



**PUGET SOUND ENERGY**  
*The Energy To Do Great Things*

# **DECAYING AND LEGACY WOOD PLAN**

SETTLEMENT AGREEMENT ARTICLE 511

Appendix I to the SA 501 Terrestrial Resource Management Plan

**BAKER RIVER PROJECT**  
**FERC No. 2150-033**



**Puget Sound Energy**

**Bellevue, Washington**

**September 30, 2009**

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## 1.0 Executive Summary

This Decaying and Legacy Wood Plan establishes standards and guidelines for the retention, creation, and enhancement of snags, logs, and residual live trees on existing and acquired Baker River Project lands. It has been prepared as directed by Settlement Agreement Article 511, “Decaying and Legacy Wood” (SA 511) of the *Order on Offer of Settlement, Issuing New License and Dismissing Amendment Application as Moot* for the Baker River Hydroelectric Project (FERC Project No. 2150). It is also designed to be consistent with License Article 20, License Article 410, and License Settlement Article 506. This plan was prepared collaboratively by the Baker River Project Terrestrial Resource Implementation Group (TRIG), which is composed of representatives of the signatories to the Settlement Agreement.

Several wildlife species in the Baker River basin rely upon snags, logs, and residual live trees to provide one or more of their life requisites, and opportunities to create or enhance habitat for these species exist on project lands. This Decaying and Legacy Wood Plan establishes the objectives and criteria for enhancing habitat for wildlife by creating, protecting, and monitoring habitat associated with decaying and legacy wood.

## 2.0 Introduction

This Decaying and Legacy Wood Plan has been prepared for the Baker River Hydroelectric Project, FERC No. P-2150 (Baker Project) pursuant to the *Order on Offer of Settlement, Issuing New License and Dismissing Amendment Application as Moot* dated October 17, 2008 (the “license”). Specifically, Settlement Agreement Article 511, “Decaying and Legacy Wood” (SA 511) in Appendix A of the license, sets forth the applicable requirements for this plan.

This plan describes the steps Puget Sound Energy will take to meet the requirements of SA 511. It establishes the goals and objectives for legacy wood management and the criteria for legacy wood creation, retention, monitoring, and reporting that will occur over the term of the license. This plan was prepared collaboratively by the Baker River Project Terrestrial Resources Implementation Group (TRIG), which includes representatives of Puget Sound Energy and the other signatories to the Settlement Agreement.

This plan includes:

- Reviews of the pertinent license articles and Settlement Agreement articles to ensure the plan meets the requirements of each.
- Statements of the goals and objectives of the plan.
- Regulatory references and definitions to maintain consistency between the plan and other pertinent laws, regulations, and policies.
- General provisions to describe the process by which the plan has been developed and can be modified in the future.

- Plan implementation requirements describing the site-specific and project-specific criteria and actions that will be taken under the plan.
- Reporting procedures that describe the content and format for annual reports, as required by the license.

### 3.0 Basis for the Plan

The Decaying and Legacy Wood Plan has been prepared in response to SA 511, which is provided in its entirety below. The plan also has been designed to comply with and/or be consistent with License Article 20, License Article 410, and License Settlement Articles 502, 503, 504, 505 and 506. Relevant portions of these three articles are also provided below.

#### 3.1 License Settlement Article 511

Settlement Agreement Article 511 states:

Within three years following license issuance, and annually thereafter, the licensee shall manage snags, logs and residual live trees ("Decaying and Legacy Wood") located on existing or acquired Project lands for the purpose of enhancing Decaying and Legacy Wood structure to increase its value to snag and log dependant species. The management will be conducted in accordance with a plan filed with the Commission for approval in accordance with Article 501 within one year from license issuance. The licensee shall develop the plan in consultation with the TRIG, and will provide a 90-day review and comment period on a draft prior to filing with the Commission as required by Article 501.

In preparing the plan, licensee shall refer to Johnson, D.H. and O'Neil, T.A., "DecAID Model, Wildlife-habitat relationships in Oregon and Washington," Oregon State University Press, 2001.

The Decaying and Legacy Wood Plan shall address the snag, log and residual live tree habitats of vertebrate species likely to inhabit the lands on a seasonal or year-round basis. The plan shall include measures to retain snags, logs, and residual live trees where they already exist, and to promote the development of these features where they do not exist. The plan may also include measures to provide artificial structures to meet short-term habitat needs where natural snags, logs, and residual live trees are not present and are not expected to develop over the term of the license. All measures in the plan shall be appropriate to the habitat types present on the lands. Existing snags, logs and residual live trees shall be retained in appropriate numbers as determined by land management objectives for each site in conformance with the plan. If existing snags and logs are insufficient to support the land management objectives in the plan to support population densities of primary cavity excavators, and live trees of appropriate size are present, the licensee shall create additional snags or downed logs from live trees, or alternative methods. The licensee shall file any amendments to the Decaying and Legacy Wood element of the plan, as required by Article 501, that result from the acquisition of any new Project lands.

Funding for preparing the plan and managing Decaying and Legacy Wood according to the plan is not to exceed \$35,000 each year in the first two years following license issuance, to allow for planning and initial site work, and is not to exceed \$10,000 each year throughout the remaining term of the license. If funds are

available twenty-five years following license issuance, and licensee, in consultation with the TRIG, determines habitat enhancement or management actions are not feasible for any of the intended purposes of this article, any remaining funds required by this article may be made available to the TERF established pursuant to Article 602.

### ***3.2 License Article 20***

License Article 20 states:

The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

### ***3.3 License Article 410***

Item 5 of License Article 410, “Threatened, Endangered and Sensitive Species Plan,” states, “Wherever thinning of timber or vegetation management occurs, take all feasible measures to retain the largest available snags, trees, and down woody debris in order to accelerate the development of northern spotted owl habitat.”

### ***3.4 License Settlement Articles 502, 503, 504 and 505***

Articles 502, 503, 504 and 505 of the Settlement Agreement require Puget Sound Energy to acquire and manage lands for forest, elk, wetland and aquatic/riparian habitats, respectively. The Decaying and Legacy Wood Management Plan will be implemented as a secondary habitat objective on the lands acquired to comply with these articles. Legacy wood management will occur only to the extent that it does not conflict with or detract from the primary habitat objective for each acquired land parcel.

### ***3.5 License Settlement Article 506***

Settlement Agreement Article 506, “Osprey Nest Structures,” states in part:

Within two years following license issuance, the licensee, in consultation with the TRIG, shall select and modify ten existing trees near Lake Shannon to promote their eventual use as osprey nest sites. The licensee shall select ten mature trees on lands suitable for osprey nesting owned and/or controlled by the licensee. Modification of the trees may involve topping, killing, or other appropriate techniques, based on site-specific evaluations, to promote the development of tree and snag nest sites available for osprey nesting at Lake Shannon.

## **4.0 Goals and Objectives**

The goal of the Decaying and Legacy Wood plan is to create and enhance habitat for vertebrate species that roost, nest, forage, or cache food in snags, logs, and residual live trees.



The objectives of the Decaying and Legacy Wood program are to:

- Conduct decaying and legacy wood management activities in a manner compatible with other land management objectives and constraints on project lands.
- Where appropriate, protect existing snags, logs, and residual live trees on project lands.
- Where appropriate, provide new snags and logs across the natural range of types and decay stages.
- Periodically monitor residual live trees, created snags, and created logs, and update management practices accordingly.

## 5.0 Regulatory Reference and Definitions

The management of legacy wood under this plan will be in compliance with all applicable local, state, and federal laws and regulations. If conflicts exist between the objectives or management guidelines of this plan and any applicable law or regulation, the objectives and guidelines will be followed to the extent possible while still complying with the law or regulation.

### 5.1 Federal Authority and Reference

**Endangered Species Act** — The Federal Endangered Species Act of 1973 (ESA), as amended, prohibits the “take” of species listed as threatened or endangered. The definition of take includes activities that harm or harass individuals of a listed species. Modification of forest habitat (e.g., killing or felling of trees) occupied by a listed species can be considered take if it leads to the harm or harassment of individuals of the species. Snag and log creation activities on project lands will need to be conducted in a manner that does not result in take. Project lands with the potential to support listed species will be checked for such presence prior to any snag or log creation, and legacy wood management activities will be adjusted as needed to avoid impacts if a listed species is present.

### 5.2 Washington State Authority and Reference

**Washington Forest Practices Act** — Management activities on non-federal forestlands in Washington fall under the jurisdiction of the Washington Forest Practices Act (RCW 76-09) and Forest Practices Rules (FPR). Certain forest management activities require prior approval through the Forest Practices Approval (FPA) process, and others simply require conformance to the FPR without prior approval. Snag and log creation can require prior approval under certain circumstances.

**Shorelines Management Act** — Activities conducted within Shorelines of the State (non-federal lands within 200 feet of lakes of 20 acres or more and streams with an average annual flow of 20 cubic feet per second [cfs] or more) are subject to review and approval under the Washington State Shorelines Management Act and pertinent county and city Shoreline Management Master Programs. The shorelines of Lake Shannon, the Baker River, and several of the Baker River tributary streams fall under the jurisdiction of the Shorelines Management Act. However, forest management activities within Shorelines of the State also come under the jurisdiction of the Forest Practices Act, and typically do not require separate approval under the Shorelines Management Act.

Nevertheless, snag and log creation activities on project lands will be in compliance with the Shorelines Management Act.

## 6.0 Plan Implementation

### 6.1 Plan Area

This Decaying and Legacy Wood Plan applies to non-federal lands within the project boundary, including lands acquired for management of forest, elk, wetland, and aquatic/riparian habitats. Although all project lands are included in the project area, individual decaying and legacy wood management sites may be treated differently according to site-specific conditions and parameters, as described below.

### 6.2 Funding

Funding for plan development and implementation, as described in SA 511, will not exceed \$35,000 (2006\$) each year for the first two years of the license, and \$10,000 (2006\$) each year for the remainder of the license term. The level of funding is greater during the first two years to allow for planning and initial site work. The use of funds will be included in the annual TRMP report.

### 6.3 Provisions for Development and Modification of the Plan

The Decaying and Legacy Wood Management Plan was developed by consensus of the TRIG, for approval by the FERC. Any TRIG member may propose a modification to the plan. The TRIG will then consider the modification and determine whether consensus is reached according to the procedures outlined in Settlement Article 601. If consensus is reached, the proposed modification will be filed with the FERC for formal review and approval. Until such approval is obtained, the plan will continue to be implemented without the proposed modification.

### 6.4 Implementation Schedule

Decaying and legacy wood management will begin by October 1, 2011, on non-federal lands within the project boundary at the time of license issuance. On lands acquired after October 1, 2009, decaying and legacy wood management will begin within two years of acquisition. By October 2011, Puget Sound Energy will begin implementation of this plan by developing site-specific prescriptions and selecting sites for snag and log creation based on the guidelines provided in this plan. Puget Sound Energy will create snags and logs over the term of the license, monitor the effectiveness of the snag and log creation program, and update site-specific plans as appropriate based on the results of monitoring and report progress.

### 6.5 Procedures, Standards and Criteria

Decaying and legacy wood management on Baker River Project lands will be prescribed on a site-specific basis following the guidelines presented in this plan. Decaying and legacy wood management will be a secondary objective on all Project lands, and will occur only where it does not conflict with or detract from the primary objective of a given parcel of Project lands, present a safety hazard, or otherwise interfere with Project



operation. The plan reflects the view that human safety and reliable project operation are paramount at all times. All live tree, snag and log criteria are subject to modification where needed to maintain the safety of persons working and recreating on project lands, and to provide for the reliable and cost-effective operation of the project.

Decaying and legacy wood consists of residual live trees, snags and logs. The rates at which these habitat features will be retained and created on Project lands will be guided by the USFS DecAID model (Mellen-McLean et al. 2008). DecAID provides two alternate methods of determining target snag and log densities for managed forestlands. Targets can be based on the estimated needs of wildlife species, as described in the scientific literature, or they can be based on observed densities of snags and logs in natural (unmanaged) forest. The former method is considered the least reliable because it is based on observational (rather than experimental) studies of varying designs, few of which measure the survival and productivity of wildlife and compare these to snag and log density. It was common practice in the past to base legacy wood targets on the anticipated snag needs of primary cavity nesters (Neitro et al., 1985), but a recent assessment of the issue by Rose et al. (2001) suggests that the minimum functional sizes and densities for primary cavity nesters may not be sufficient to account for the habitat needs of all wildlife species that rely on decaying wood. To avoid this potential pitfall, legacy wood targets for Project lands will be based on observed snag and log densities in unmanaged forest. The snag and log data set employed in the DecAID model consists of several thousand long-term monitoring plots maintained by the USDA and Bureau of Land Management throughout the Pacific Northwest. The subset of plots used for the Project area will be either the Westside Lowland Conifer-hardwood Forest or the Montane Mixed Conifer Forest, depending on the elevation and forest type of the lands in question. The Project area lies at the transition zone between these two forest types.

A key aspect of the DecAID model is the recognition that snag and log densities are highly variable in time and space. Snag and log creation are somewhat random events in nature, and the sizes and species of snags and logs that result from these random events are dependent on the sizes and species of trees present in the stand, which are in turn dependent on the site conditions and history of disturbance in the stand. The DecAID model illustrates this variation by presenting snag and log densities according to forest type (e.g., lowland conifer forest) and stand successional conditions (open canopy, small/medium tree and larger tree), and by providing the 30th, 50th and 80th percentiles of the sample plots. Management to the 30 percent level would meet or exceed conditions in 30 percent of the unmanaged forest plots, while management to the 80 percent level (higher snag and log densities) would meet or exceed snag and log conditions in 80 percent of unmanaged forests. The selection of a target level is typically driven by a combination of site-specific conditions, surrounding landscape conditions, other land management considerations, and economics. As noted in section 6.5.2 below, the first three considerations will be addressed during the development of site-specific prescriptions for Project lands. The last consideration (economics) will be dictated by the annual decaying and legacy wood budget specified in SA 511 and Section 6.2.

One short-coming of DecAID is that it does not provide detail on the distribution of decay stages of snags and logs in unmanaged forest. Once a tree dies, it goes through a process of decay and deterioration until it is eventually incorporated into the organic

layer of the soil (Cline et al. 1980, Rose et al 2001). Each decay stage provides a different set of conditions that contribute to the habitat for a different combination of wildlife species. To provide for the full range of native wildlife species, all decay stages should be represented on the landscape. This can be accomplished by managing for a narrow range of decay stages (e.g., a single snag cohort) in each stand of a large landscape, or by managing for all decay stages (multiple cohorts) within a single stand. The choice between these two alternatives, or a combination of the two, will be driven by current and expected future conditions on the landscape, and by the ability of the landowner to control those conditions. Landowners with large holdings, such as the USFS, can manage individual stands for one or a few snag cohorts because they can plan for and manage large numbers of stands on the landscape. Landowners with small holdings, such as Puget Sound Energy, may have to manage for multiple snag cohorts in each stand (through multiple snag-creation events) unless they can reliably predict current and future conditions in the surrounding landscape. This determination will be made on a site-specific basis, using the information specified in Section 6.5.2.

This plan specifies a number of snag creation mechanisms (topping, live-topping and girdling), and allows for others as needed to emulate the natural process of wind breakage, insects, disease, and suppression mortality. Other methods for creating snags may be warranted and will be approved by the TRIG prior to their use.

There may be limited counting of existing snags and logs prior to creation in some stands. The numbers of snags and logs already present in a stand has little influence on the number to be created because those snags and logs that are present represent the previous cohort. If the goal for a particular site is to provide a range of decay stages, it will be necessary to add new snags and logs over time regardless of the number already present. Snag and log creation rates can also be adjusted if long-term monitoring reveals the need to do so. Effectiveness monitoring will be done to track decay rates and wildlife use, and the results will be used to adjust the program (such as changing the frequency of entries, the number of snags/logs created, the size or species of tree killed, the method of killing, the location of snags/logs in the stand, and so on).

### 6.5.1 Retention of Existing Legacy Wood

Existing legacy wood will be retained on project lands according to the following criteria.

- Where compatible with land management objectives, all natural and created snags and habitat logs on project lands will be retained, except as noted in Criterion 5 below. Habitat logs are any logs other than those created for sale during a commercial timber harvest.
- All live trees within the core zone, inner zone and outer zone of Type S and Type F riparian management zones, as defined in the Forest Practices Rules (WAC 222-30), will be retained, except as noted in Criterion 5 below.
- All live trees within 50 feet (horizontal distance) of the outer edge of bankfull width of Type Np waters, as defined in the Forest Practices Rules, will be retained, except as noted in Criterion 5 below.

- Residual live trees may be retained outside riparian management zones at the time of timber harvesting to provide legacy trees to the next stand. The numbers, sizes and species of trees to be retained will be determined on a site-specific basis, and will consider the management objectives, regulatory requirements and other constraints of the site.
- Live trees, snags, and logs that would otherwise be retained in accordance with Criteria 1 through 4 may be felled and removed, subject to compliance with the Forest Practices Rules, if:
  - a. Removal is required by the FERC or other governmental jurisdiction.
  - b. The tree, snag, or log poses a hazard to human safety.
  - c. The tree, snag, or log threatens a project structure.
  - d. The tree, snag, or log interferes with project operation.
  - e. The tree, snag, or log creates a fire hazard.
  - f. The tree, snag, or log interferes with the safe, efficient and environmentally acceptable use of a road.
  - g. The tree, snag, or log is otherwise inconsistent with the primary management objectives of a specific site.
- Live trees and snags that are felled under one or more provisions of Criterion 5 will be left on-site as habitat logs unless doing so would be in conflict with Criterion 5.
- No firewood cutting will be allowed on lands acquired to comply with SA 502 (Forest Habitat), SA 503 (Elk Habitat), SA 504 (Wetland Habitat) or SA 505 (Aquatic/Riparian Habitat), except in areas specifically designated by the TRIG.
- No firewood cutting will be allowed on other project lands, except in areas specifically designated by Puget Sound Energy.

### 6.5.2 Creation of Legacy Wood

Decaying and legacy wood will be actively created on project lands according to the following criteria.

- Project lands retained in forest cover will be managed according to Criteria 10 and 11, unless the creation of legacy wood at a specific location would:
  - a. Be prohibited by the FERC or another governmental jurisdiction.
  - b. Pose a hazard to human safety.
  - c. Threaten a project structure.
  - d. Interfere with project operation.
  - e. Create a fire hazard.
  - f. Interfere with the safe, efficient, and environmentally acceptable use of a road.
  - g. Be inconsistent with the primary management objectives of the site.
- Site-specific snag and log density targets will be established by the TRIG using the recommendations of DecAID (Mellen-McLean et al. 2008) for the forest types in the Project vicinity (Tables 1 and 2). When establishing specific snag and log targets, the TRIG will consider:

- a. Current snag and log densities, sizes, decay stages and species, as estimated from field sampling.
  - b. Potential natural snag and log recruitment, as estimated with the use of ORGANON SMC or another appropriate forest stand growth model approved by the TRIG.
  - c. The primary management objective(s) for the site, and any potential conflicts between the primary objective(s) and legacy wood management.
  - d. The species, sizes and densities of trees present on the site, and the ability of the site to sustain mortality (snag and log creation) while meeting the primary objectives of the site.
  - e. The range of topographic, hydrologic, edaphic and vegetative conditions within the site, and the resulting variability in natural snag and log densities.
  - f. The habitat conditions of the surrounding landscape, and the implications these conditions might have to management for wide-ranging wildlife species that use legacy wood.
- Where additional snags and logs are needed to meet targets, they may be created by topping, live-topping, girdling or felling of live trees, or other methods approved by the TRIG. The frequency of snag and log creation, and the numbers of snags and logs created at each interval, will initially be based on the work of Cline et al. (1980) or similar work that indicates anticipated rates of snag and log decay. Snag and log persistence and use will be monitored as described in Section 6.7, and the frequency of creation will be adjusted as needed based on the results of monitoring to meet the site-specific snag and log density targets established in accordance with Criterion 10.

Table 1. DecAID snag recommendations based on observed snag densities in unmanaged forests of western Washington forest types.

		80 Percent Level				50 Percent Level				30 Percent Level			
		snags/ac ≥10" dbh	% of Landscape	snags/ac ≥20" dbh	% of Landscape	snags/ac ≥10" dbh	% of Landscape	snags/ac ≥20" dbh	% of Landscape	snags/ac ≥10" dbh	% of Landscape	snags/ac ≥20" dbh	% of Landscape
Westside Lowland Conifer- hardwood Forest (Washington Cascades)	Open Canopy	32.8	4 to 6	25.5	2 to 4	11.0	37	5.3	18 to 29	5.0	52	4.2	29
	Small/Med Trees	30.5	Part	18.0	9	17.1	Part	5.3	Part	11.1	Part	2.1	Part
	Larger Trees	46.9	Part	14 to 20	5 to 12	26.4	30	8.5	Part	10 to 15	Part	8.7	Part
Montane Mixed Conifer Forest	Open Canopy	23.0	Part	5.3	Part	8.5	Part	2.1	Part	4.0	Part	1.1	Part
	Small/Med Trees	32.0	Part	9.5	Part	16.6	Part	4.2	Part	10.0	Part	2.7	Part
	Larger Trees	27.0	Part	15.0	Part	15.0	Part	9.0	Part	11.0	Part	6.5	Part

Table 2. DecAID log recommendations based on observed log densities in unmanaged forests of western Washington forest types.

		Percent Cover of Logs			Log Diameter Distribution
		80 Percent Level	50 Percent Level	30 Percent Level	
<b>Westside Lowland Conifer-hardwood Forest (Washington Cascades)</b>	<b>Open Canopy</b>	9.5	6.1	3.3	4.9-9.7" - 9% 9.8-19.6" - 45% 19.7-39.4" - 44% >39.4" - 2%
	<b>Small/Med Trees</b>	9.0	5.2	3.4	4.9-9.7" - 23% 9.8-19.6" - 38% 19.7-39.4" - 32% >39.4" - 6%
	<b>Larger Trees</b>	~ 12 <sup>1</sup>	~ 6 <sup>1</sup>	~ 4 <sup>1</sup>	4.9-9.7" - 11% 9.8-19.6" - 40% 19.7-39.4" - 42% >39.4" - 7%
<b>Montane Mixed Conifer Forest</b>	<b>Open Canopy</b>	7.4	2.8	1.7	All >4.9"
	<b>Small/Med Trees</b>	7.9	3.9	2.5	4.9-9.7" - 23% 9.8-19.6" - 55% 19.7-31.4" - 19% >31.4" - 3%
	<b>Larger Trees</b>	10.0	5.0	3.3	4.9-9.7" - 10% 9.8-19.6" - 39% 19.7-31.4" - 36% >31.4" - 16%

<sup>1</sup> Logs in this category are primarily in Decay Classes 1 through 4; all other categories include logs in Decay Classes 1 through 5.



## 6.6 Rationale

The Baker River basin supports at least eight species of primary cavity nesters, 28 species of secondary cavity nesters, 48 species that breed, travel, rest and/or forage on logs, and 41 species that nest and/or forage primarily on large live trees. Commercial forestry, agriculture and development, including the Project, in and around the Baker basin have substantially reduced the availability of these habitat features on the landscape. This plan provides decaying wood (snags and logs) and legacy wood (residual large live trees, snags, and logs), which support habitat elements that are important to many species, and essential to some.

## 6.7 Monitoring and Adaptive Management

The Decaying and Legacy Wood Plan will be monitored for compliance by recording the numbers, species, and sizes (dbh and height or diameter and length) of snags and logs created in each entry in each stand.

The Decaying and Legacy Wood Plan will be monitored for effectiveness by tracking the persistence and wildlife use of ten percent of the created snags and logs. Persistence data will be evaluated to verify that the numbers of snags and logs created and the frequency of creation are sufficient to snags and logs of the types and densities found in unmanaged forests in the Baker River basin. If the results of monitoring show that the plan is providing fewer snags and logs over time than anticipated, the numbers created and/or the frequency of creation entries will be adjusted accordingly. If the results of monitoring show that wildlife use the created snags and logs less than expected, alternative methods of snag and log creation will be examined.

## 7.0 Reporting

Puget Sound Energy will prepare annual reports that document implementation of the Decaying and Legacy Wood Plan for each 12-month period (January 1 through December 31) according to the schedule for annual reporting set forth in SA 501. Reports will be provided to the TRIG for review and comment prior to being filed with the FERC.

### 7.1 Schedule

Puget Sound Energy will provide draft Decaying and Legacy Wood Plan monitoring reports to the TRIG for 30-day review by March 31 of the year following the reported period. Revised annual reports, which incorporate comments from the TRIG, will be combined with revised annual reports for other terrestrial articles into the Terrestrial Resource Management Plan (TRMP) annual report, and provided to the TRIG for 30-day review by February 1 of the succeeding year. Final TRMP annual reports will be submitted to the FERC by April 1 of that same year, 16 months after the end of the reported period.

## 7.2 Annual Report Format

The draft annual report will include:

- A summary of management activities conducted during the reported year.
- A summary of activities and results of monitoring conducted during the reported year.
- A list of expenditures incurred by the Decaying and Legacy Wood Plan budget during the reported year.
- A summary of any issues or concerns regarding Decaying and Legacy Wood Plan implementation raised by Puget Sound Energy or other members of the TRIG during the reported year.
- Any modifications to the Decaying and Legacy Wood Plan adopted by the TRIG.

## 8.0 References

- Cline, S.P., Berg, A.B., and H.M. Wight. 1980. Snag characteristics and dynamics in Douglas-fir forests, western Oregon. *Journal of Wildlife Management* 44(4):773-786.
- Mellen-McLean, Kim, Bruce G. Marcot, Janet L. Ohmann, Karen Waddell, Susan A. Livingston, Elizabeth A. Willhite, Bruce B. Hostetler, Catherine Ogden, and Tina Dreisbach. 2008. DecAID, the decayed wood advisor for managing snags, partially dead trees, and down wood for biodiversity in forests of Washington and Oregon. Version 2.0. USDA Forest Service, Pacific Northwest Region and Pacific Northwest Research Station; USDI Fish and Wildlife Service, Oregon State Office; Portland, Oregon.  
<http://www.fs.fed.us/r6/nr/wildlife/decad/index.shtml>
- Neitro, W.A, V.W. Binkley, S.P. Cline, R.W. Mannan, B.G. Marcot, D. Taylor and F.F. Wagner. 1985. Snags (wildlife trees). Pages 129-164 *in* E.R. Brown, ed. *Wildlife and fish habitats in forests of western Oregon and Washington, Parts 1 and 2*. U.S. For. Serv. Publ. No. R6-F&WL-192-1985, Portland, OR.
- Rose, C.L., B.G. Marcot, T.K. Mellen, J.L. Ohmann, K.L. Waddell, D.L. Lindley, and B. Schreiber. 2001. Decaying wood in Pacific Northwest forests: concepts and tools for habitat management. *In* *Wildlife-Habitat Relationships in Oregon and Washington*. D.H. Johnson and T.A. O'Neil, managing directors. Oregon State University Press. Corvallis, OR.

## 9.0 Review Comments and Responses

Puget Sound Energy prepared a final draft and distributed it via certified US Mail to the TRIG for a 90-day review period on June 19, 2009. Comments on the final draft were due September 21, 2009.

### 9.1 Distribution List

**Table 3. Decaying and Legacy Wood Plan reviewers.**

<b>Name</b>	<b>Organization</b>	<b>Address</b>
Len Barson	The Nature Conservancy	1917 First Avenue Seattle, WA 98101
Chris Danilson	Sauk-Suiattle Indian Tribe	5318 Chief Brown Lane Darrington, WA 98273
Don Gay	USDA Forest Service	810 State Route 20 Sedro-Woolley, WA 98284
David Geroux	WA Dept of Fish & Wildlife	600 Capitol Way North Mail Stop 43143 Olympia, WA 98501
Patrick Goldsworthy	North Cascades Conservation Council	P.O. Box 95980 Seattle, WA 98145
Joann Gustafson	WA Dept of Natural Resources	919 North Township Sedro-Woolley, WA 98284
Mark Hunter	WA Dept of Fish & Wildlife	600 Capitol Way North Mail Stop 43143 Olympia, WA 98501
Lou Ellyn Jones	US Fish & Wildlife Service	510 Desmond Dr. SE, Suite 102 Lacey, WA 98503
Robert Kuntz	National Park Service	810 State Route 20 Sedro-Woolley, WA 98284
Chris Madsen	Northwest Indian Fisheries Commission	6730 Martin Way East Olympia, WA 98512
Greta Movassaghi	USDA Forest Service	810 State Route 20 Sedro-Woolley, WA 98284
Bob Nelson	Rocky Mountain Elk Foundation	45 Overmeyer Road Raymond, WA 98577

<b>Name</b>	<b>Organization</b>	<b>Address</b>
James Roberts	Sauk-Suiattle Indian Tribe	5318 Chief Brown Lane Darrington, WA 98241
William Rogers	Skagit County Noxious Weed Control Board	302 South First Street Mount Vernon, WA 98233
Scott Schuyler	Upper Skagit Indian Tribe	25944 Community Plaza Sedro-Woolley, WA 98284
Jon-Paul Shannahan	Upper Skagit Indian Tribe	25944 Community Plaza Sedro-Woolley, WA 98284
Stan Walsh	Swinomish Indian Tribe	P.O. Box 368 La Conner, WA 98233
Todd Wilbur	Swinomish Indian Tribe	P.O. Box 368 La Conner, WA 98233

## 9.2 Transmittal Letter



 <b>PUGET SOUND ENERGY</b> <i>The Energy To Do Great Things</i> Puget Sound Energy P.O. Box 97034 Bellevue, WA 98009-9734 PSE.com	Baker River Project, FERC No. 2150
June 19, 2009	
<b>[CERTIFIED MAIL RETURN RECEIPT REQUESTED]</b>	
William Rogers Skagit County Noxious Weed Control Board 11768 Westar Lane, Suite A Burlington, WA 98233	
<b>Re: Baker River Project, FERC No. 2150, Draft Legacy Wood Plan, Settlement Article 511 Submittal for Consultation</b>	
Dear William:	
On October 17, 2008, the Federal Energy Regulatory Commission (FERC) issued a new license for Puget Sound Energy, Inc.'s (PSE's) Baker River Project, FERC No. 2150. In the license FERC directed that PSE, after consultation with the parties to the Settlement, file a Decaying and Legacy Wood Plan (DLWP) SA 511.	
In accordance with these directives, PSE has conducted consultation with the Terrestrial Resource Implementation Group composed of representatives from the Settlement parties to develop a preliminary draft of the DLWP and receive initial comments and suggestions. These suggestions were incorporated into a draft DLWP. PSE is required to allow a minimum of 90 days for the parties to comment on the draft DLWP prior to filing the final plan with FERC.	
Enclosed with this letter is the draft DLWP. Please review this plan and send your comments and/or recommendations to me. You may also submit your comments by email. <b>Please respond with your reply by September 21, 2009.</b>	
Thank you for your efforts in supporting this process. If you have any questions, please call me at (425) <b>462-3553</b> or email <a href="mailto:Tony.Fuchs@pse.com">Tony.Fuchs@pse.com</a> .	
Sincerely, 	
Tony Fuchs Consulting Natural Resource Scientist Enc. Draft Decaying and Legacy Wood Plan cc: TRIG members	
Doc ID: BAK.20090612.0144.PSE.TRIG	

Figure 1. Sample transmittal letter from PSE.

### 9.3 Reviewer Comments and PSE Responses

Table 4. Comments following formal review of the Decaying and Legacy Wood Plan, June 12 – September 14, 2009.

Comment	Puget Sound Energy Response
<b>USFWS – Lou Ellyn Jones, received July 21, 2009 (via e-mail)</b>	
USFWS has not comments on this plan	Comment noted. No revisions to plan.
<b>WDFW – Brock Applegate, received September 14, 2009 (via e-mail)</b>	
[Comment 1.] The Washington Department of Fish and Wildlife (WDFW) has reviewed the Final Draft Decaying and Legacy Wood Plan, Settlement Agreement (SA) Article 511. We offer the following comments. As a member of the Terrestrial Resources Implementation Group (TRIG), WDFW has participated in continuous consultation and collaboration with Puget Sound Energy (PSE) and other TRIG members for many years before and after the issuance of the Baker River Project License. WDFW appreciates PSE's collaborative process and willingness to work with all TRIG members and SA signatories on the implementation of their license articles.	[Response 1.] Comment noted.
[Comment 2.] Overall, WDFW approves of the current Article 511 Decaying and Legacy Wood Plan. We have listed a few specific comments at the end of the letter. Under 6.5.1 Retention of Existing Legacy Wood Section, PSE proposes to retain decaying and legacy wood inside the Forest Practice Rules (FPR) riparian buffers. WDFW recommends the use of our riparian buffers under our Management Recommendation for Washington's Priority Habitats: Riparian (Knutson and Naef 1997), <a href="http://www.wdfw.wa.gov/hab/ripsum.htm">http://www.wdfw.wa.gov/hab/ripsum.htm</a> . The State had negotiated FPR riparian buffer distances with the timber industry with the goal of maximizing timber production. The TRIG may often do more than Forest Practices Rules requires because we have a different objective of managing for fish and wildlife instead of maximizing timber production. WDFW has created a science-based set of riparian buffers, but we encourage other TRIG members to produce documented, science-based buffer distances for the TRIG's consideration.	[Response 2.] Section 6.5.1 actually requires the retention of all snags and habitat logs on all project lands (inside <i>and</i> outside Washington Forest Practices Rules riparian buffers), except in certain identified situations. Riparian buffer width is not relevant to the retention of snags and logs under the Decaying and Legacy Wood Plan.
[Comment 3.] WDFW welcomes the opportunity to work with PSE on future projects. We value our working relationship with PSE and encourages future dialog. If you have any questions or need more information or clarification to comments from the WDFW, please feel free to call me at (360) 466-4345 x254.	[Response 3.] Comment noted.



Comment	Puget Sound Energy Response
<p>[Comment 4.] SPECIFIC COMMENTS CONCERNING THE DECAYING AND LEGACY WOOD PLAN, ARTICLE 511:</p> <p>5.2 Washington State Authority and Reference. The Finney Block Spotted Owl Special Emphasis Area (SOSEA) surrounds and includes the project area and possible future PM&amp;E lands, especially around Lake Shannon. Washington Department of Natural Resources (DNR) has designated the area directly around Lake Shannon as spotted owl dispersal habitat. PSE will have to check with Forest Practice Rules to make sure that down wood and snag creation remains in compliance with the SOSEA rules. Additional consultation with DNR and WDFW biologists may have to occur to satisfy the special rules in SOSEA's that involve following Class-IV-special Forest Practices. The State of Washington considers areas within the SOSEA and 70 best acres around the SOSEA as Critical Habitat (State).</p>	<p>[Response 4.] This comment is partially correct. The Finney Block Spotted Owl Special Emphasis Area (SOSEA) does surround the non-federal portions of the project area. However, critical habitat (state) in the SOSEA is limited to suitable spotted owl habitat that is within the median home range circle (radius 1.8 miles) of a spotted owl site center (WAC 222-16-080). For purposes of this definition, dispersal habitat is not considered suitable spotted owl habitat. Existing project lands are not considered critical habitat (state). They are not within 1.8 mile of a known spotted owl site center, and they are not suitable spotted owl habitat. If any acquired PME lands are considered critical habitat (state), PSE will consult with the TRIG and Specifically USFWS and WDFW on appropriate management of those lands.</p>
<p>[Comment 5.] PSE could have additional Critical habitat (state) for marbled murrelets (<i>Brachyramphus marmoratus</i>), Bald eagles (<i>Haliaeetus leucocephalus</i>), and Peregrine falcons (<i>Falco peregrinus</i>) on their project lands. WDFW recommends PSE follow Washington Administrative Code (WAC) 222-16-080 (a), (f), (h), and (j) for protecting Critical habitat (state). Please consult with WDFW for additional measures to avoid or minimize impacts to all special status species while conducting management activities.</p>	<p>[Response 5.] Comment noted. As stated in Chapter 5.0, "The management of legacy wood under this plan will be in compliance with all applicable local, state, and federal laws and regulations."</p>
<p>[Comment 6.] 6.5.1 Retention of Existing Legacy Wood. PSE proposes to remove decaying and legacy wood in some circumstances. As an alternative to cutting down snags completely, please cut snags as high as safely possible to retain a high-cut stumps or shorter snags.</p>	<p>[Response 6.] The felling of snags is one of the most dangerous jobs in Washington. High-stumping, as suggested in this comment, can increase the danger. As specified in Section 6.5.1, snags will only be felled on project lands in a limited number of situations. PSE believes it is most prudent to allow professional tree fellers to determine the safest way to fell those snags.</p>

## 9.4 Comment Correspondence

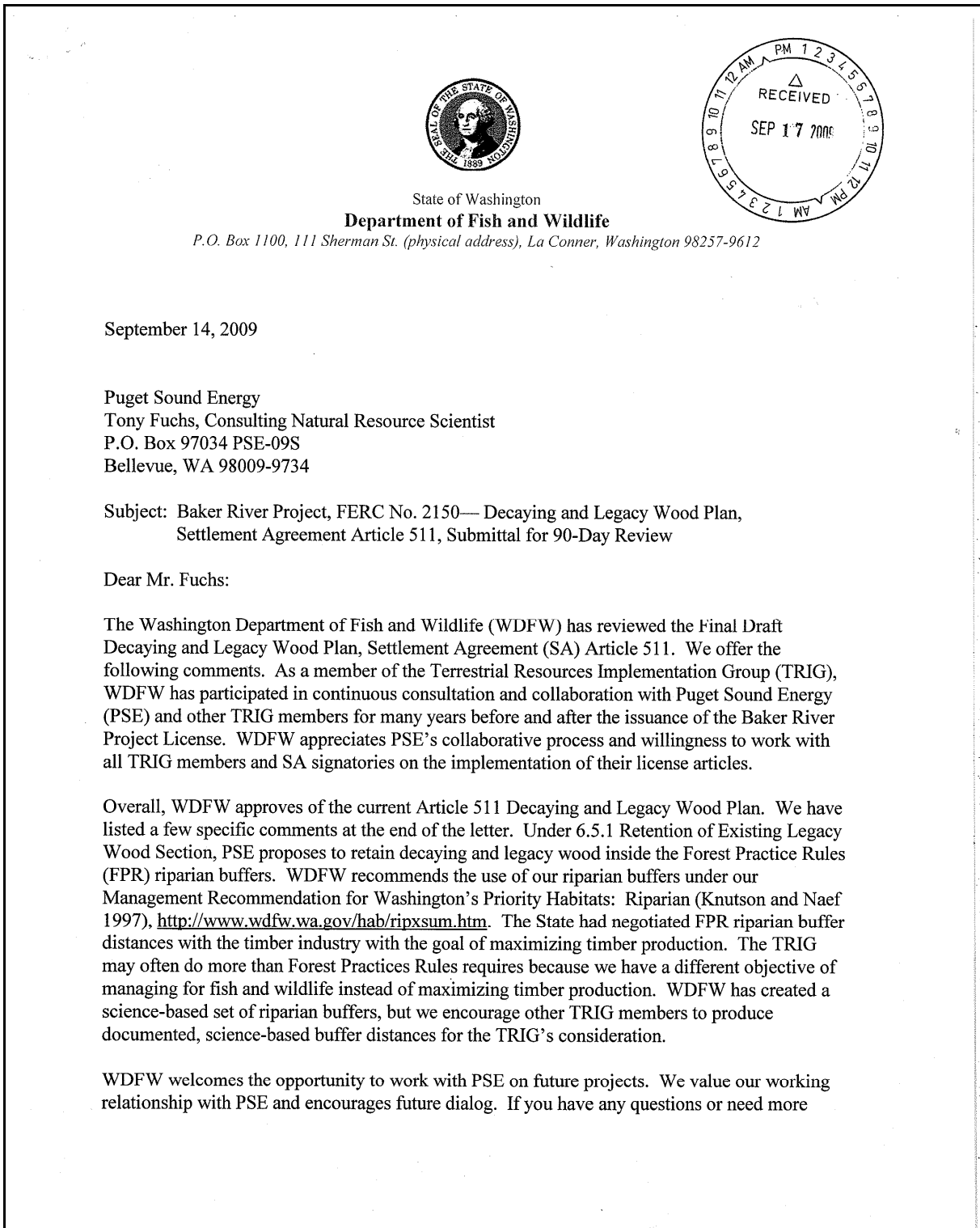
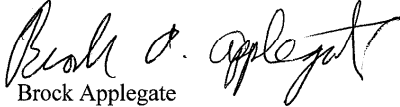


Figure 2. Reply from Brock Applegate, Washington Department of Fish and Wildlife.

Mr. Tony Fuchs  
September 14, 2009  
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information or clarification to comments from the WDFW, please feel free to call me at (360) 466-4345 x254.

Sincerely,



Brock Applegate  
Fish and Wildlife Biologist

Cc: David Brock, WDFW Mill Creek  
Mike Davison, WDFW La Conner  
Bob Everitt, WDFW Mill Creek  
Mark Hunter, WDFW Olympia  
Lora Leschner, WDFW Mill Creek

Figure 2, continued.

Mr. Tony Fuchs  
September 14, 2009  
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**SPECIFIC COMMENTS CONCERNING THE DECAYING AND LEGACY WOOD  
PLAN, ARTICLE 511:**

**5.2 Washington State Authority and Reference.** The Finney Block Spotted Owl Special Emphasis Area (SOSEA) surrounds and includes the project area and possible future PM&E lands, especially around Lake Shannon. Washington Department of Natural Resources (DNR) has designated the area directly around Lake Shannon as spotted owl dispersal habitat. PSE will have to check with Forest Practice Rules to make sure that down wood and snag creation remains in compliance with the SOSEA rules. Additional consultation with DNR and WDFW biologists may have to occur to satisfy the special rules in SOSEA's that involve following Class-IV-special Forest Practices. The State of Washington considers areas within the SOSEA and 70 best acres around the SOSEA as Critical Habitat (State).

PSE could have additional Critical habitat (state) for marbled murrelets (*Brachyramphus marmoratus*), Bald eagles (*Haliaeetus leucocephalus*), and Peregrine falcons (*Falco peregrinus*) on their project lands. WDFW recommends PSE follow Washington Administrative Code (WAC) 222-16-080 (a), (f), (h), and (j) for protecting Critical habitat (state). Please consult with WDFW for additional measures to avoid or minimize impacts to all special status species while conducting management activities.

**6.5.1 Retention of Existing Legacy Wood.** PSE proposes to remove decaying and legacy wood in some circumstances. As an alternative to cutting down snags completely, please cut snags as high as safely possible to retain a high-cut stumps or shorter snags.

Figure 2, continued.

Mr. Tony Fuchs  
September 14, 2009  
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**Literature Cited**

Knutson, K. L. and V. L. Naef. 1997. Management recommendations for Washington's priority habitats: riparian. Wash. Dept. Fish and Wildl., Olympia. 181pp.

**Figure 2, continued.**