

Final
Rare Plant Management Plan
for
Energy Northwest's
Packwood Lake Hydroelectric Project
FERC No. 2244
Lewis County, Washington

Submitted by:



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Rare Plant Management Plan

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1.0 INTRODUCTION

Energy Northwest's (EN) Packwood Lake Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) No. P-2244, received its initial license in 1960. The majority of the Project is located in the Gifford Pinchot National Forest. The Project consists of an intake canal, a concrete drop structure (dam) and intake building on Lake Creek located about 424 ft. downstream from the outlet of Packwood Lake, a 21,691-foot system of concrete pipe and tunnels, a 5,621-foot penstock, a surge tank, and powerhouse with a 26,125 kW turbine generator.

The source of water for the Project, Packwood Lake, is situated at an elevation of approximately 2,857 ft. above mean sea level (MSL), about 1,800 ft. above the powerhouse. Water discharged from the Project is released to the Cowlitz River via a tailrace channel. Power from the Project is delivered over an 8,009-foot 69 kV transmission line to the Packwood substation.

EN filed its Final Application for New License of the Project on February 24, 2008. FERC issued a new license for the Project on October 11, 2018.

1.1 Plan Justification

On April 8, 2008, FERC issued a request for additional information (AIR) including a Rare Plant Management Plan (Plan). The Plan addressed the following elements.

1. Explanation of how your plan addresses National Forest System (NFS) lands, private, and EN ownerships within the project boundary and lands affected by the project;
2. Explanation of how the rare plant management plan would be coordinated with the Threatened, Endangered, and Sensitive Species Plan;
3. An initial list of species to be addressed in the plan, indicating habitats where each is most commonly found and times of year when each species is best identified;
4. Maps of the area to be addressed in the rare plant management plan, including any areas outside the project boundary that may be affected by implementation of any proposed PMEs, and occurrences of rare plant species documented during the 2005-2006 surveys;
5. Explanation of survey methods (including survey timing, frequency, and reporting);
6. Provisions for stakeholder consultation during implementation of the plan, updating the species list, and updating the management plan, and associated schedules;
7. Results of 2007 *Peltigera pacifica* surveys; and
8. Site-specific measures that would be implemented to protect *Peltigera pacifica* from disturbance during road and trail maintenance and on-going recreation activity, including maps and/or drawings to illustrate such measures, and associated implementation schedules.

The Project occupies lands in the Gifford Pinchot National Forest (GPNF) and Packwood Lake is partially bordered by the Goat Rocks Wilderness. The USDA Forest Service (USFS) has required that EN develop a comprehensive Threatened, Endangered and Sensitive Species Management Plan to address the issues listed below as they apply to the management of rare plants. The relevant USFS condition as it relates to this plan includes the following:

Within one year of License issuance, the Licensee shall, in coordination and consultation with the USDA Forest Service prepare a Threatened, Endangered (Federal listed) and USDA Forest Service Regional Forester Special Status Species Management Plan that shall be filed with the Commission for approval. The goal of the plan is to provide protection, management, enhancement and monitoring of threatened, endangered, and sensitive species and their habitats that may be affected by project operation or project-related activities over the life of the License. The plan at a minimum shall require the Licensee to:

- 1. Initial species list - The initial list should include threatened, endangered and sensitive species that occur within the project boundary or on lands affected by project operation or project-related activities. For each species, the list should reference the relicensing studies that documented occurrence and/or evaluated project effects.*
- 2. Updating the species list - The plan should provide for annual consultation, review, and updating of the list. Species would be added or removed according to changes in their status or changes in the potential for project effects (e.g., construction of new facilities).*
- 3. Conducting baseline surveys - The plan should provide for baseline surveys of species currently on the list if no surveys have been completed at sites where project operations or project-related activities could affect them. Baseline surveys should also be conducted for species that may be added to the list if they occur at sites where the project could affect them.*
- 4. Preparing biological evaluations - Where USDA Forest Service Regional Forester Special Status Species may be affected, ENW should consult with the USDA Forest Service to prepare a draft biological evaluation, in accordance with the Condition No. 1 - Implementation of Activities on National Forest System Lands.*
- 5. Monitoring project effects - For USDA Forest Service Regional Forester Special Status Species, the plan should include monitoring to identify project effects at confirmed sensitive species sites every 2 years for 6 years following License issuance and at 3-year intervals thereafter, unless a determination can be made at year 6 that no additional monitoring is necessary. For other threatened, endangered, and sensitive species, the Licensee shall consult with the USDA Forest Service to determine an appropriate monitoring frequency, based on site-specific conditions.*
- 6. Implementing protective measures - The plan should provide for designing and implementing protection, mitigation, enhancement or restoration measures if monitoring results show project-related effects.*
- 7. Effectiveness monitoring and adaptive management - The plan should include follow-up monitoring to measure the effectiveness of any protective measures that are implemented,*

and use of this information to modify and improve the Threatened, Endangered, and Sensitive Species Management Plan. Adaptive management shall mean the adoption of the following strategic actions: measures shall be implemented, effectiveness monitoring shall take place, and alternative fallback options shall be employed if proposed control measures fail to protect and enhance fish and wildlife resources as anticipated.

8. *Consultation, reporting, and updating the Threatened, Endangered, and Sensitive Species Management Plan - The plan should provide for annual reporting and consultation, with updates to the plan as needed. The report shall be provided to the USDA Forest Service 30 days prior to the annual Resource Coordination meeting. The report shall also provide details for the out-years planned activities. The Licensee shall allow a minimum of 60 days for the USDA Forest Service to comment and to make recommendations prior to filing the final report with the Commission for approval. If the Licensee does not adopt a recommendation, the filing shall include the Licensee's reasons, based on Project-specific information.*

The Plan describes EN's efforts to comply with these requirements. The Plan is intended to become part of the Threatened, Endangered and Sensitive Species Management Plan required by the USFS. The Plan has been developed and submitted separately, as required to respond to the FERC AIR. This Plan was developed with consultation and assistance from the local USFS staff. A draft version of the plan has been submitted to the USFS and their revisions and comments were incorporated prior to filing with FERC.

1.2 Purpose and Scope of the Plan

The primary objectives of the Plan are as follows:

- Provide for protection, management, enhancement and monitoring of rare plant species and their habitats that may be affected by Project operation or Project-related activities over the life of the License.
- Provide EN and the Resource Agencies Committee (RAC) a process and framework for rare plant management (consultation, reporting and surveys) within the Project area, which includes the FERC-designated Project boundary, and lands affected by Project operation or Project-related activities over the life of the new License.

2.0 MONITORING PLAN

This section describes how biological evaluations, rare plant surveys, monitoring, and rare plant management will occur within the Packwood Lake Project area.

2.1 Biological Evaluation

Where there is a potential for Regional Forester Special Status Species to be affected by Project operations or maintenance, actions associated with other management plans, or other ground disturbing activities, EN will consult with the USFS in advance, to determine the need for, and if

necessary, prepare a draft biological evaluation. Biological evaluations will be based on the location of known rare plant occurrences, the type of ground disturbing activity and potential impacts associated with it. Biological evaluations are subject to review and approval by the USFS for habitat and ground-disturbing activities on NFS lands. If Project-related effects to rare plant occurrences are anticipated, reasonable protection, mitigation, enhancement or restoration measures will be implemented, as defined in the approved biological evaluation. Updated USFS, Washington Natural Heritage Program (WNHP), and United States Fish and Wildlife Services (USFWS) rare plant species lists will be included in the biological evaluation. Any field surveys or monitoring will be conducted and reported according to USFS standards.

2.2 Project Area Rare Plant Survey

Rare plant surveys of the Packwood Lake Project area were conducted between 2005 and 2007. The results of these surveys are contained in the Rare Plant Survey Final Report (EN, 2008). Additional surveys of the Project area will be conducted at 10-year intervals for the duration of the Project's new license. The first survey will be in 2028. These surveys will follow the standard field methods described in the Revised Rare Plant Survey Study Plan for Energy Northwest's Packwood Lake Hydroelectric Project FERC No. 2244, Lewis County, Washington (EN 2005). Surveys of USFS lands will also meet standards described in the *Threatened, Endangered and Sensitive Plants Survey Field Guide* (USFS 2005a) and in the *Threatened, Endangered, and Sensitive Plants Element Occurrences Field Guide* (USFS 2005b). Figure 1 is a map of the area that will be surveyed. The 10-year survey is to include Lower Lake Creek with the exception of inaccessible areas that are a safety concern. (See Section 1.1 and Figure 1-1 of the revised Rare Plant Survey Final Report for a comprehensive description of the study area (EN 2008)). Results of surveys will be reported to appropriate agencies in the annual report and protective measures will be developed and applied to any new rare plant occurrences.

2.3 Monitoring

A strategy of adaptive management will be employed with respect to rare plant occurrences such that if protective measures are implemented, effectiveness monitoring will take place at agreed intervals. Alternative measures will be developed in consultation with the USFS if proposed control measures fail to protect or enhance rare plant occurrences as anticipated.

Known rare plant occurrences on NFS lands within the Project boundary (i.e., the *Peltigera pacifica* and Oregon goldenaster occurrences) will be monitored to identify potential Project effects every 2 years for 6 years following License issuance and at 5-year intervals thereafter. The first of the every 2-year surveys will occur in year 1 of the new license. The 5-year surveys will be synchronized with the 10-year Project area surveys described above. Results of the monitoring effort will be included in the annual report to the appropriate agencies to evaluate the effectiveness of existing protection, mitigation, enhancement, and restoration measures. If there are negative Project-related effects, EN will consult with RAC during the annual meeting to modify and improve protective measures. Follow-up monitoring will measure the effectiveness of any protective measures that are implemented. This information will be included in the annual report and will be incorporated into the Plan.

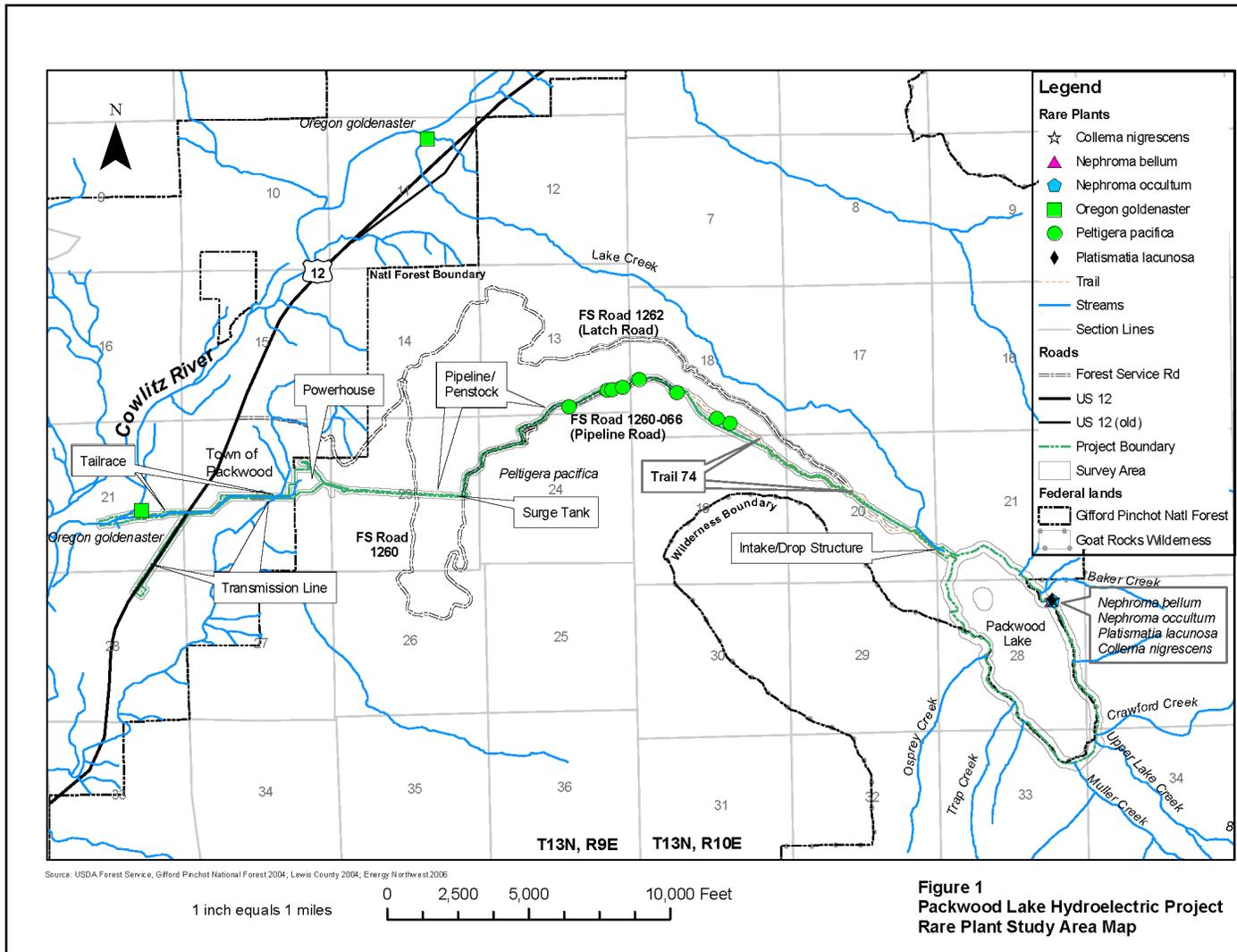


Figure 1. Packwood Lake Hydroelectric Project Rare Plant Study Area Map.

2.4 Management of Known Rare Plant Occurrences

The rare plant species located and mapped in the Packwood Lake study area during rare plant surveys conducted from 2005 to 2007 (EN 2008). The Pipeline Road *Peltigera pacifica* occurrence and the Cowlitz River Oregon goldenaster occurrence are the only rare plant species known within the Project area.

2.4.1 *Peltigera pacifica*

The *Peltigera pacifica* Pipeline Road occurrence consists of eight small subpopulations along a 1.25 mile portion of USFS Road 1260-066 (Pipeline Road), Pipeline Trail #74 and the buried pipeline (all on NFS lands) (EN 2005). Project-related maintenance of any of these features has the potential to affect the *Peltigera pacifica* occurrence through direct loss, disturbance, noxious weed spread or habitat alterations. Invasive plant species could potentially degrade or occupy *Peltigera* habitat. The *Peltigera* occupies habitat adjacent to, but not on the road prism of USFS Road 1260-066 and the Pipeline Trail, which has been subject to minimal routine maintenance during the last several years. While there are no planned changes to how the road, Pipeline Trail or pipeline will be used or maintained under the new License, inevitably some maintenance to the road, trail, or pipeline will be necessary in the future. Ground-disturbing activities associated with maintenance could affect *Peltigera* thalli or habitat. The overstory canopy of young coniferous trees and tall shrubs growing along the road and pipeline where the *Peltigera pacifica* grows might become too large and require trimming or removal. If disturbance in its habitat or to its population were unavoidable, *Peltigera pacifica* may be able to successfully maintain or re-establish itself through time based on the observation that the population initially established itself in the young forested stand that grew up after the road and pipeline were constructed in the early 1960s.

Peltigera pacifica is a USFS Regional Forester Special Status Species lichen species that grows on soil, duff, woody debris and occasionally on tree bases in low elevation, moist forests. This lichen species is identifiable year round (when not under snow).

EN proposes the following measures for PME of the Pipeline Road *Peltigera pacifica* occurrence in the Project Area.

- Monitor the *Peltigera pacifica* occurrence every 2 years for 6 years following License issuance and at 5-year intervals thereafter.
- During these surveys, monitor for noxious weed infestations in *Peltigera* habitat. If noxious weeds are located in *Peltigera* habitat, these weeds will be controlled according to the Packwood Lake Project Integrated Weed Management Plan in consultation with the USFS (EN 2019).
- USFS Road 1260-066 will be maintained according to USFS Maintenance Level 2 (ML2) guidelines. At this maintenance level, it is not anticipated that activities will need to occur off the road prism.

- *Peltigera pacifica* thalli have not been found growing on the road prism. A biological evaluation for *Peltigera pacifica* subpopulations would be done in advance of any road or trail maintenance, tree and shrub trimming, or other ground disturbing activities planned for the area outside of the road or trail prism that would affect *Peltigera pacifica* thalli. A plan would be developed in consultation with the USFS, with a goal of avoiding or minimizing damage to *Peltigera pacifica* thalli and habitat and would include provisions to monitor, mark, protect, or move affected subpopulations during ground-disturbing activities.
- If damage to *Peltigera pacifica* thalli or habitat were unavoidable, rocks and moss mats with the attached lichen thalli could be experimentally permanently moved to a similar habitat or temporarily moved and replaced after maintenance work has been completed. If such transplanting were attempted, the transplants would be monitored twice a season for two years, or as agreed, to track and document whether this technique is successful.
- If destruction of some *Peltigera pacifica* subpopulations were unavoidable, a survey would be made for other populations outside of the Project area in the general vicinity. These populations would be preserved to provide for local propagation opportunities.
- Any needed revegetation of disturbed areas would be done with native plant species according to USFS standards.

Rare plant training will be provided to appropriate EN personnel. This training will cover all USFS rare plant species in the Project area, and provide information related to identification, ecology and protection.

2.4.2 Oregon goldenaster

An occurrence of Oregon goldenaster (*Heterotheca oregona*) is located on the Cowlitz River gravel bar near the tailrace, within the Project boundary on land owned by EN and on private land owned by others. There is also a small occurrence of four plants on private land at the confluence of Lake Creek and the Cowlitz River, which is not in the Project boundary (EN 2008). Project-related activities or effects that would cause direct loss, disturbance, or habitat alterations are not likely to occur either under the current license or under the proposed Project operating regime. Oregon goldenaster is a WNHP Sensitive species. Its typical habitat is open, sunny to partially shaded sites on sand and gravel bars along rivers. Seasonal river flooding is probably important in maintaining the habitat for this species (WNHP 2011). It is identifiable from June to September.

Listed noxious weeds, such as butterfly bush and Japanese knotweed, could cause habitat degradation and destruction within the Oregon goldenaster population. Operation of the Project may provide continued avenues for noxious weed introduction, establishment and spread. EN has developed an Integrated Weed Management Plan for the Project, which establishes responsibilities and requirements for the control of noxious weed infestations within the Project area (EN 2019). Noxious weed control would be deemed necessary, if listed noxious weeds such as butterfly bush or Japanese knotweed are present within Oregon goldenaster habitat in the Project area. As directed by the Integrated Weed Management Plan, EN is required to remove butterfly bush, knotweed species and other weed species listed by the Lewis County Noxious

Weed Control Board (LCNWCB) within the Project area. Control of the noxious weeds in and near the population would be beneficial, but care will be taken also, so that rare plants are not negatively affected by trampling or control measures (EN 2019).

EN proposes the following measures for PME of the Oregon goldenaster occurrence in the Project area.

- Survey Oregon goldenaster occurrence in the Project area prior to ground-disturbing activities in lower Lake Creek.
- Resurvey the Oregon goldenaster occurrence every five years to monitor and identify Project effects during the new license term.
- During these surveys, monitor for noxious weed infestations in Oregon goldenaster habitat. If noxious weeds are located, they will be controlled according to the Integrated Weed Management Plan in consultation with the LCNWCB (EN 2019).
- Though none is planned during the next license period, if any Project-related ground disturbing activities in the vicinity of the Oregon goldenaster occurrence were to occur, the USFS would be consulted to determine the need for a biological evaluation. A biological evaluation would be prepared if necessary, in advance of any ground disturbing activities in the area, with the goal of avoiding or minimizing damage to the goldenaster occurrence.
- Ensure that any fish habitat restoration efforts in the Lower Lake Creek area (RM 0.0 to 0.3) do not disturb the small Oregon goldenaster subpopulation at the mouth of Lake Creek.

Native plants should be used to revegetate any disturbed areas.

2.4.3 Collema nigrescens, Nephroma bellum, Nephroma occultum, and Platismatia lacunosa

Small occurrences of four USFS Regional Forester Special Status Species lichens (*Collema nigrescens*, *Nephroma bellum*, *Nephroma occultum*, and *Platismatia lacunosa*) were located together just outside of the Project boundary, along the Packwood Lake Trail in the Goat Rocks Wilderness Area (EN, 2008). *Collema nigrescens* grows on the bark of broad-leaved trees and shrubs, in low elevation forests. *Nephroma bellum* grows on trees, shrubs and mossy rocks, in moist forests with strong coastal influences. *Nephroma occultum* grows on the bark and wood of conifers in old growth forests in the west Cascades. *Platismatia lacunosa* grows on bark and wood of trees, especially alders, and mossy rocks, in moist riparian forests and moist cool upland sites. All four of these lichen species are identifiable year-round. No Project-related activities are anticipated to affect any of these occurrences, and thus no special management measures for these species are proposed.

3.0 CONSISTENCY WITH AGREEMENTS MADE DURING RELICENSING PROCEEDINGS

What follows is an itemized and chronological list (most recent first) of key milestones associated with the development of the Rare Plant Management Plan conducted during relicensing activities, data reporting, collaboration and appropriate measures for the new license and subsequent agreements and formal communications to relevant parties. All reporting, data result summaries and meeting minutes have been shared with stakeholders, catalogued on EN's website and where required, filed with FERC.

- Comments on the February 2009 Draft Environmental Assessment; Modified FPA 4(e) Term and Condition; Justification Statements for the Terms and Conditions; and the Schedule for Finalization of the 4(e) Terms and Conditions, USFS to FERC, March 2009
- Draft Environmental Assessment Comments, EN to FERC, March 2009
- Request for Concurrence under the Endangered Species Act for the Relicensing of the Packwood Lake Hydroelectric Project, FERC to USFWS, February 2009
- Request for Concurrence under the Endangered Species Act for the Relicensing of the Packwood Lake Hydroelectric Project, FERC to NMFS, February 2009
- Notice of Availability of Draft Environmental Assessment, FERC to EN, February 2009
- Recommendations, Terms and Conditions, WDFW to FERC, August 2008
- Comments on the April 2008 Final License Application; Preliminary FPA 4(e) Terms and Conditions; Justification Statements for the Terms and Conditions; and the Schedule for Finalization of the 4(e) Terms and Conditions, USFS to FERC, August 2008
- USDA Forest Service Preliminary FPA 4(e) Terms and Conditions WDFW Comments, July 2008
- USDA Forest Service Preliminary FPA 4(e) Terms and Conditions USFS Draft, July 2008
- Request for Additional Information, EN to FERC, June 2008
- Rare Plant Management Plan, June 2008
- Integrated Weed Management Plan, June 2008
- Request for Additional Information, FERC to EN, April 2008
- Application for New License, February 2008
- USFS PME Discussion, November 2007
- Preliminary Licensing Proposal, September 2007
- Draft Biological Assessment, September 2007
- Study Progress Report, EN to FERC, August 2007

- Synthesis Report Meeting, June 2007
- Biological Assessment, Tailrace Barrier, EN to FERC, April 2007
- Vegetation Cover Type Mapping Report, March 2007
- Synthesis Report: Rare Plants, March 2007
- Response to Initial Study Report Findings, USFS to FERC, January 2007
- Rare Plant Survey Final Report, January 2007
- Response to Filings, EN to FERC, December 2006
- Meeting Summaries, EN to FERC, December 2006
- Study Reports Meeting, December 2006
- Vegetation Cover Type Mapping Draft Report, November 2006
- Rare Plant Survey Draft Report, September 2006
- Study Program Report, EN to FERC, September 2006
- Comments on Revised Study Plans and Comments on Article 37 Waiver Request, USFS to FERC, September 2005
- Submittal of Revised Study Plans WDFW comments, WDFW to FERC, September 2005
- Vegetation Cover Type Mapping Study Plan, August 2005
- Rare Plant Survey Study Plan Revised, August 2005
- Submittal of Revised Study Plans, EN to FERC, August 2005
- Vegetation Cover Type Mapping Study Plan Proposed, April 2005
- Submittal of Proposed Study Plans, EN to FERC, April 2005
- Comments on PAD and Scoping Document 1 and Study Reports, USFS to FERC, March 2005
- Comments on Pre-Application Document, Scoping Document 1, and Study Requests, USFWS to FERC, March 2005
- Pre-Application Document Supplement No. 1, December 2004
- Rare Plants or High Quality Native Ecosystems, Washington State Department of Natural Resources to EN, June 2004

4.0 SCHEDULE

This section describes the consultation and reporting process EN will follow with regard to rare plants in the Packwood Lake Project area. For the purposes of this Plan, “rare plant species” include all USDA Forest Service (USFS) Regional Forester Special Status Species (USFS 2015) vascular plants, bryophytes, and lichens; Washington Natural Heritage Program (WNHP) plant species; and USFWS Threatened, Endangered and Sensitive plant species (Appendix A). The Plan will ultimately be a part of, and will be coordinated with, the Threatened, Endangered, and Sensitive Species Plan. Lands addressed by this Plan include those within the FERC-designated Project boundary, or those outside of the Project boundary influenced by Project-related, ground-disturbing activities, or any other activities conducted as a part of Project operations or license compliance.

An annual rare plant management report describing all activities related to rare plant management will be provided to the USFS and the RAC 30 days prior to the annual Resource Coordination meeting (which will be required under the USFS mandatory conditions). The annual meeting will provide a routine opportunity for agency consultation regarding rare plants and other environmental topics important to the operation of the Project as they affect USFS administered lands. The report will also provide details for the coming year’s planned activities and determine whether preparation of any biological evaluations will be necessary. If EN does not adopt a recommendation, the report will include the reasons, based on Project-specific information. The annual report and the Plan will include updated USFS, WNHP, and USFWS rare plant species lists, in which plant species are added or removed, according to changes in their status. Activities associated with other management plans, including the Integrated Weed Management Plan, Lower Lake Creek Stream Restoration Plan, and the Road Maintenance Plan will be coordinated with the provisions and goals of the Plan.

The Packwood Project Specialist will oversee and monitor activities relating to the Plan, evaluate the effectiveness of existing protective measures, coordinate with the USFS and the RAC, and maintain an in-house rare plant occurrence database and will be responsible for preparing the annual rare plant management report. New information will be added to the Plan annually and it will be reviewed every 5 years and updated, if needed, in consultation with the agencies. The agency review and comment procedures described above for the annual report will be used for any future filing of a revised, updated Plan.

Rare plant surveys and monitoring efforts on GPNF lands will meet standards described in the *Threatened, Endangered and Sensitive Plants Survey Field Guide* (USFS 2005a). Newly located and existing rare plant occurrences will be documented following *Threatened, Endangered, and Sensitive Plants Element Occurrences Field Guide* (USFS 2005b). Rare plant surveys and monitoring of other public, private, and EN lands will be performed and documented according to the methodology described in the Revised Rare Plant Survey Study Plan for Energy Northwest’s Packwood Lake Hydroelectric Project FERC No. 2244, Lewis County, Washington (EN 2005). All rare plant surveys and monitoring will be done at an appropriate time of the year by qualified botanists.

5.0 REFERENCES

- Energy Northwest (EN). 2005. Revised Rare Plant Survey Study Plan for Energy Northwest's Packwood Lake Hydroelectric Project FERC No. 2244, Lewis County, Washington. August 2005.
- EN 2008. Rare Plant Survey Final Report for Energy Northwest's Packwood Lake Hydroelectric Project FERC No. 2244, Lewis County, Washington. May 2008.
- EN. 2019. Packwood Lake Hydroelectric Project Integrated Weed Management Plan. January 2019.
- Federal Energy Regulatory Commission (FERC). 2008. Request for Additional Information. Packwood Lake Hydroelectric Project No. 2244-022. Energy Northwest. April 8, 2008.
- USDA Forest Service (USFS). 2005a. Threatened, Endangered, and Sensitive Plants Survey Field Guide.
- USFS. 2005b. Threatened, Endangered, and Sensitive Plants Element Occurrences Field Guide.
- USFS. 2015. Regional Forester's Special Status Species List - Federally Threatened, Endangered, and Proposed (TE&P), USDA Forest Service, Pacific Northwest Region, July 2015. Online at: <http://www.fs.fed.us/r6/sfpnw/issssp/agency-policy/>
- Washington Natural Heritage Program. 2011. Field Guide to the Rare Plants of Washington. Online at: <https://www.dnr.wa.gov/NHPfieldguide>

APPENDIX A

**UPDATED USFS SENSITIVE SPECIES AND WNHP LIST OF KNOWN OCCURRENCES OF
RARE PLANTS IN LEWIS COUNTY, WASHINGTON**

**Updated USFS Sensitive Species, and WNHP List of Known Occurrences of Rare Plants
in Washington**

GPNF Sensitive Species July 2015	Documented (D) or Suspected (S)
Bolandra oregana	D
Carex densa	D
Carex macrochaeta	S
Carex proposita	D
Chrysolepis chrysophylla var. chrysophylla	D
Cicuta bulbifera	S
Collinsia sparsiflora var. bruceae	S
Coptis aspleniifolia	S
Corydalis aquae-gelidae	D
Cryptantha rostellata	S
Damasonium californicum	S
Dermatocarpon meiophyllizum	S
Erigeron howellii	S
Erigeron oreganus	S
Eriophorum vridicarinatum	D
Eryngium petiolatum	S
Erythranthe pulsiferae	D
Erythranthe suksdorfii	S
Fritillaria camschatcensis	S
Hedysarum occidentale	D
Heterotheca oregona	D
Howellia aquatilis (threatened)	
Juncus howellii	D
Leptogium cyanescens	S
Leptosiphon bolanderi	S
Lomatium suksdorfii	S
Luzula arcuate ssp. unalaschcensis	D
Lycopodiella inundata	S
Meconella oregana	S
Microseris borealis	D
Montia diffusa	D
Navarretia tagetina	S
Ophioglossum pusillum	S
Orthocarpus bracteosus	D
Packera bolanderi var. harfordii	
Pedicularis rainierensis	S
Penstemon barrettiae	D
Penstemon wilcoxii	D
Pinus albicaulis	D
Poa nervosa	S
Polemonium carneum	S
Ramalina thrausta	D
Ranunculus populago	D
Ranunculus triternatus	S

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Rorippa columbiae	S
Scribneria bolanderi	S
Scouleria marginata	S
Sidalcea hirtipes	D
Sisyrinchium sarmentosum	D
Tholurna dissimilis	
Usnea longissima	D
Utricularia intermedia	D

Washington Natural Heritage Information System
List of Known Occurrences of Rare Plants in Lewis County, Washington
June 2018

<i>Scientific Name</i>	<i>Common Name</i>	<i>State Status</i>	<i>Federal Status</i>	<i>Historic Record</i>
Balsamorhiza deltoidea	Puget Balsamroot	R2		
Calamagrostis canadensis var. imberbis	Blue Joint Reedgrass	R2		H
Carex densa	Dense Sedge	T		
Cimicifuga elata var. elata	Tall Bugbane	S	SC	
Delphinium leucophaeum	Pale Larkspur	E	SC	
Erigeron aliceae	Alice's Fleabane	S		
Eryngium petiolatum	Oregon Coyote-thistle	T		
Erythronium revolutum	Pink Fawn-lily	S		
Euonymus occidentalis var. occidentalis	Western Wahoo	T		
Githopsis specularioides	Common Blue-cup	S		
Isoetes nuttallii	Nuttall's Quillwort	S		
Lathyrus holochlorus	Thin-leaved Peavine	E	SC	
Lathyrus vestitus ssp. bolanderi	Pacific Pea	E		
Lupinus sulphureus ssp. kincaidii	Kincaid's Sulfur Lupine	E	LT	
Meconella oregana	White Meconella	T	SC	H
Montia diffusa	Branching Montia	S		H
Pedicularis rainierensis	Mt. Rainier Lousewort	S		
Poa laxiflora	Loose-flowered Bluegrass	S		
Polemonium carneum	Great Polemonium	T		
Potentilla breweri	Brewer's Cinquefoil	T		H
Sidalcea hirtipes	Hairy-stemmed Checker- mallow	ET		
Sidalcea nelsoniana	Nelson's Checker-mallow	E	LT	
Silene scouleri ssp. scouleri	Scouler's catchfly	S		
Trillium parviflorum	Small-flowered trillium	S		

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Wyethia angustifolia California compassplant S

Description of Codes

Historic Record: H indicates most recent sighting in the county is before 1977.

State Status: State Status of plant species is determined by the Washington Natural Heritage Program. Factors considered include abundance, occurrence patterns, vulnerability, threats, existing protection, and taxonomic distinctness. Values include:

E = Endangered. In danger of becoming extinct or extirpated from Washington.

T = Threatened. Likely to become Endangered in Washington.

S = Sensitive. Vulnerable or declining and could become Endangered or Threatened in the state.

R2 = Review group 2. Of potential concern but with unresolved taxonomic questions.

Federal Status: Federal Status under the U.S. Endangered Species Act(USES) as published in the Federal Register:

LT = Listed Threatened. Likely to become endangered.

SC = Species of Concern. An unofficial status, the species appears to be in jeopardy, but insufficient information to support listing.