities involving other jurisdictions, and by at-sea effects including salmon fisheries. Resources for monitoring the HCP's success in providing riparian/salmonid habitat will be better directed at in-stream and bank conditions, and riparian forest conditions throughout the west-side HCP planning units. Data needed to "validate" the model underlying the OESF riparian conservation strategy will be colleted as part of effectiveness monitoring or through research.~~ Validation monitoring will not be conducted for any other, non-salmonid fish species, or for wildlife species (other than spotted owls and marbled murrelets) influenced by the riparian/salmonid conservation strategy.

pg. V.3 - change first full paragraph:
Effectiveness and validation monitoring need not be undertaken while the interim murrelet conservation strategy is in effect. Although lower quality habitat types that support up to 5 percent of the total murrelet use of DNR-managed lands within each of the five west-side and the OESF planning units may be harvested under the interim strategy, DNR will not alter or manage the ~~95 percent~~ higher quality murrelet nesting habitat which supports 95 percent of potentially occupied sites during this period...

pg. V.3 - add new paragraph prior to heading "Monitoring Procedures":
DNR recognizes the substantial financial commitment that the HCP monitoring program entails. DNR will provide adequate funding for monitoring to the extent that DNR is given the flexibility to make such budget decisions. DNR shall request funds from the

Legislature to cover the costs of the monitoring program. The exact funding level may vary from year to year, depending on actions of the Legislature.

pg. V.3 - change last paragraph:
...Monitoring procedures will be prepared by ~~DNR in consultation with the U.S. Fish and Wildlife Service~~ a team of scientists from DNR, U.S. Fish and Wildlife Service, and National Marine Fisheries Service. Implementation, effectiveness, and validation monitoring procedures will be completed and reviewed before forest management activities consistent with a conservation strategy are first undertaken. Tables V.2 and V.3 outline some of the environmental variables that will be measured as part of effectiveness monitoring for the spotted owl and riparian conservation strategies, respectively.

Research

pg. V.5 - change both bullets and add a third bullet under subheading Priority 2 - Riparian:

- Determine how to harvest timber and meet conservation objectives within riparian ~~buffers~~ areas.

- Determine how to harvest timber and meet conservation objectives on hillslopes with high mass-wasting potential without triggering land slides and causing adverse effects to fish habitat.

- Determine the best approach to growing healthy riparian buffers while managing the buffer for economic return.

pg. V.6 - change the first bullet on page:

- Determine whether it is possible to harvest timber at or near breeding sites and meet conservation objectives.

pg. V.6 - delete last bullet on page and make a sentence:
Other research topics may arise as the HCP is implemented and new knowledge is obtained.

Reporting	No change
VI. Alternatives to the Habitat Conservation Plan that Would Avoid Take	No change
No Action/No Change (Current Practices)	No change
No Harvest/No Take	No change
A Appendix	No change
Geographic Analysis	No change

B Appendix

Draft Implementation Agreement (Under separate cover)

(Note: The complete revised Implementation Agreement is published as final is Appendix 4 of the Final EIS.)

References

Chapter I Literature Cited — No change
Chapter II Literature Cited — No change

Chapter III Literature Cited

Add to the reference list:

Kasworn, W. F., and T. L. Manley. 1989. Road and trail influences on grizzly bears and black bears in northwest Montana. Int. Conf. Bear Res. and Manage. v. 8, p. 79-84.

Mace, R. D., and T. L. Manley. 1993. South Fork Flathead River Grizzly Bear Project: Progress Report of 1992. Montana Department Fish, Wildlife, and Parks, Helena, MT.

McLellan, B. N., and D. M. Shackleton. 1988. Grizzly bears and resource-extraction industries: effects of roads on behaviour, habitat use, and demography. Journal of Applied Ecology. v. 25, p. 451-460.

Chapter IV Literature Cited

Add to the reference list:

Anthony, R. G., R. L. Knight, G. T. Allen, B. R. McClelland, and J. I. Hodges. 1982. Habitat use by nesting and roosting bald eagles in the Pacific Northwest. *In* K. Sabol, ed. Transactions of the forty-seventh North American Wildlife and Natural Resources Conference, Portland, OR. 1982. Wildlife Management Institute, Washington, DC. p. 332-242.

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Lyon, L. J. 1979. Habitat effectiveness for elk as influenced by roads and cover. Journal of Forestry. v. 77, no. 10, p. 658-660.

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Mongillo, P. E. 1993. The distribution and status of bull trout/Dolly Varden in Washington State, June 1992. Washington Department of Wildlife, Fisheries Management Division, Olympia. Report no. 93-22. 45 p.

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Perry, C., and R. Overly. 1977. Impact of roads on big game distribution in portions of the Blue Mountains of Washington, 1972-73. Washington Game Department Appl. Res. Sect., Bull. 11, Olympia. 39 p.

Pyle, R. M. 1989. Washington butterfly conservation status report and plan. Washington Department of Wildlife, Nongame Program, Olympia. 217 p.

Raley, C. M., G. W. Tumb, and K. B. Aubrey. 1994. Characteristics of roost trees used by pileated woodpeckers on the Olympic Peninsula in western Washington. Abstract. 112th Annual Meeting, American Ornithologists' Union, Missoula, MT.

Thomas, J. W. et al. 1993. Viability assessments and management considerations for species associated with late successional and old-growth forests of the Pacific Northwest. U.S. Department of Agriculture, National Forest System, Forest Service Research, Washington, D.C. 530 p.

U. S. Department of the Interior. 1993. Grizzly bear recovery plan. U.S. Department of the Interior, Fish and Wildlife Service, Missoula, MT. 181 p.

U.S. Fish and Wildlife Service. 1984. Northern Rocky Mountain wolf recovery plan. U.S. Department of the Interior, U.S. Fish and Wildlife Service, Denver, CO.

U. S. Fish and Wildlife Service. 1987. Northern Rocky Mountain wolf recovery plan. U.S. Department of the Interior, U.S. Fish and Wildlife Service, Denver, CO. 119 p.

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pg. 47 - delete from reference list:

~~Washington Department of Natural Resources, Olympic Region. 1995. Clallam River landscape plan. Washington Department of Natural Resources, Olympic Region, Forks, WA. 86 p.~~

Chapter V Literature Cited	No change
Unpublished References	No change
Personal Communications	No change
Glossary	No change

Tables

I.1	DNR-managed HCP lands by dominant size class and area for uneven-aged stands	No change
I.2	Acreage by ownerships in the area covered by the HCP	No change
I.3	Vegetative zones in the area covered by the HCP	No change
I.4	Major features and acreage of DNR-managed lands by planning unit and planning area	No change
III.1	Estimates of forest cover types on lands of different ownerships in the Olympic Experimental State Forest area, July 1991	No change
III.2	Northern spotted owl site centers on or affecting DNR-managed lands as of the end of the 1995 survey season	No change
III.3	Characteristics of nest stands used by the marbled murrelet	No change
III.4	Characteristics of nest trees used by the marbled murrelet	No change
III.5	Old-growth, large-saw, and small-saw forests below 3,500 feet and less than 66 miles from marine waters, by ownership	No change
III.6	Allocation of survey areas in each planning unit, by habitat type and distance from marine waters	No change
III.7	Prescribed number of visits for each survey area for both years of the DNR marbled murrelet forest habitat relationships studies	No change
III.8	Federally listed wildlife, their state status, and their potential occurrence in HCP planning units	No change
III.9	Life cycles of western Washington anadromous salmonids in freshwater, by species and run	No change
III.10	Status of salmonid stocks in the five west-side planning units and the Olympic Experimental State Forest	No change
III.11	Percent of DNR-managed forest land west of the Cascade crest in Watershed Analysis Units that contain salmonids	No change
III.12	Estimated miles of fishbearing streams on DNR-managed lands west of the Cascade crest	No change
III.13	Percent of total land area west of the Cascade crest that impacts salmonids and is managed by DNR	No change

pg. III.75 - change Table III.14

Table III.14 Other species of concern, by federal and state status and their potential occurrences in the HCP planning units

Federal candidate, category 1 - Substantial data support listing the species as endangered or threatened; listing proposals are either under way or delayed.

Federal candidate, category 2 - Data point to listing species but not conclusively; additional data are being collected.

Under state status, S = state; E = endangered; T = threatened; C = candidate; M = monitor; G = game; Sen = sensitive. OESF = Olympic Experimental State Forest.

		Planning Unit								
Species	**State status**	**Klickitat**	**Columbia**	**South Coast**	**South Puget**	**Yakima**	**Chelan**	**North Puget**	**Straits**	**OESF**
Federal candidate ~~- category 1~~										
spotted frog	SC	X	X		X	X	X	X		
Federal ~~candidate - category 2~~ species of concern										
Newcomb's littorine snail	SM			X						
California floater	—	X	X			X	X			
great Columbia River spire snail	SC	X	X							
Beller's ground beetle	SC				X			X		
Hatch's click beetle	SC				X			X		
Fender's soliperlan stonefly	—		X		X					
~~Lynn's clubtail~~	—	~~X~~				~~X~~				
river lamprey	—		X	X	X			X	X	X
Pacific lamprey	—	X	X	X	X			X	X	X
~~green sturgeon~~	—		~~X~~	~~X~~						
~~Olympic mudminnow~~	~~SC~~		~~X~~	~~X~~	~~X~~				~~X~~	X
Larch Mountain salamander	SSen	X	X							
tailed frog	SM	X	X	X	X	X	X	X	X	X
~~northern red-legged frog~~	—		~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~
Cascades frog	—	X	X		X	X		X	X	X

Table III.14 Other species of concern, by federal and state status and their potential occurrences in the HCP planning units *(continued)*

Species	State status	Planning Unit: Klickitat	Columbia	South Coast	South Puget	Yakima	Chelan	North Puget	Straits	OESF
Federal ~~candidate - category 2~~ species of concern *(continued)*										
northwestern pond turtle	SE	X	X		X			X		
~~Harlequin duck~~	~~SG~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
northern goshawk	SC	X	X	X	X	X	X	X	X	X
black tern	SM	X	~~X~~	~~X~~	~~X~~	X	X	~~X~~		
olive-sided flycatcher	—	X	X	X	X	X	X	X	X	X
~~little willow flycatcher~~	—	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
long-eared myotis	SM	X	X	X	X	X	X	X	X	X
fringed myotis	SM	X	X			X				
long-legged myotis	SM	X	X	X	X	X	X	X	X	X
small-footed myotis	SM	X	X			X				
~~Yuma myotis~~	—	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
~~spotted bat~~	—	~~X~~				~~X~~	~~X~~			
Townsend's big-eared bat	SC	X	X	X	X	X	X	X	X	X
Pacific fisher	SC		X	X	X	X	X	X	X	X
California wolverine	SM		X		X	X	X	X		
lynx	ST						X			
California bighorn sheep	SG					X	X			
State-listed, no federal status										
sandhill crane	SE	X	X							
western gray squirrel	ST	X			X	X	X			

Table III.14 Other species of concern, by federal and state status and their potential occurrences in the HCP planning units *(continued)*

Species	State status	Planning Unit: Klickitat	Columbia	South Coast	South Puget	Yakima	Chelan	North Puget	Straits	OESF
State candidate, no federal status										
green sturgeon	—		X	X						
long-horned leaf beetle	SC							X		
Dunn's salamander	SC			X						
Van Dyke's salamander	SC		X	X	X				X	X
California mountain kingsnake	SC	X	X							
common loon	SC			X	X		X	X	X	X
golden eagle	SC	X	X	X	X	X	X	X	X	X
Vaux's swift	SC	X	X	X	X	X	X	X	X	X
Lewis' woodpecker	SC	X	X	X	X	X	X	X	X	
pileated woodpecker	SC	X	X	X	X	X	X	X	X	X
purple martin	SC	X	X	X	X			X	X	
western bluebird	SC	X	X	X	X	X	X	X	X	
Other sensitive species										
Lynn's clubtail	—	X				X				
Olympic mudminnow	SC		X	X	X				X	
northern red-legged frog	—		X	X	X			X	X	X
Harlequin duck	SG	X	X	X	X	X	X	X	X	X
little willow flycatcher	—	X	X	X	X	X	X	X	X	X
Yuma myotis	—	X	X	X	X	X	X	X	X	X

III.15	Federally listed and proposed vascular plant taxa in the area covered by the HCP	No change

pg. III-101 and III-102 - create a new Table III.16

Table III.16: Federal candidate vascular plant taxa in the area covered by the HCP

NHP = Natural Heritage Program; POEX = possibly extinct or extirpated; E = endangered; T = threatened; S = sensitive; OESF = Olympic Experimental State Forest; WW = western Washington; EW = eastern Washington within the range of the northern spotted owl.

Scientific name	NHP status	HCP planning areas	Geographic area and/or habitat
Sidalcea oregana var.calva	E	EW	Wenatchee Mountains; meadow and forest

pg. III-101 and III-102 - renumber, rename, and change Table III.16:

Table III.~~16~~17: ~~Federal candidate~~ Federal species of concern vascular plant taxa in the area covered by the HCP

delete two species, add three new species and one footnote:

Scientific name	HCP status	HCP planning area	Geographic area and/or habitat
Astragalus australis var. *olympicus*	T	WW	NE Olympic Mts. talus/scree
Castilleja cryptantha	S	WW	Mt. Rainier moist meadows
Lathyrus torreyi	--**	WW	Clark, Pierce counties mixed conifer forest
~~*Poa unilateralis*~~	~~T~~	~~WW~~	~~Pacific County, ocean bluffs~~
~~*Sidalcea organa var. Calva**~~	~~E~~	~~EW~~	~~Wenatchee Mountains; exposed rock~~

** The NHP status of Lathyrus torriyi was undetermined as of August 1996. It was thought to be possibly extirpated until a population was discovered on McChord Air Force Base in 1994

IV.1	Spotted owl nest tree characteristics in western Washington	No change
IV.2	Spotted owl nest stand characteristics in western Washington	No change
IV.3	Recommended method for estimating habitat quality for spotted owls using tree- and stand-level indices of mistletoe infection	No change
IV.4	Summaries of current spotted owl habitat conditions by planning unit	No change

pg IV.78 - change the fourth column of Table IV.5:

Table IV.5: Two estimates of the current abundance of potential spotted owl habitat in proposed landscape planning units of the Olympic Experimental State Forest

Old Forest[3] inv./TM
3/9
~~2~~ 3/14
14/14
~~4~~ 5/23
~~25~~ 27/27
~~19~~ 21/18
22/23
~~16~~ 18/13
~~26~~ 30/25
~~13~~ 16/16
~~22~~ 23/16

IV.6 An estimate of the future abundance of potential spotted owl habitat in proposed landscape planning units of the Olympic Experimental State Forest and the forest at large based on one set of harvest regimes — No change

pg. IV.98 - change Table IV.7

IV.7 Expected average widths of interior-core riparian buffers in the Olympic Experimental State Forest

Buffer widths will be determined on a site-specific basis using the proposed 12-step watershed assessment procedure (see text) and might vary locally with landform characteristics. Average widths are not expected to vary significantly, however, because these values are derived from a statistical analysis of buffer protection previously applied to about 55 percent of DNR-managed lands in the OESF. (See text for discussion.) Widths are expressed for each stream type as average ~~slope~~ horizontal distances measured outward from the ~~active channel margin~~ 100-year flood-plain on either side of the stream.

Stream type	Width of riparian interior-core buffer (~~slope~~ horizontal distances, rounded to the nearest 10 feet)
1	150
2	150
3	100
4	100
5	width necessary to protect identifiable channels and unstable ground (see text)

pg. IV.105 - change Table IV.8:

Table IV.8: Proposed average widths of exterior riparian buffers in the Olympic Experimental State Forest

Widths are expressed as average ~~slope~~ horizontal distances measured outward from the interior-core buffer on either side of the stream. Widths are proposed as a working hypothesis and are based on local knowledge of windthrow behavior. Buffer widths and design will be evaluated through experiments in buffer design in the OESF. Buffers will be applied where necessary (see text).

Stream type	Width of riparian exterior buffer (~~slope~~ horizontal distances, rounded to the nearest 10 feet)
1	150
2	150
3	150
4	50
5	50

IV.9 Proposed protection of forested and nonforested wetlands in the Olympic Experimental State Forest — No change

pg. IV.111 - change Table IV.10

Table IV.10: Comparison of average riparian buffer widths expected as a result of applying the Olympic Experimental State Forest riparian conservation strategy and buffer widths proposed in the literature for several key watershed parameters

Buffer widths are given as average ~~slope~~ horizontal distances (or range of averages) outward from the active channel margin.

Key watershed parameter	Buffer width by stream type - proposed for the OESF				
	1	2	3	4	5
Mass wasting	150 ft all Type 1 streams will be protected	150 ft all Type 2 streams will be protected	100 ft all Type 3 streams will be protected	100 ft all Type 4 streams will be protected	0-500+ ft; depends on size of contribution area[1] and amount of unstable ground[2]
Mass wasting and windthrow combined	150 ft inner, 150 ft outer[3]	150 ft inner, 150 ft outer[3]	100 ft inner, 150 ft outer[3]	100 ft inner, 50 ft outer[3]	variable inner, 50 ft outer[3]

Key watershed parameter	Buffer width by stream type - proposed in the literature[4]				
	1	2	3	4	5
Coarse-woody-debris recruitment[5]	108-168 ft	108-168 ft	105-153 ft	105-153 ft	105-153 ft
Stream shade availability[5]	108-168 ft	108-168 ft	105-153 ft	105-153 ft	105-153 ft
Riparian forest microclimate[6]	300 ft	300 ft	250 ft for >5-ft-wide channels	125 ft	
Channel bank stability	Commensurate with mass-wasting buffer protection on stream channels.				
Lateral channel migration	Commensurate with combined mass-wasting and windthrow protection on stream channels.				
Water quality[5]	108-168 ft	108-168 ft	105-153 ft	105-153 ft	105-153 ft
Water quantity	Unknown. Objectives of proposed buffers are to help moderate peak-flow discharges related to removal of vegetation (e.g., harvest) by ensuring hydrologic maturity of forests, as per Washington Forest Practices Board (1994).				
Windthrow	Unknown. Objectives of proposed buffers are to enhance stand wind-firmness by decreasing tree height/diameter ratios, fetch distances in adjacent harvest units, and edge effect.				
Surface and road erosion	Variable, depending on site conditions. Objectives are to minimize erosion through implementation and comprehensive road-maintenance plans for each landscape unit (see text).				

[1] "Contribution area" refers to upslope channel heads, bedrock hollows, unchannelized valleys, and topographic depressions; see discussion of OESF Type 5 drainages in the Draft EIS that accompanies this HCP.

[2] Refer to discussion of Type 5 drainages in the Draft EIS that accompanies this HCP.

[3] Exterior (wind) buffer, where harvest and management activities are allowed. On Type 5 streams, exterior buffers will only be applied as necessary where there are interior-core buffers. See text.

[4] See discussion in this section of the text for citations of current literature.

[5] Buffer widths are based on available literature citing one site potential tree height for each stream type as the ecologically appropriate measure; see

IV.11	Components of a preliminary assessment of physical and biological watershed conditions for the 12-step watershed assessment procedure for the Olympic Experimental State Forest	No change
IV.12	Number of acres and percent of land base projected in the Olympic Experimental State Forest riparian interior-core buffer, exterior buffer, and combined (total) buffer, by forest age class	No change

pg. IV.160-162 - delete Table IV.13 entirely and replace with:

Table IV.13: Habitats and representative wildlife species covered by this HCP for the west-side planning units

(Source: Brown 1985 Thomas et al. (1993), Parsons et al. (1991) and Pyle (1989).

Type of habitat	Representative species that can use these habitat types
Spotted owl high quality nesting habitat	dusky shrew, long-eared myotis, northern flying squirrel, Pacific fisher, wood duck, northern goshawk, barred owl, pileated woodpecker, olive-sided flycatcher, northern spotted owl, hoary bat, bushy-tailed woodrat, red tree vole, harlequin duck, marbled murrelet, Vaux's swift, red-breasted nuthatch, Dunn's salamander, Larch Mountain salamander, Van Dyke's salamander, tailed frog, pine white butterfly, Johnson's hairstreak butterfly, *Acalypta saudersi* (a lace bug), *Cychrus tuberculatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)
Spotted owl sub-mature habitat	dusky shrew, long-legged myotis, northern flying squirrel, Pacific fisher, wood duck, hairy woodpecker, northern goshawk, barred owl, olive-sided flycatcher, northern spotted owl, hoary bat, bushy-tailed woodrat, red tree vole, red-breasted nuthatch, Dunn's salamander, northwestern salamander, Van Dyke's salamander, tailed frog, northern alligator lizard, pine white butterfly, coral hairstreak butterfly, California hairstreak butterfly, *Cychrus tuberculatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)
Spotted owl dispersal habitat	Douglas' squirrel, sharp-shinned hawk, Swainson's thrush, evening grosbeak, dusky shrew, northern spotted owl, long-legged myotis, mountain beaver, creeping vole, bobcat, elk, Vaux's swift, orange-crowned vireo, northern alligator lizard, rubber boa, long-toed salamander, *Cychrus tuberculatus*

Table IV.13: Habitats and representative wildlife species covered by this HCP for the west-side planning units (continued)

Type of habitat	Representative species that can use these habitat types
Spotted owl dispersal habitat *(continued)*	(a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)
Marbled murrelet habitat	dusky shrew, long-legged myotis, northern flying squirrel, Pacific fisher, wood duck, northern goshawk, barred owl, hairy woodpecker, Oliver-sided flycatcher, marbled murrelet, hoary bat, bushy-tailed woodrat, red tree vole, harlequin duck, Vaux's swift, red-breasted nuthatch, Dunn's salamander, Larch Mountain salamander, Van Dyke's salamander, tailed frog, pine white butterfly, Johnson's hairstreak butterfly, *Acalypta saudersi* (a lace bug), *Cychrus tuberculatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)
Conifer-dominated riparian ecosystems	long-legged myotis, Pacific fisher, mink, wood duck, sharp-shinned hawk, ruffed grouse, olive-sided flycatcher, purple martin, Dunn's salamander, Van Dyke's salamander, salamander, tailed frog, dusky shrew, Trowbridge's shrew, southern red-backed vole, river otter, Barrow's goldeneye, band-tailed pigeon, long-eared owl, red-breasted sapsucker, hermit thrush, evening grosbeak, Cascade frog, bull trout, coho salmon, steelhead salmon, mayflies, stoneflies, caddisflies, midges, arborvitae hairstreak butterfly
Hardwood-dominated riparian ecosystems	long-legged myotis, mink, wood duck, purple martin, northwestern pond turtle, common garter snake, Dunn's salamander, northern red-legged frog, ruffed grouse, dusky shrew, shrew mole, yellowpine chimunk, river otter, Barrow's goldeneye, Cooper's hawk, band-tailed pigeon, downy woodpecker, black-headed grosbeak, Olympic salamander, Olympic mudminnow, mayflies, stoneflies, caddisflies, dreamy duskywing butterfly, western tiger swallowtail

Table IV.13: Habitats and representative wildlife species covered by this HCP for the west-side planning units (continued)

Type of habitat	Representative species that can use these habitat types
Nonforested wetland	northern harrier, common snipe, northwestern pond turtle, northern red-legged frog, spotted frog, Beller's ground beetle, long-horned leaf beetle, Hatch's click beetle, mallard, mink, dusky shrew, Pacific shrew, coast mole, Yuma myotis, long-tailed vole, American bittern, little willow flycatcher, common loon, sandhill crane, black tern, coho salmon, Olympic mudminnow, dragonflies, damselflies, sonora skipper butterfly
Forested wetland	long-legged myotis, Pacific fisher, ruffed grouse, sharp-shinned hawk, barred owl, olive-sided flycatcher, purple martin, Van Dyke's salamander, northern red-legged frog, mink, spotted frog, dusky shrew, water shrew, bushy-tailed woodrat, common merganser, band-tailed pigeon, northern saw-whet owl, red-breasted sapsucker, western toad, dragonflies, flies, cad-disflies, pale tiger swallowtail butterfly
Cliffs	fringed myotis, long-legged myotis, Yuma myotis, mountain goat, peregrine falcon, turkey vulture, black swift, cliff swallow, western fence lizard, bushy-tailed woodrat, golden eagle, wasps, shorttailed black swallowtail butterfly
Caves	Townsend's big-eared bat, fringed myotis, long-legged myotis, Yuma myotis, coyote, California wolverine, mountain lion, bobcat, black swift, Larch Mountain salamander, crickets
Oak woodland	western gray squirrel, Lewis' woodpecker, California mountain kingsnake, Propertius' duskywing butterfly, Oregon green hairstreak butterfly
Talus	Cascade golden-mantled ground squirrel, mountain goat, Pacific fisher, California wolverine, bobcat, white-tailed ptarmigan, common nighthawk, rosy finch, western fence lizard, Larch Mountain salamander, Dunn's salamander, Van Dyke's salamander, wolf spiders, jumping spiders, small-footed myotis

Table IV.13: Habitats and representative wildlife species covered by this HCP for the west-side planning units (continued)

Type of habitat	Representative species that can use these habitat types
Grass/forb forest stage	coast mole, vagrant shrew, Townsend's vole, coyote, long-tailed weasel, black-tailed deer, common nighthawk, white-crowned sparrow, northwestern garter snake, western fence lizard, northwestern salamander, western bluebird, wolf spiders, grasshoppers, mariposa copper butterfly, silvery blue butterfly, Blackmore's blue butterfly, western meadow fritillary butterfly, *Oncocnemis dunbari* (a moth), *Formica neorufibarbis* (an ant)
Shrub forest stage	coast mole, Townsend's vole, mountain beaver, coyote, long-tailed weasel, black-tailed deer, common nighthawk, blue grouse, rufous hummingbird, hermit thrush, white-crowned sparrow, rufous-sided towhee, northwestern garter snake, western fence lizard, northwestern salamander, western bluebird, Pacuvius' duskywing butterfly, satyr anglewing butterfly
Open sapling/pole forest stage	coast mole, Douglas' squirrel, mountain beaver, black-tailed deer, long-tailed weasel, coyote, blue grouse, rufous hummingbird, American robin, hermit thrush, rufous-sided towhee, western fence lizard, western bluebird, Phoebus parnassian butterfly, golden hairstreak butterfly, western tailed blue butterfly, bobcat, snowshoe hare
Closed sapling/pole/sawtimber forest stage	Douglas' squirrel, sharp-shinned hawk, Swainson's thrush, evening grosbeak, dusky shrew, long-legged myotis, mountain beaver, creeping vole, bobcat, elk, Vaux's swift, orange-crowned vireo, northern alligator lizard, rubber boa, long-toed salamander, *Cychrus tuber-culatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)

Table IV.13: Habitats and representative wildlife species covered by this HCP for the west-side planning units (continued)

Type of habitat	Representative species that can use these habitat types
Large sawtimber forest stage	dusky shrew, long-legged myotis, northern flying squirrel, Pacific fisher, wood duck, hairy woodpecker, northern goshawk, barred owl, olive-sided flycatcher, hoary bat, bushy-tailed woodrat, red tree vole, red-breasted nuthatch, Dunn's salamander, northwestern salamander, Van Dyke's salamander, tailed frog, northern alligator lizard, coral hairstreak butterfly, pine white butterfly, California hairstreak butterfly, *Cychrus tuberculatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle)
Old-growth forest stage	Johnson's hairstreak butterfly, pine white butterfly, *Acalypta saudersi* (a lace bug), *Cychrus tuberculatus* (a carabid beetle), *Lobosoma horridum* (a weevil), *Omus dejeani* (a tiger beetle); and see list for spotted owl high quality nesting habitat