Appendix B: Tribal Rights, Interests, and Resources Technical Report

For Programmatic Environmental Impact Statement on Utility-Scale Onshore Wind Energy Facilities in Washington State

By

Anchor QEA

For the

Shorelands and Environmental Assistance Program

Washington State Department of Ecology

Olympia, Washington

June 2025, Publication 25-06-003

DEPARTMENT OF ECOLOGY
State of Washington

Table of Contents

Acronyms and Abbreviations List **4**

Summary **5**

Crosswalk with Tribal Rights, Interests, and Resources Technical Report for Utility-Scale Solar Energy **6**

1 Introduction **7**

1.1 Resource description 7

1.2 Regulatory context 9

2 Methodology **14**

2.1 Study area 14

2.2 Technical approach 16

2.3 Impact assessment approach 17

3 Technical Analysis and Results **19**

3.1 Overview 19

3.2 Affected environment 19

3.2.1 Cultural resources associated with Tribal use 19

3.2.2 Natural resources associated with Tribal use 21

3.2.3 Other Tribal rights and interests 26

3.3 Potentially required permits and approvals 26

3.4 Impact assessment 26

3.4.1 Impacts from construction and decommissioning 26

3.4.2 Impacts from operation 30

3.5 Measures to avoid, reduce, and mitigate impacts 31

3.5.1 General measures 32

3.5.2 Recommended measures for siting and design 34

3.5.3 Required measures 34

3.5.4 Recommended measures for construction, operation, and decommissioning 34

3.5.5 Mitigation measures for potential significant impacts 35

4 References **36**

List of Figures and Tables

Figure

Figure 1. Onshore Wind Energy Facilities PEIS – geographic scope of study 15

Tables

Table 1. Applicable treaties, laws, court cases, executive orders, plans, and policies..... 10
Table 2. Level III Ecoregions in the study area..... 23

Acronyms and Abbreviations List

ARPA	Archaeological Resources Protection Act
CFR	*Code of Federal Regulations*
DAHP	Washington State Department of Archaeology and Historic Preservation
Ecology	Washington State Department of Ecology
ESA	Endangered Species Act
NAGPRA	Native American Graves Protection and Repatriation Act
NHPA	National Historic Preservation Act
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries Service
NRHP	National Register of Historic Places
PEIS	Programmatic Environmental Impact Statement
PHS	Priority Habitats and Species
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SHPO	State Historic Preservation Office
TCP	Traditional Cultural Property
THPO	Tribal Historic Preservation Office
USC	*United States Code*
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WISAARD	Washington Information System for Architectural and Archaeological Records Data

Summary

This technical resource report describes the conditions of Tribal rights, interests, and resources in the study area. It also describes the regulatory context, potential impacts, and measures that could avoid, reduce, or mitigate impacts. Tribal rights, interests, and resources refer to the collective rights and access to traditional areas and times for gathering resources associated with an Indian Tribe's sovereignty since time immemorial. They include inherent rights or formal treaty rights associated with usual and accustomed territories. Tribal resources include Tribal cultural lands, archaeological sites, sacred sites, fisheries, and other rights and interests in Tribal lands and lands within which a Tribe or Tribes possess rights reserved or protected by federal treaty, statute, or executive order. Resources include plants, wildlife, and fish used for commercial, subsistence, and ceremonial purposes.

The analysis of impacts to Tribal rights, interests, and resources is different than for the impact analyses for environmental resources. Natural and built resources were analyzed in other technical resource reports to determine whether onshore wind energy facilities could have significant impacts from a non-Tribal perspective and whether those impacts could be mitigated. The impact analysis for Tribal rights, interests, and resources references the other resource analyses but does not make findings of significance The significance of impacts to Tribal rights, interests, and resources analyzed within this report can only be understood from within the context of an affected Tribe.

For impacts to Tribal rights, interests, and resources, any determinations of significance or non-significance would be done with engagement and in consultation with each potentially affected Tribe at the project level. This would be done through the State Environmental Policy Act process or the National Historic Preservation Act Section 106 process.

Crosswalk with Tribal Rights, Interests, and Resources Technical Report for Utility-Scale Solar Energy

Two Programmatic Environmental Impact Statements (PEISs) are being released at the same time, one for utility-scale solar energy facilities and one for utility-scale onshore wind energy facilities. This crosswalk identifies the areas with substantial differences between the Tribal rights, interests, and resources technical reports for each PEIS.

Utility-Scale Solar Energy PEIS	Utility-Scale Onshore Wind Energy PEIS (this document)
• Differences in specific impact drivers associated with facilities	• Larger study area includes consideration of additional geographic regions and steeper sloped/more mountainous areas • Differences in specific impact drivers associated with facilities

1 Introduction

This technical resource report describes the analysis of probable impacts to Tribal rights, interests, and resources from utility-scale onshore wind energy facilities that may be considered within the study area. Chapter 2 of the State Environmental Policy Act (SEPA) Programmatic Environmental Impact Statement (PEIS) provides a description of the types of facilities evaluated (alternatives).

1.1 Resource description

Revised Code of Washington (RCW) 43.21C.535 directs the Washington State Department of Ecology (Ecology), as part of the nonproject environmental review process, to identify potential impacts to Tribal rights, interests, and resources. These resources include Tribal cultural resources, archaeological sites, sacred sites, fisheries, or other rights and interests in Tribal lands and lands within which an Indian Tribe or Tribes possess rights reserved or protected by federal treaty, statute, or executive order. Certain information obtained by Ecology under this section is exempt from disclosure consistent with RCW 42.56.300.

Indigenous Tribes and populations have been in the Northwest since time immemorial. There are 32 federally recognized Tribes with lands and territories in Washington state. Each of these Tribes continues to have close connections to its aboriginal territories. Tribes in Washington have reserved rights to fish and harvest natural resources throughout much of the state. Treaty fishing may occur in small and large rivers and marine areas.

Under treaties[1] negotiated by Territorial Governor Isaac Stevens on behalf of the United States, Tribes ceded 64 million acres of land to the United States for non-Indian settlement and the subsequent establishment of Washington state. Tribes retained about 6 million acres of reservation land and specifically reserved the right to take fish in their "usual and accustomed" areas, including ceded territories, along with the right to harvest and hunt on "open and unclaimed lands," among other things. Tribes reserved rights to gather and access foods and religious sites in their treaties with the federal government. Washington Tribes also retain rights via executive orders and legislative actions.

Tribes are recognized as unique sovereign people that exercise self-government rights that are guaranteed under treaties and federal laws. Each Tribal reservation in the state constitutes a bordering sovereign jurisdiction subject to federal and Tribal environmental laws. Energy facilities could affect Tribal interests, treaty rights, and resources in and around the areas where facilities are built or the affected resources could extend well beyond the proposed footprint of a facility. Impacts during facility construction, operations, and decommissioning could occur from land disturbance that affects Traditional Cultural Properties (TCPs) or archaeological sites; changes in access to areas where traditional hunting, fishing, gathering, or

[1] https://goia.wa.gov/resources/treaties

other traditional practices occur; impacts on plants, animals and ecological communities in areas used by Tribal members for purposes including harvesting first foods; or interruption of spiritual practices. Any of these impacts may disrupt and degrade the health and mental well-being of Tribal members.

Tribal rights, interests, and resources refer to the collective rights and access to traditional areas and times for gathering resources associated with an Indian Tribe's sovereignty since time immemorial. They include inherent rights or formal treaty rights associated with usual and accustomed territories. In addition, Tribal resources include areas important to traditional cultural practices and the natural and cultural resources associated with those practices including plants, wildlife, or fish used for commercial, subsistence, and ceremonial purposes.

Resources may also include archaeological or historic sites or TCPs associated with Tribal use and sites considered sacred by Tribes. Tribal resources, archaeological sites, historical and cultural sites, TCPs, and natural resources often can be interconnected and overlapping as Tribal resources.

Natural resources important to Tribes are also Tribal resources. Hunting, fishing, and gathering provide essential subsistence and are first foods documented in ethnographic literature, traditional and oral accounts, and archaeological sites. Fish and animals were historically and are currently harvested and hunted for food, cultural, and ritual uses. Plants were historically and are currently gathered for food, medicine, and ritual uses, as well as for raw material for tools, clothing, basketry and mats, and other uses.

Preservation of land and culture is essential to the identity of the Tribes. The land provides the living space, the sacred and cultural sites, and the natural resources that sustain Tribal peoples and cultures. It provides spiritual and physical sustenance and the means for economic self-sufficiency.

The following resources could have impacts that overlap with impacts to Tribal rights, interests, and resources. Impacts on these resources are reported in their respective technical resource reports:

- **Environmental justice:** Analysis of impacts on environmental justice populations and overburdened community areas is included in the *Environmental Justice Technical Resource Report* (Appendix C).
- **Earth:** Potential impacts to soil are evaluated in the *Earth Technical Resources Report* (Appendix D).
- **Air quality:** Potential emissions and air quality are evaluated in the *Air Quality and Greenhouse Gases Technical Resource Report* (Appendix E).
- **Water resources:** Waters and wetlands are evaluated in the *Water Resources Technical Report* (Appendix F).
- **Biological resources:** Aquatic and terrestrial species and habitats are analyzed in the *Biological Resources Technical Report* (Appendix G).

- **Environmental health and safety:** The *Environmental Health and Safety Technical Resource Report* (Appendix I) addresses hazards and safety risks.
- **Noise and vibration:** The *Noise and Vibration Technical Resource Report* (Appendix J) evaluates these conditions for potential facilities.
- **Aesthetics/visual quality:** The visual change associated with facilities is evaluated in the *Aesthetics/Visual Quality Technical Resource Report* (Appendix L).
- **Recreational resources:** Areas and activities for recreation are evaluated in the *Recreation Resources Technical Report* (Appendix M).
- **Historic and cultural resources:** Historic and cultural resources are evaluated in the *Historic and Cultural Resources Technical Report* (Appendix N).
- **Transportation:** The *Transportation Resources Technical Report* (Appendix O) evaluates transportation needs for potential facilities.
- **Cumulative:** The *Cumulative Impacts Technical Report* (Appendix Q) evaluates potential cumulative impacts.

PEIS technical resource reports for other natural and built resources identify whether utility-scale onshore wind energy facilities could have significant impacts from a non-Tribal perspective and whether those impacts could be mitigated. Information from these reports is included in this technical resource report where there is potential for impacts to Tribal rights, interests, and resources.

Although some features may be documented in databases recording archaeological sites, historical sites, natural resources, or geographic landforms, no dedicated inventory of Tribal rights, interests, and resources exists. Resources known to Tribes, even within geographic ranges that were previously analyzed by environmental and cultural resources reviews, may be deliberately undisclosed in order to protect the resources and associated practices. Lack of known resources or prior disclosure should not be taken as equivalent to an absence of resources. Resources may be subject to looting and destruction; therefore, these resources are subject to confidentiality.

All areas of Washington state are within the traditional homelands of Indian Tribes. Prior to non-native settlement, these areas were and continue to be places of daily living, subsistence, ceremonial, and burial uses. Lands were subject to treaties, unilateral appropriation by the federal government, or negotiation between the federal government and Tribes. Tribal rights, interests, and resources exist throughout this homeland.

1.2 Regulatory context

The regulatory context for Tribal rights, interests, and resources stems from the government-to-government and trust relationship established by treaties and agreements between the United States and federally recognized Tribes. These treaty rights are affirmed by executive orders, case law, and legislation. Table 1 lists treaties, laws, court cases, and executive orders related to the evaluation of potential impacts to Tribal rights, interests, and resources.

Table 1. Applicable treaties, laws, court cases, executive orders, plans, and policies

Reference	Description
Federal	
Treaties, executive orders, and legislation acknowledging federally recognized Tribes, including: • Treaty of Medicine Creek, 1854 • Treaty of Neah Bay, 1855 • Treaty of Point Elliot, 1855 • Treaty of Point No Point, 1855 • Treaty of Walla Walla, 1855 • Treaty with the Yakama, 1855 • Quinault Treaty, 1856 • Agreement of May 9, 1891, and Act of July 1, 1892 (27 Stat. 62), and Executive Order Acknowledging Snoqualmie Indian Tribe	Treaties, executive orders, and legislation pertaining to Tribes within Washington State variably acknowledge homelands, set aside reservation lands, and reserved fishing, gathering, and hunting rights for the signatory Tribes throughout their areas. Note: Federal guidance (Working Group 2022) urges consulting agencies to interpret treaty rights as they would have been understood by the signatories.
American Indian Religious Freedom Act of 1978 (42 *United States Code* [USC] 1996)	Establishes that the policy of the federal government is to accommodate access to and ceremonial use of Indian sacred sites and avoid adverse effects on the physical integrity of the sites.
Antiquities Act of 1906 (54 USC 320301–320303, 18 USC 1866(b))	The Antiquities Act was enacted in 1906 and grants the President the authority to designate national monuments to protect significant natural, cultural, or scientific features. The goal of the act is to preserve public lands and cultural heritage, and it has played an important role in the formation of historic preservation policy. The act establishes a process of creating national monuments and protecting archaeological sites on federal land from looting and vandalism.
Archaeological and Historic Preservation Act of 1974 (Moss-Bennett Act, Archaeological Recovery Act; 16 USC 469–469c-2)	The act applies to all federal projects or federally assisted or licensed projects, activities, or programs. The act requires the preservation of significant scientific, prehistorical, historical, or archaeological data that would be irrevocably lost or destroyed by the activity. Then the federal agency must undertake the recovery, protection, and preservation of the data. This act can extend to private individuals, associations, or public entities if their project receives federal financial assistance.
Archaeological Resources Protection Act of 1979 (ARPA; 16 USC 470aa–470mm)	Enacted in 1979 to safeguard archaeological resources on public and Indian lands. Key provisions of ARPA emphasize its role in preventing the excavation, removal, or damage of cultural artifacts and archaeological sites. The act creates the requirement for permits for archaeological activities, penalties for violations, and the collaborative efforts between government agencies, Tribes, and the public to protect and preserve archaeological resources. It also establishes the prohibition of public disclosure of sensitive information, specifically the description and location of archaeological sites.

Reference	Description
Confidentiality of archaeological resources information (1984; 36 *Code of Federal Regulations* [CFR] 296.18)	Establishes that the federal land manager shall not make information concerning the nature of any archaeological resource available to the public except (1) when the disclosure will further the purposes of the ARPA without risking harm to the archaeological resource or site location and (2) when the state governor has submitted a written request of information to the federal land manager concerning archaeological resources within the governor's state that is specific to the archaeological resource or resource area and includes the purpose for the information sought and written commitment to adequately protect the confidentiality of the information.
Endangered Species Act of 1973 (ESA; 16 USC 1531 et seq.)	Requires Tribal consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) Fisheries when undertaking a federal action to ensure the conservation of any ESA-listed animal species and critical habitat so as not to jeopardize the continued existence of any listed species. NOAA Fisheries manages ESA-listed marine and anadromous species, while USFWS manages listed terrestrial and freshwater species.
Executive Order 11593, Protection and Enhancement of the Cultural Environment (1971)	The 1971 executive order establishes that the federal government provides leadership in preserving, restoring, and maintaining the historic and cultural environment and the cultural heritage of the nation's past for the benefit of future generations.
Executive Order 13007, Indian Sacred Sites (1996)	The 1996 executive order directs federal agencies to manage federal lands to accommodate access to and ceremonial use of Indian sacred sites and avoid adverse effects on those sites. The executive order also establishes the importance of maintaining confidentiality of sacred sites.
Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (2000)	The 2000 executive order establishes principles for Tribal consultation that include supporting Tribal sovereignty and self-determination and interacting on a government-to-government level.
Historic Sites Act of 1935 (49 Stat. 666, 16 USC 461–467)	Establishes a national policy to preserve nationally significant historic sites, buildings, and objects for the use and benefit of the people of the United States.
National Historic Preservation Act (NHPA; 54 USC 300101 et seq.)	The NHPA was approved on October 15, 1966, for the management and preservation of historical and archaeological sites. This act created the National Register of Historic Places (NRHP), National Historic Landmarks List, State Historic Preservation Office (SHPO), and Tribal Historic Preservation Office (THPO). Washington state's SHPO is the Department of Archaeology and Historic Preservation (DAHP), which is the state agency that administers NHPA compliance in Washington.
Native American Graves Protection and Repatriation Act of 1990 (NAGPRA; 25 USC 3001)	Enacted on November 16, 1990, NAGPRA establishes rights for lineal descendants, Native Americans and Tribes, and Native Hawaiian organizations to repatriate their culturally affiliated items, including human remains, associated and

Reference	Description
	unassociated funerary objects, sacred objects, and objects of cultural patrimony. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items and the intentional and inadvertent discovery of Native American cultural items on federal and Tribal lands only.
Section 106 (54 USC 306108) and Section 101 (54 USC 302706) of the NHPA, 36 CFR 800, and National Register Bulletin 38, Guidelines for Identifying and Documenting Traditional Cultural Properties	Establishes the NRHP. Section 106 requires that federal agencies consider the potential effects of undertakings on cultural resources, including archaeological sites, and historic sites. Section 101 and Bulletin 38 specify that properties of traditional religious and cultural importance to Indian Tribes or Native Hawaiian organizations may also be eligible for listing in the NRHP.
United States v. Washington, 384 F. Supp. 312 (W.D. Wash. 1974)	Commonly known as the Boldt Decision, the federal district court in this case interpreted the rights of federally recognized Tribes and Tribal members to take fish in the "usual and accustomed places in common with all citizens" to mean that federally recognized Tribes have a treaty-reserved right to harvest 50% of the harvestable portion of fish.
Washington v. Washington State, Commercial Passenger Fishing Vessel Association, 443 U.S. 658 (1979)	In this decision, the U.S. Supreme Court upheld the 1974 Boldt Decision.
36 CFR 61, Procedures for State, Tribal, and Local Government Historic Preservation Programs (1999)	This section of the regulations outlines the procedures and responsibilities for SHPOs, THPOs, and Certified Local Governments. This section also establishes the minimum professional qualifications for archaeology and historic preservation.
16 USC 470hh(a), Confidentiality of Information Concerning Nature and Location of Archaeological Resources (2014)	Provision of the ARPA that prohibits public disclosure of sensitive information specific to the nature and location of archaeological resources.
State	
Centennial Accord Between the Federally Recognized Tribes in Washington and the State of Washington (and Implementation Plan)	Establishes that Washington State and Tribes consult on a government-to-government basis. Outlines ideals and goals for improvements in economic opportunity, communication, and other areas. Provides guidelines for consultation.
Chapter 27.44 Revised Code of Washington (RCW), Indian Graves and Records	Concerns procedures and management of Indian cemeteries and remains.
RCW 42.56.300, Public Disclosure Exemptions	Exempts site records, maps, and portions of reports from public disclosure. Concerns archaeological resources and "Traditional Cultural Places," analogous to Traditional Cultural Properties or properties of traditional religious and cultural importance to Indian Tribes or Native Hawaiian organizations.
Governor's Executive Order 21-02, Archaeological and Cultural Resources (2021)	Requires consideration of potential effects to cultural resources by projects approved, undertaken, and funded by state agencies. This process requires consultation with DAHP, the Governor's Office of Indian Affairs, and affected Tribes.

Reference	Description
Governor's Executive Order 83-16, Governor's Office of Indian Affairs (1983)	Reaffirms the state's responsibility toward federally recognized Tribes in Washington to encourage and strengthen Tribal governments and formalize a state-Tribal relationship based on government-to-government interaction.

2 Methodology

2.1 Study area

The study area for Tribal rights, interests, and resources includes the PEIS geographic scope of study for utility-scale onshore wind energy facilities (Figure 1) and the surrounding land and resources. Facilities may have impacts localized to areas of construction and operation activities or may extend well beyond future proposed facility footprints, including cumulative impacts. Developers and resource agencies should be aware that the Tribes contacted regarding potential impacts to resources should not be limited to those with interests within a facility footprint, but must include those Tribes with interests within the geographic extent of project impacts, including but not limited to those discussed broadly in this report.

For projects on Tribal reservation lands, each federally recognized Tribe would determine use of their lands. Tribal reservation lands are not included in the PEIS geographic scope of study.

The PEIS geographic scope of study includes various federal, state, and locally managed lands; however, Tribal reservation lands; national parks, wilderness areas, and wildlife refuges; state parks; and areas within cities and urban growth areas were excluded from the geographic scope of study for facilities considered in the PEIS. Some of these areas adjacent to the PEIS geographic scope of study are considered in the study area if they contain Tribal resources that may be impacted by facilities.

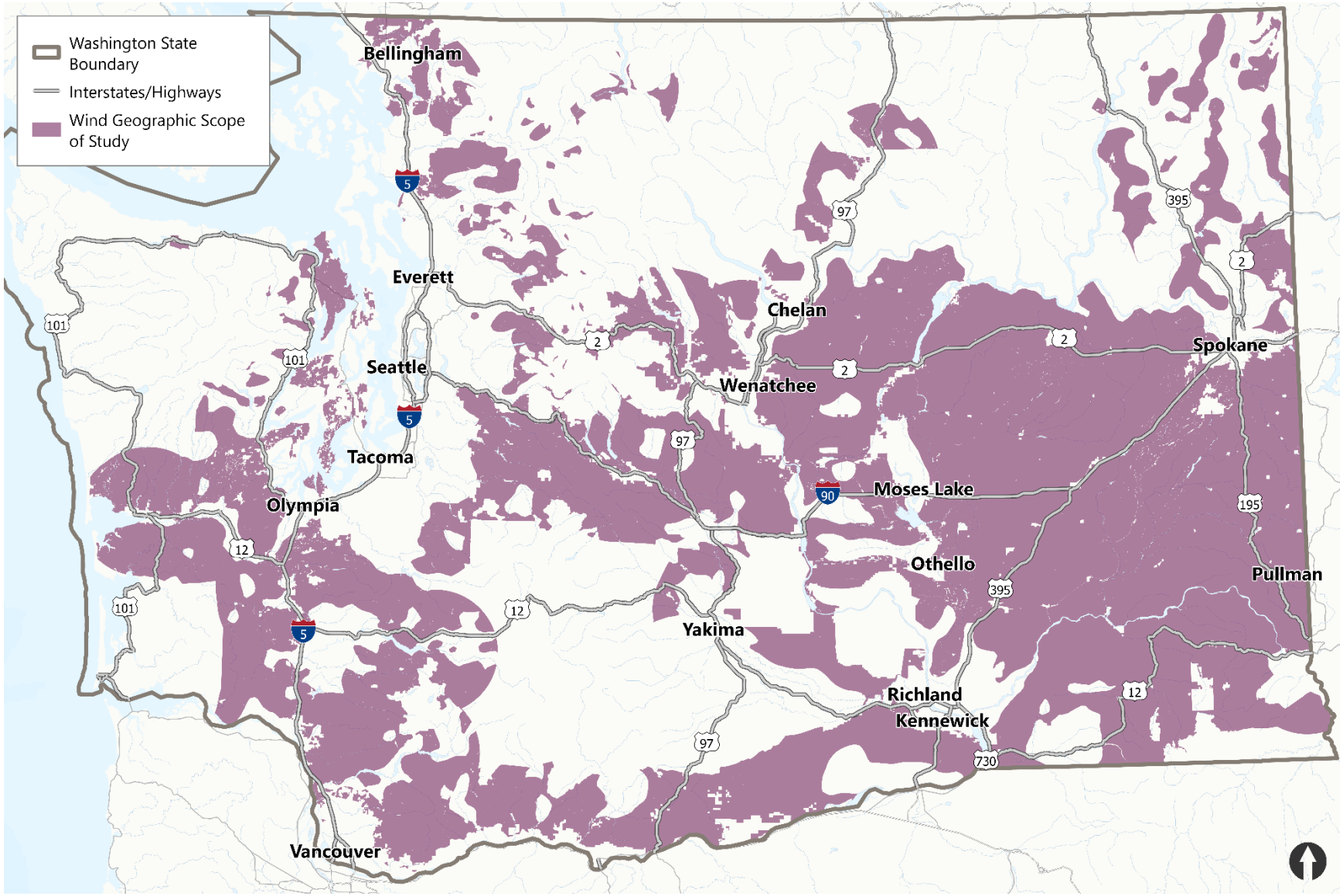

Figure 1. Onshore Wind Energy Facilities PEIS – geographic scope of study

2.2 Technical approach

Tribal rights, interests, and resources were identified through review of publicly available published literature, anthropological reports, scoping comments, and discussions with Tribes. Tribal communities are the best sources of information about Tribal rights, interests, and resources and impacts to such resources. Ecology invited early and meaningful engagement and offered consultation with any potentially affected federally recognized Tribe on the PEIS for the purpose of understanding, identifying, and mitigating, if possible, potentially significant environmental impacts to Tribal rights, interests, and resources. These include Tribal cultural resources, archaeological sites, sacred sites, fisheries, or other rights and interests on Tribal lands and lands within which an Indian Tribe or Tribes possess rights reserved or protected by federal treaty, statute, or executive order. Sensitive information obtained by Ecology is exempt from disclosure consistent with RCW 42.56.300 and will be filed and labeled appropriately. This resource report provides information on broad potential impacts to Tribal rights, interests, and resources from utility-scale onshore wind energy facilities for the PEIS. Input provided by Tribes in informational Tribal Forums and in formal comments on the technical resource report and the Draft PEIS regarding the potential impacts from utility-scale onshore wind energy facilities were incorporated in this report and in the Final PEIS.

The analysis of impacts to Tribal rights, interests, and resources differs in its approach when compared to the impact analysis for environmental resources. Natural and built resources were analyzed in other technical resource reports to determine whether onshore wind energy facilities could have significant impacts from a non-Tribal perspective and whether those impacts could be mitigated.

The impact analysis for Tribal rights, interests, and resources references the other natural resource analyses (e.g., the *Biological Resources Technical Report*) and considers the Tribes' unique and powerful connection to and reliance on cultural and natural resources.

Natural and cultural resources are highly interconnected. As a result of this connection, Tribes hold a deep intimate knowledge and understanding of the ecosystem, often referred to as Tribal Ecological Knowledge. The U.S. Fish and Wildlife Service (USFWS) defines Tribal Ecological Knowledge as "the evolving knowledge acquired by indigenous and local peoples over hundreds or thousands of years through direct contact with the environment" (Rinkevich et al. 2011). Tribal Ecological Knowledge is a valuable source of information and will continue to be considered as impacts from onshore wind energy facilities are evaluated.

The analysis of Tribal rights, interests, and resources included research into publicly available documents such as history documents and ethnographic information to broadly describe lifeways and cultural practices within the study area, representing the range of resources occurring across different physiographic regions. Research into prior cultural resources reviews within the study area was coordinated with the cultural and historic resources review and focused on ethnographic information, prior interviews with Tribal members, TCPs and possible TCPs, and resource use areas.

Specific projects and site-specific resources, impacts, and mitigation strategies are not addressed by the PEIS—it is a planning document that takes a broad look at resources and impacts. Therefore, the analysis in this report broadly identifies Tribal rights, interests, and resources considerations.

Publicly available federal, state, and local project and non-project environmental impact statements and planning documents on utility-scale onshore wind energy also form a robust library to inform the PEIS documents.

The following sources relate to Tribal rights, interests, and resources:

- Accounts and direct input as provided by affected Tribes
- Tribal and regional planning documents, such as the *Energy Vision for the Columbia River Basin* prepared by the Columbia River Inter-Tribal Fish Commission (CRITFC 2022)
- Indian Claims Commission decision library
- Ethnographic accounts (e.g., Waterman 2001; Smith 1969; Ray 1939; Teit 1928)
- Government Land Office Public Land Survey maps and notes
- Cultural resources records contained within the Washington State Department of Archaeology and Historic Preservation's (DAHP's) Washington Information System for Architectural and Archeological Records Data (WISAARD) and identified in the *Historic and Cultural Resources Technical Report* for the PEIS
- Other technical resource reports for the PEIS for identification of plants, wildlife, and areas important to traditional cultural practices and those associated with treaty rights related to usual and accustomed territories, as well as potential impacts to Tribes, including those listed in Section 1.1
- Scoping comments
- Comments provided on the Draft PEIS

2.3 Impact assessment approach

The PEIS analyzes a timeframe of up to 20 years of potential facility construction and up to 30 years of potential facility operations (totaling up to 50 years into the future). The significance of resources analyzed within this report can only be understood from within the cultural context of an affected Tribe. Accordingly, the impact assessment considered comments provided by Tribes for early drafts of this report and comments received on the Draft PEIS. Specific project impacts and determinations of significance or non-significance will be determined with engagement and in consultation with each potentially affected Tribe at the project level.

The analysis of impacts on Tribal resources considers the following:

- Construction and operation impacts on plant and animal species used by Tribal members, including disruption of terrestrial animals' use and migration patterns, which could affect Tribal hunting practices and access to first foods
- Loss of, or modifications to, habitats of species used by Tribal members

- Indirect impacts on species and habitats used by Tribal members, including fragmentation of habitats and impediments to migration
- Loss of access to a traditional hunting, fishing, or gathering area, or to an area where other traditional practices occur
- Impacts to archaeological sites and districts
- Impacts to TCPs
- Interruption of spiritual practices
- Loss of medicinal and traditional plants and foods
- Disruption and degradation of health and mental well-being of Tribal members

3 Technical Analysis and Results

3.1 Overview

The following section outlines potential resources that may be affected by utility-scale onshore wind developments. This section describes the types of Tribal uses and resources in the study area. The study area is within the usual and accustomed areas of Tribes within and neighboring Washington state. Treaties, executive orders, and legislation describe ceded and reserved Tribal lands (see Table 1). Additionally, the study area is, and has historically been, used by the Tribes for hunting, traditional subsistence, habitation, and traditional Tribal rituals and ceremonies. RCW 70A.65.305 defines Tribal rights, interests, and resources to be analyzed by the PEIS. These resources include Tribal cultural resources, archaeological sites, sacred sites, fisheries, or other rights and interests in Tribal lands and lands within which an Indian Tribe or Tribes possess rights reserved or protected by federal treaty, statute, or executive order.

3.2 Affected environment

The affected environment represents existing conditions at the time this study was prepared. The range of resources considered within the affected environment includes cultural and historic resources, environmental justice, biological resources, water resources, recreation resources, environmental health and safety, noise and vibration, aesthetics and visual quality, transportation, air quality, and cumulative resources.

Figure 1, which shows the geographic scope of study, does not include Tribal reservation lands, federal lands, national parks, wilderness areas, wildlife refuges, or state parks, but information related to these areas is provided as context for the affected environment.

3.2.1 Cultural resources associated with Tribal use

Cultural resources are analyzed in more detail in the *Historic and Cultural Resources Technical Report*. The cultural resources discussion in this section is focused on properties associated with Tribal use or significance.

Archaeological sites and objects, defined in RCW 27.53.030, contain and represent the physical remains of prior human activity in a location. Unrecorded sites may be suspected by review of predictive models that are informed by statistical probabilities based on known site location trends (such as the DAHP statewide archaeological predictive model [DAHP 2010]), by expert models that incorporate information from literature and knowledgeable experts, or both. However, a lack of these resources cannot be determined solely by analyzing trends and models. Objects, including artifacts or features, representing Tribal heritage may be contained within fill and areas of prior disturbance that may not traditionally be considered important for scientific research or eligible for listing in the National Register of Historic Places (NPS 1997, 2000). Displaced archaeological objects and disturbed archaeological sites may retain

importance to Tribes and indicate past use within an area that may not have left a clear physical marker on the landscape.

Historic sites and structures representing people, events, and trends significant to the history of affected Tribes are expected to be located within the study area. Properties may include locations pertaining to important persons, conflict or accord, public assembly and demonstration, education, Tribal governance, enterprise, or many other historical themes. Previously published information about significant properties may be limited or incorrect. Consultation with Tribes is necessary for accurate information.

Ceremonial sites, sacred sites, places of funerary activity, and TCPs may have few or no physical markers that are recognizable to individuals who do not regularly practice the traditional culture with which they are associated. Even when features and sites are identified, the site function or significance may not be clear without consultation. Aside from TCPs, as defined by Parker and King (2012), these examples of cultural resources do not need to be 50 years or older to be considered within Tribal rights, interests, and resources. Cultural resources may be 50 years old by decommissioning of facilities and thus effects to these resources should be considered in impact analyses.

Although many archaeological and ethnographic studies have been conducted in the study area and have inventoried archaeological sites and TCPs, DAHP points out that only a small percent (approximately 5%; DAHP 2020) of the state has been surveyed for cultural resources at any level. Therefore, it should be assumed that potential facility sites have not been intensively surveyed. Additionally, surveys and studies that have taken place are often developed with project-specific research designs that may not account for all cultural resources that may be present within a particular area. Ethnographic studies may focus narrowly on specific types of traditional practices or on practices and locations that may be impacted by a set of project-specific characteristics.

Although limited surveys have been completed, the potential for cultural resources to exist within the study area can be interpolated using environmental variables. DAHP developed a statewide predictive model (DAHP 2010), available through its WISAARD database. The predictive model classifies areas as having *low risk*, *moderately low risk*, *moderate risk*, *high risk*, and *very high risk* for containing archaeological sites. The study area for the PEIS encompasses areas classified with probabilities ranging from *low risk* to *very high risk*.

The predictive model is a generalized planning tool intended to be used by DAHP for recommending archaeological surveys based on specific project parameters and should not be used for issuing determinations, especially on the suspected absence of resources. The predictive model should not be taken as a definitive assessment of a location's overall historic and cultural resources sensitivity for an area. Classifications of risk in the model may not correspond to actual presence or absence of features in any location. For instance, steep slopes may be classified in the model as having low risk to contain archaeological sites; however, highly sensitive and significant sites may be present, such as pictographs, open interments, and cache pits. The *Historic and Cultural Resources Technical Report* includes discussions of the

predictive model and variables that influence probability, model results within the study area, potential regulatory implications of model risk classifications, and planning considerations when using the model.

3.2.2 Natural resources associated with Tribal use

Natural resources of interest to Tribes include but are not limited to plants, animals, water, and natural settings. Natural resources can be used for food, medicine, or spiritual purposes. Areas important to traditional cultural practices and the natural resources associated with those practices include waterways, trails, plants, wildlife, or fish used for commercial, subsistence, and ceremonial purposes. Natural resources with potential significance as Tribal rights, interests, and resources may also include landforms with an important role in oral histories or use of the landscape.

An important component of Tribal natural aesthetics is the relationship between landforms, skies, and traditional practitioners. As noted in the *Aesthetics/Visual Quality Technical Resource Report*, sensitive viewers of some areas could include members of Tribes, and some landscapes can have special meaning because of Tribal connections or values. Tribal interests in aesthetics and visual quality may range from expansive scenery to site-specific characteristics. Local, intermediate, and distant horizons can provide a context within which natural and cultural resources are understood in culturally integrated ways.

Culturally significant plants are often used for medicine, food, clothing, basketry, structures, and aesthetic or ritual purposes. Plant gathering is an essential subsistence and cultural activity for many Tribes that is documented in ethnographic literature, Tribal histories and accounts, and archaeological sites. Plants were historically and are currently gathered for food, medicine, and ritual uses, as well as raw material for tools, clothing, basketry and mats, and other uses. Participation by Tribal members in those gathering activities can be a part of cultural identity.

Plants and animals within the study area provide important subsistence and medicinal resources. The *Biological Resources Technical Report* discusses a high-level review of the resources that may be present within the study area, including a characterization of the large study area for the onshore wind PEIS based on the Level III Ecoregions identified for the state by the U.S. Environmental Protection Agency. These ecoregions are briefly described below with example terrestrial, avian, aquatic resources (Table 2).

The onshore wind study area includes portions within all nine of the state's ecoregions. Ecoregions are geographic areas where ecosystems, and the type, quality, and quantity of environmental resources that compose them, are generally similar (USEPA 2023). They are based on a framework derived from Omernik (1987) and were developed by grouping areas using patterns of similarity in the various biotic, abiotic, terrestrial, and aquatic ecosystem components of a landscape. Ecoregions typically include combinations of geology, landforms, soils, vegetation, wildlife, climate, and hydrology.

Resources identified include priority and critical habitats; aquatic, terrestrial, and air habitats; and migration routes, including the following:

- Terrestrial (including waterfowl), aquatic (including amphibious), and wetland animals and plants
- Terrestrial habitats including USFWS critical habitats; 75 National Audubon Society-defined Important Bird Areas; Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) priority habitats (e.g., Aspen Stands, Riparian, Biodiversity Areas and Corridors, Shrubsteppe); and habitat features such as caves, cliffs, snags and logs, and talus
- Vertical air space above ground that is typically used by bird, bat, and other flying species
- Vertical depths below ground that may be used by burrowing species
- Freshwater and marine aquatic habitats, including critical habitat determined by National Oceanic and Atmospheric Administration Fisheries Service and USFWS, and the following PHS priority habitats identified by WDFW: Instream, Freshwater Wetlands and Fresh Deepwater, Open Coast Nearshore, and Puget Sound Nearshore habitat types
- Migration routes and corridors used by wildlife and fish

The *Biological Resources Technical Report* also provides an overview of species that are present and details the threatened and endangered species, as well as noxious weeds recorded within the study area.

Water plays an important role in the histories and oral traditions of Tribes. Key issues associated with water include access, available amounts, quality, and plants and animals supported by the water. Some of the waterbodies in the study area include springs, seeps, lakes, and rivers. The Columbia River, for instance, is considered to be especially important because Tribal communities have been connected to the places and resources of the Columbia River basin since time immemorial. This river and many other waterbodies in Washington are important for transportation, subsistence, community, history, and spiritual practices for many Tribes.

Table 2. Level III Ecoregions in the study area

Level III Ecoregion	Major habitat type	Description
Coast Range	Olympic mountain range, coastal plain, temperate rainforest, alpine meadows	This region of low mountains is covered by coniferous forests of Sitka spruce, Douglas fir, western red cedar, and western hemlock. Major river systems include the lower Columbia, Chehalis, Newaukum, Skookumchuck, Black, Soleduck, Bogachiel, Hoh, Queets, Quinault, Humptulips, and Wynoochee rivers, which all drain to the ocean, and the Elochoman, Grays, and Deep rivers, which drain to the lower Columbia River. Three major estuaries are also present: Columbia River, Willapa Bay, and Grays Harbor. This ecoregion contains aquatic resources such as mollusks, Chinook and coho salmon, lamprey, and steelhead trout. Migratory and resident bird species, deer, elk, and beaver are present as well as black bear, wild cats, and coyote.
Puget Lowland	Coniferous forest, floodplains, oak woodlands, prairies	A broad rolling lowland within a glacial trough containing islands, bays, and peninsulas in the Puget Sound area. The native forest is predominantly Douglas fir, western hemlock, and western red cedar. Bigleaf maple and red alder grow in riparian areas. Surface water systems are highly variable and characterized by low-gradient, meandering streams and rivers, oxbow lakes, meander scar wetlands, and both estuarine and freshwater wetlands in riverine lowland areas that enter Puget Sound. The ecoregion also contains the upper portions of the Chehalis and Cowlitz river basins with meandering streams and oxbow lakes in the lower Cowlitz and Newaukum river floodplains. Major river systems include the Skagit, Stillaguamish, Snohomish, and Nisqually rivers, which all drain to Puget Sound, and the Cowlitz, Coweeman, and Toutle rivers, which drain to the lower Columbia River. Migratory and resident avian species and aquatic resources such as Chinook salmon, steelhead trout, and mollusks are present. Terrestrial species include deer, elk, beaver, bear, wild cats, and fox.
Willamette Valley	Prairies, deciduous/ coniferous forests, wetlands	The broad, lowland valley consists of terraces and floodplains surrounded by rolling hills featuring oak savanna and woodlands, Douglas fir forests, and prairies. Surface water systems in the portion of this ecoregion that occur in the study area are characterized by meandering streams, numerous wetlands, oxbow lakes, and ponds. Major river systems in this ecoregion include a portion of the lower Columbia River, the Washougal River, and the lower portions of the East Fork Lewis and Lewis rivers, all of which drain to the Columbia River. The area contains aquatic resources including lamprey, salmon, and trout, as well as migratory and resident birds, deer, fox, and beaver.
Cascades	Cascade mountain range, volcanoes, glaciers, coniferous forests, subalpine meadows	Contains steep ridges and river valleys to the west and high plateau to the east. Rocky alpine zones and subalpine meadows occur at high elevations, with coniferous forests of Douglas fir, western hemlock, and western red cedar. Surface water systems typically include modern reservoirs and medium-gradient rivers and streams occurring in u-shaped, glaciated valleys in the lowlands; high- to medium-gradient

Level III Ecoregion	Major habitat type	Description
		streams and glacial rock-basin lakes occurring in montane highlands; sinuous, medium-gradient streams, glacial rock-basin lakes, and small lakes on collapsed lava flows and wetlands in montane forested areas; and cascading streams and glacial tarns in subalpine/alpine areas. Major river systems in this ecoregion include the upper portions of the Cowlitz, Lewis, East Fork Lewis, Kalama, North Fork Toutle, and Cispus rivers, which flow to the Columbia River, and the Puyallup, Carbon, Green, White, Duwamish, and West Fork White rivers, which all flow toward Puget Sound. Terrestrial wildlife includes elk, deer, black bear, beaver, fox and wild cats. Aquatic resources include mollusks, salmon, and trout species.
Eastern Cascades Slopes and Foothills	Coniferous forest, sagebrush steppe, grassland	The region is composed of gentle to steeply sloped mountains and plateaus within the rain shadow of the Cascade Range. This region is one of Washington's most heavily forested areas, with open ponderosa and lodgepole pine forests. Surface water systems typically include medium- to high-gradient, permanent and intermittent streams and rivers running through canyons, with springs commonly occurring in the Yakima Plateau and associated slopes; high-gradient, permanent streams and rivers with scattered glacial rock-basin lakes in areas dominated by grand fir mixed forests; and permanent and intermittent, mostly medium-gradient streams and rivers in the eastern Cascades and Columbia foothills. Major river systems in this ecoregion include the Little White Salmon, White Salmon, and Klickitat rivers and a small section of the Yakima River, which all flow to the Columbia River. Water systems support a variety of salmon and trout species. Waterfowl, migratory and resident avian species are present. Terrestrial species include deer, black bear, wild cats, and coyote.
Columbia Plateau	Shrubsteppe, fertile agricultural lands, Palouse hills	The Columbia Plateau features plateaus and gently rolling hills with intermittent streams and incised valleys. Surface water systems typically include perennial, intermittent, and ephemeral streams, some of the larger of which flow through steep river canyons and coulees, that are tributaries to the Columbia River. Multiple human-created reservoirs are present and primarily used to supply hydroelectric power and irrigation water for the extensive agricultural uses that occur throughout this ecoregion. Extensive emergent wetlands currently supported by irrigation runoff are present as are riparian wetlands. Major river systems in this ecoregion include a portion of the middle Columbia River, as well as portions of the Yakima, Snake, Clearwater, Spokane, Walla Walla, and Okanogan rivers, all of which flow to the Columbia River. Large human-created reservoirs are also present, including multiple impoundments on both the Columbia River (Priest Rapids Lake, Lake Wanapum, Lake Entiat Rock Island Pool, Lake Pateros, Rufus Woods Lake, and part of Franklin Delano Roosevelt Lake) and the Snake River (Lake Sacajawea, Lake Herbert G. West, Lake Bryan). Other reservoirs such as Potholes Reservoir, Banks Lake, and Billy

Level III Ecoregion	Major habitat type	Description
		Clapp Lake have been created by flooding potholes and coulees that were originally carved out by multiple cataclysmic floods from Glacial Lake Missoula during the Pleistocene epoch. These river systems historically supported diverse aquatic species, with efforts underway to restore fish passage and populations. The area is dominated by arid sagebrush steppe and grassland supporting deer, antelope, jackrabbit, and migratory and resident avian species.
Blue Mountains	High plateau, coniferous forest, Palouse prairie, rimrock canyons	Mountain ranges in southeastern Washington that are generally lower and more open than the neighboring Cascades region and the Northern Rockies. Coniferous forests dominate the region, consisting of species such as ponderosa pine, Douglas fir, western larch, and Engelmann spruce. Higher reaches of the mountains are cold and wet while lower elevations are hot and dry. Surface water systems include perennial streams and rivers that typically run down relatively steep slopes and through the bottom of moderately steep river valleys. Major river systems in this ecoregion include the Snake, Grande Ronde, and upper portion of the North Fork Touchet rivers, all of which drain to the Columbia River. Multiple salmon and trout species are supported by the water systems. Wildlife also includes deer, elk, black bear, sheep, wild cats, and migratory and resident avian species.
Northern Rockies	Boreal forest, alpine meadows, riparian woodlands, grasslands	Mountainous region with alpine characteristics found at the highest elevations. Boreal weather patterns influence the north while inland maritime patterns influence the south. Marine-influenced vegetation such as Douglas fir, ponderosa pine, and subalpine fir dominate. Major river systems in this ecoregion include the south-southeast flowing Columbia River, north-flowing Pend Oreille River, south-flowing Kettle River, and the west-northwest flowing Spokane River. Multiple glacial kettle lakes are also present, and a portion of the impounded Columbia River known as Franklin Delano Roosevelt Lake also extends into this ecoregion from the adjacent Columbia Plateau ecoregion. These water systems historically supported diverse and large quantities of aquatic resources and efforts are underway to restore migration and populations. Deer, goat, black and grizzly bear, wild cats, rabbit species, and migratory and resident avian species are present.
North Cascades	Cascade mountain range, subalpine parklands, coniferous forests, deciduous forests	High rugged mountains with active alpine glaciers and incised valleys. Features a diverse climate with dry conditions in the east and mild, maritime rainforest conditions in the west. Coniferous forests of western red cedar, Douglas fir, and western hemlock intermix with riparian areas that support broadleaf trees such as bigleaf maple and red alder. Surface water systems are highly variable and include perennial medium-gradient, glacial-fed rivers and streams, reservoirs, and glacial lakes common in lowland forested areas; cascading glacial streams and glacial rock-basin lakes in highland forests; high-gradient, sediment laden, glacial meltwater streams and glacial rock-basin lakes in alpine and subalpine areas; small glacial rock-basin lakes and both

Level III Ecoregion	Major habitat type	Description
		permanent and intermittent high-gradient streams in the highlands around the Pasayten River and Sawtooth Mountain range; medium- to high-gradient, permanent and intermittent streams and rivers, with some alpine glacial rock-basin lakes and irrigation storage reservoirs in the Okanogan hills; medium- to high-gradient rivers and streams and glacial rock-basin lakes in the Chelan tephra hills; high-gradient streams and rivers, with some glacial rock-basin lakes in the Wenatchee/Chelan highlands; steep-gradient perennial and intermittent streams with high sediment loads and a general trellis-shaped drainage pattern in the Chiwaukum Hills and Lowlands region; and cascading glacier-fed streams and glacial rock-basin lakes in the high Olympic Mountain region. Major river systems in this ecoregion include the Skagit, Stillaguamish, Snohomish, and Nooksack rivers. Some drainages have been dammed for hydroelectric power, creating large reservoirs such as Ross and Baker lakes and impacting historic fish populations. Deer, goat, sheep, beaver, and wild cats are present. Migratory and resident avian species and salmon and trout are also present.

Sources: Omernik 1987; Bryce and Woods 2000; USEPA 2023; WDFW 2005

3.2.3 Other Tribal rights and interests

Tribal interests extend beyond traditional cultural and natural resources and into all elements of the environment analyzed by the PEIS. Areas of recreational use for Tribal members may exist off-reservation, may not be otherwise designated for broader recreational use, and may include Tribal recreational uses that are sensitive to impacts. Changes to transportation routes may interfere with access to culturally significant resources, health and safety, or economic activity.

3.3 Potentially required permits and approvals

There are no specific permit requirements that pertain to Tribal rights, interests, and resources. Other PEIS technical appendices identify potentially required permits for other resources, such as cultural and historic resources, biological resources, water resources, and land use, which may include elements related to Tribal rights, interests, and resources.

3.4 Impact assessment

3.4.1 Impacts from construction and decommissioning

The PEIS evaluates utility-scale onshore wind facilities that could be constructed over the next approximately 20 years. The time needed to construct each facility, after site characterization, environmental review, and permitting are completed, would vary but is expected to be between 6 and 24 months for an onshore wind facility.

Most site characterization activities would involve little or no ground disturbance. However, some ground-disturbing activities, such as drilling deep soil cores and building access roads, could impact Tribal rights, interests, and resources. Accessing portions of the study area in steeper or remote areas, or mountainous terrain, may require additional site grading and clearing and grubbing if existing routes are unavailable or unsuitable for the planned investigation equipment.

Activities that could impact Tribal resources during construction include ground disturbance, restrictions to access, degradation of visual quality, noise, and interruption of the landscape, habitats, and species. Heavy equipment use would vary during the site preparation and construction activities. The construction phase would also include soil coring, pile driving, and the construction of meteorological towers. Blasting may be needed for construction of facilities (e.g., wind turbine foundations) and may occur as part of site preparation activities, depending on subsurface conditions.

Tribal spiritual practices could be interrupted by construction impacts to land areas and cultural or sacred sites. Access to and use of traditional gathering areas for medicinal and traditional plants and foods could be disrupted by noise and dust emissions, restricted during construction, or permanently lost.

The *Biological Resources Technical Report* identifies potential impacts to habitats and species varying from short-term to long-term impacts. Examples of potential impacts include fragmentation of ecological communities that may affect the diversity of plant and animal species and migration patterns of animals; temporary vegetation removal and long-term re-establishment; changed ground conditions, such as soil compaction and minor drainage alterations, which may impact the ability of former biological communities to reestablish; and changes in water chemistry, temperature, or stream bottoms that affect aquatic species. Construction of an onshore wind facility could result in the direct or indirect mortality of species and changes to habitats. Construction of facilities could result in impacts to larger animals such as deer, bobcats, coyotes, and foxes. Small mammals may also be affected, especially mice, shrews, and voles.

Construction could result in impacts to birds if they are present or near the construction areas. Breeding and pre-fledged birds are more likely to be directly affected by vegetation clearing, noise, and other construction activities, which could result in elimination of nesting and perching sites. These persistent disruptions could impact normal behavior of birds that are unable to leave the disturbance areas. If breeding and nesting sites are less than 0.5 mile from blasting activities, birds could experience impacts, which may impact species viability.

Clearing, grading, and excavation of the facility area and construction of facilities and associated infrastructure could result in impacts to archaeological sites, sacred sites, burials, TCPs, and specific habitat for culturally important plant and wildlife species.

Construction impacts that degrade fisheries or impact migration patterns of terrestrial and avian species may impact traditional subsistence practices. The loss of Tribal connections and

educational opportunities that result from restricted access to Tribal resources could disrupt and degrade Tribal members' health and mental well-being.

Access to Treaty-reserved fishing areas and food harvesting areas may be limited during construction. Construction could impact terrestrial mammals associated with Tribal use and could interrupt hunting and other cultural practices.

Impacts to Tribal gathering areas may affect other Tribes and surrounding non-Native American communities that share a resource. Tribes have stated that impacts to Tribal members' ability to participate in, teach, learn, and share cultural practices affect the mental, spiritual, and physical health of Tribal members. Restrictions to access and removal of areas used for cultural practices could indirectly affect entire Tribal communities and multiple generations.

Degradation and/or destruction of an important location or habitat, located on or near the facilities, could result from the alteration of topography, alteration of hydrologic patterns, removal of soils, erosion of soils, runoff into and sedimentation of adjacent areas, and releases of oil or other contaminant spills. Such degradation could occur both within the facility footprint and in areas downslope or downstream.

Modifications of natural flow systems, including effects on floodplains, wetlands, and riparian areas and possible degradation of surface water quality could occur as a result of construction (and operation) activities. In addition to potential impacts to biological resources, water quality impacts may affect a Tribe's water use for drinking and in ceremonial, subsistence, and other cultural practices.

Increases in human access and subsequent disturbance (e.g., looting, vandalism, and trampling) of resources of significance to Tribes could result from the establishment of corridors or facilities in otherwise intact and inaccessible areas. Increased human access exposes plants, animals, archaeological sites, historic structures and features, and other culturally significant natural features to greater probability of impact from a variety of stressors.

Information on potential impacts from site characterization and construction that relate to Tribal resources is also included in the *Earth Technical Resource Report, Noise and Vibration Technical Resource Report*, *Aesthetics/Visual Quality Technical Resource Report*, and *Air Quality and Greenhouse Gases Technical Resource Report*. Because of the very large size of wind turbine towers, blades, and other components, the transport and installation of wind turbines on site are visually conspicuous activities during the construction period. Visual degradation of settings associated with significant cultural resources and sacred landscapes could result from the presence of a utility-scale onshore wind energy facility and associated land disturbances and ancillary facilities. This could affect significant resources for which visual quality is a component of the sites' significance to the Tribes, such as sacred sites, spiritual sites, landscapes, and trails.

Noise, aesthetics, and air quality impacts from constructing energy facilities and associated land disturbances may degrade settings associated with significant cultural resources and sacred

landscapes. This could affect the nature and peacefulness of a culturally significant location and adversely affect Tribal rights, including hunting grounds and subsistence resources.

The types of impacts to Tribal rights, interests, and resources during decommissioning activities would be similar to those associated with facility construction. Access to the site after decommissioning would depend on land ownership, leases, and permitting conditions.

Decommissioning activities would likely include the dismantling and removal of all aboveground structures as well as some underground structures. Foundations may be removed to a level of 3 feet or more below the ground surface, while cables, lines, or conduit that are buried 3 feet below grade or more are not expected to be removed. However, the depth to which facilities and infrastructure would be removed would likely depend on agreements with landowners and would need to be in accordance with applicable regulatory requirements. Service roads may be removed or may remain depending on agreements with the new or existing owner of the land. Site restoration activities may include recontouring, grading, scarifying, seeding and planting, and perhaps stabilizing disturbed surfaces.

Ground disturbance may emit dust and result in erosion with potential to impact cultural and natural resources with importance to Tribes. Vehicle and equipment traffic has potential to introduce invasive species that can quickly establish in disturbed areas. During decommissioning activities, there could also be an increase in noise and visual disturbance associated with removal of infrastructure and site restoration.

Newly disturbed ground could create a visual contrast that could persist for several seasons before vegetation could begin to mature and restore the pre-facility visual landscape. Complete restoration of vegetation to pre-facility conditions, along with the return of species and functioning habitats, may take years, with some habitats, such as shrubsteppe, potentially taking decades. Invasive species may colonize newly and recently reclaimed areas and could produce visual contrasts. Vegetation restoration at some decommissioned facilities may be more challenging due to factors such as region, soil degradation, the extent of invasive species colonization, a change in seed dispersal patterns, or degradation of adjacent habitats. The length of time it takes for native vegetation to reestablish varies greatly depending on location, weather patterns, soil fertility, surrounding land use, and the type of vegetation planted or recruited.

It is assumed that wildlife habitat disturbance would primarily occur in the previously disturbed areas, but the degree of impact could vary depending on how much the previously disturbed habitat had recovered during the operational phase. Wildlife could be affected by changes depending on the extent of infrastructure that would need to be removed and site restoration activities. Similar to construction, decommissioning could also result in disturbance or mortality of species if those species are unable to avoid the decommissioning activities.

When an onshore wind energy facility reaches the end of its design life, repowering may be an option instead of decommissioning. Repowering consists of replacing (partially or totally) the old wind turbines with more powerful and more efficient models using the latest technologies.

Impacts associated with onshore wind facility repowering may include some of those associated with facility construction, including redeveloping access routes and disturbance in areas of construction and staging, and would include a longer period of ongoing operations.

3.4.2 Impacts from operation

For the PEIS, the expected operational life is approximately 25 to 30 years for the onshore wind facilities. This is the operations period beginning after a facility is constructed. Operational activities that could affect Tribal resources include those identified as impacts associated with construction that continue into operations, as well as some additional impacts.

Biological resources may be affected by continued fragmentation, bird and bat strikes, vegetation maintenance and fire suppression, and increased traffic, as well as increased potential to introduce invasive species. Operations would result in adverse effects to wildlife, particularly birds and bats, depending on number, sizes, and locations of the turbines, meteorological towers, and powerlines in relation to bird and bat activities. Birds and bats are at risk of collisions with wind turbines, and all wildlife may be potentially affected by noise, vehicle traffic, hydrologic changes, and runoff. Changes in access to other natural and cultural resources may accompany increased human activity with associated erosion, noise, light, dust, and human presence.

Ongoing operations and maintenance are anticipated to include little new ground disturbance, as the use of maintenance vehicles and equipment would generally be limited to access roads and designated areas that were developed during construction. However, air quality impacts from vehicle and dust emissions, ongoing noise and visual impacts, and facility fencing or other access restrictions may continue to impact Tribal rights, including hunting grounds and subsistence resources.

Erosion, compaction, trampling, or exposure of Tribal resources or unrecorded archaeological sites could occur due to vehicles, equipment, and workers on access roads; ongoing maintenance activities; and vegetation management or co-located agricultural activities such as livestock grazing or farming. Ongoing ground disturbance could reveal previously unknown resources, such as archaeological sites and historic subsistence areas. Additionally, impacts that degrade fisheries, affect migration patterns of species, and reduce biodiversity or impact ecological communities from long-term vegetation management may impact subsistence and medicinal use of plants.

Changes in access to facility locations may result in impacts to Tribal rights, interests, and resources during facility operations by restricting access to areas used for resource gathering, hunting, fishing, and other ritual and cultural activities. This includes access to Tribal treaty fishing areas. Some Tribal spiritual, subsistence, and other cultural practices need access to sustain connection with places and resources and to pass along knowledge.

The very large sizes and strong geometric lines of both the individual turbines themselves and the array of turbines could dominate views, especially if located on ridgelines where they would be visible against the skyline. The presence of aircraft warning lights would greatly increase

visibility of the turbines at night, because the synchronized flashing red warning lights or strobes could be visible for long distances. However, state law requires lights to be activated only when needed for aircraft safety and would otherwise remain off. As wind turbine blades spin under sunny conditions, they may cast moving shadows on the ground or nearby objects, resulting in alternating light intensity (flickering) as each blade shadow crosses a given point. If the duration and intensity of shadow flicker is sufficient, it can cause a nuisance to viewers.

As noted in the *Aesthetics/Visual Quality Technical Resource Report*, sensitive viewers of the landscape could include members of Tribes. Air quality, visual changes, and noise can affect the spirituality and well-being of the viewer. For areas of cultural importance to the Tribes, any change in landscape view could result in impacts to visual quality. If in an area of cultural importance to Tribes, changes in landscape view could disrupt sacred religious and ceremonial practices and impact TCPs.

3.5 Measures to avoid, reduce, and mitigate impacts

Site-specific mitigation measures would be developed during project-specific reviews and permitting for each facility proposed in the future. Project proposals may involve potential impacts to the rights, interests, and resources of multiple Tribes. Tribal engagement and government-to-government consultation with all potentially affected, federally recognized Tribes should begin early to provide information and identify potential project impacts. Timely and frequent communication about project changes should be provided to Tribes.

Mitigation may be developed through consultation with affected Tribes as part of the SEPA process. Mitigation may also be developed under federal Section 106 of the National Historic Preservation Act; this is a separate, federal process outside of the state's SEPA process.

The PEIS identifies a variety of measures to avoid, reduce, and mitigate impacts. These measures are grouped into five categories:

- **General measures:** The general measures apply to all projects using the PEIS.
- **Recommended measures for siting and design.** These measures are recommended for siting and design in the pre-application phase of a project.
- **Required measures:** These measures must be implemented, as applicable, to use the PEIS. These include permits and approvals, plans, and other required measures.
- **Recommended measures for construction, operation, and decommissioning:** These measures are recommended for the construction, operation, and decommissioning phases of a project.
- **Mitigation measures for potential significant impacts:** These measures are provided only in sections for which potential significant impacts have been identified.

3.5.1 General measures

- **Laws, regulations, and permits:** Obtain required approvals and permits and ensure that a project adheres to relevant federal, state, and local laws and regulations.

  Rationale: Laws, regulations, and permits provide standards and requirements for the protection of resources. The PEIS impact analysis and significance findings assume that developers would comply with all relevant laws and regulations and obtain required approvals.

- **Coordination with agencies, Tribes, and communities:** Coordinate with agencies, Tribes, and communities prior to submitting an application and throughout the life of the project to discuss project siting and design, construction, operations, and decommissioning impacts, and measures to avoid, reduce, and mitigate impacts. Developers should also seek feedback from agencies, Tribes, and communities when developing and implementing the resource protection plans and mitigation plans identified in the PEIS.

  ***Rationale*:** Early coordination provides the opportunity to discuss potential project impacts and measures to avoid, reduce, and mitigate impacts. Continued coordination provides opportunities for adaptive management throughout the life of the project.

- **Land use:** Consider the following when siting and designing a project:
  - Existing land uses
  - Land ownership/land leases (e.g., grazing, farmland, forestry)
  - Local comprehensive plans and zoning
  - Designated flood zones, shorelines, natural resource lands, conservation lands, priority habitats, and other critical areas and lands prioritized for resource protection
  - Military testing, training, and operation areas

  ***Rationale*:** Considering these factors early in the siting and design process avoids and minimizes the potential for land use conflicts. Project-specific analysis is needed to determine land use consistency.

- **Choose a project site and a project layout to avoid and minimize disturbance:** Select the project location and design the facility to avoid potential impacts to resources. Examples include:
  - Minimizing the need for extensive grading and excavation and reducing soil disturbance, potential erosion, compaction, and waterlogging by considering soil characteristics
  - Minimizing facility footprint and land disturbances, including limiting clearing and alterations to natural topography and landforms and maintaining existing vegetation
  - Minimizing the number of structures required and co-locating structures to share pads, fences, access roads, lighting, etc.

***Rationale*:** Project sites and layouts may differ substantially in their potential for environmental impacts. Thoughtful selection of a project site and careful design of a facility layout can avoid and reduce environmental impacts.

- **Use existing infrastructure and disturbed lands, and co-locate facilities:** During siting and design, avoid and minimize impacts by:
  - Using existing infrastructure and disturbed lands, including roads, parking areas, staging areas, aggregate resources, and electrical and utility infrastructure
  - Co-locating facilities within existing rights-of-way or easements
  - Considering limitations of existing infrastructure, such as water and energy resources

  ***Rationale*:** Using existing infrastructure and disturbed lands and co-locating facilities reduces impacts to resources that would otherwise result from new ground disturbance and placement of facilities in previously undisturbed areas.

- **Conduct studies and surveys early:** Conduct studies and surveys early in the process and at the appropriate time of year to gather data to inform siting and design. Examples include:
  - Geotechnical study
  - Habitat and vegetation study
  - Cultural resource survey
  - Wetland delineation

  ***Rationale*:** Conducting studies and surveys early in the process and at the appropriate time of year provides data to inform siting and design choices that avoid and reduce impacts. This can reduce the overall timeline as well by providing information to agencies as part of a complete application for environmental reviews and permits.

- **Restoration and decommissioning:** Implement a Site Restoration Plan for interim reclamation following temporary construction and operations disturbance. Implement a Decommissioning Plan for site reclamation at the end of a project. Coordinate with state and local authorities, such as WDFW, county extension services, weed boards, or land management agencies on soil and revegetation measures, including approved seed mixes. Such plans address:
  - Documentation of pre-construction conditions and as-built construction drawings
  - Measures to salvage topsoil and revegetate disturbed areas with native and pollinator-supporting plants
  - Management of hazardous and solid wastes
  - Timelines for restoration and decommissioning actions
  - Monitoring of restoration actions
  - Adaptive management measures

  ***Rationale*:** Restoration and decommissioning actions return disturbed areas to pre-construction conditions, promote soil health and revegetation of native plants, remove

project infrastructure from the landscape, and ensure that project components are disposed of or recycled in compliance with all applicable laws and regulations.

- **Cumulative impact assessment:** Assess cumulative impacts on resources based on reasonably foreseeable past, present, and future projects. Identify measures to avoid, reduce, and mitigate cumulative impacts. Consider local studies and plans, such as comprehensive plans.

  ***Rationale*:** Cumulative impacts can result from incremental, but collectively significant, actions that occur over time. The purpose of the cumulative impacts analysis is to make sure that decision-makers consider the full range of consequences under anticipated future conditions.

3.5.2 Recommended measures for siting and design

- Site and design projects to avoid impacts to Tribal rights, interests, and resources.
- Contact potentially affected Tribes early in the siting process, ideally before land is acquired for a project or before permit applications are developed, and offer information relevant to Tribal technical staff to help identify potential impacts to Tribes.
- Include Tribal treaty-reserved rights, Tribal reservations, off-reservation rights, trust lands, other Tribal-owned land, and other areas of significance to Tribes in consideration of potential impacts and mitigation.
- Consider including a Tribal monitor from each potentially affected Tribe on archaeological survey crews to provide input on Traditional Cultural Properties, sacred sites, and culturally significant sites.
- Tribal preferred aesthetic or visual quality mitigation practices may vary from those considered for other visual quality mitigation; consult with potentially affected Tribes on any aesthetic or visual quality mitigation practices.

3.5.3 Required measures

There are no specific permit requirements that pertain to Tribal rights, interests, and resources. Other PEIS technical appendices identify potentially required permits for other resources, such as cultural and historic resources, biological resources, water resources, and land use, which may include elements related to Tribal rights, interests, and resources.

3.5.4 Recommended measures for construction, operation, and decommissioning

- Maintain open Tribal access routes during construction, operations, and decommissioning and consider timing of activities to avoid disrupting Tribal access to sites and resources.

Many of the general measures and recommended measures for construction, operation, and decommissioning listed for other resources may apply to Tribal rights, interests, and resources.

Additional project-specific measures would be determined after engagement and consultation with Tribes.

3.5.5 Mitigation measures for potential significant impacts

The significance of impacts to Tribal rights, interests, and resources can only be understood from within the cultural context of an affected Tribe. This will depend on the project and the potentially affected Tribes. Determining if mitigation options would reduce or eliminate impacts below significance would be dependent on the specific project and site. Project-specific mitigationactions to be determined after engagement and consultation with Tribes.

4 References

Bryce, S.A., and A.J. Woods, 2000. *Level III and IV Ecoregion Descriptions for Washington*. December 14, 2000; revised by G. Griffith on October 5, 2010. Available at: https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-state.

CRITFC (Columbia River Inter-Tribal Fish Commission), 2022. *Energy Vision for the Columbia River Basin*. Available at: https://critfc.org/energy-vision/.

DAHP (Washington State Department of Archaeology and Historic Preservation), 2010. *Statewide Predictive Model*. Last modified 2010. Accessed July 15, 2024.

DAHP, 2020. *The Washington State Historic Preservation Plan 2021-2026: Inhabiting Our History*. Available at: https://dahp.wa.gov/sites/default/files/Final%20State%20Preservation%20Plan_2.pdf.

NPS (National Park Service), 1997. *How to Apply the National Register Criteria for Evaluation*. National Register Bulletin No. 15, U.S. Department of Interior, National Park Service Cultural Resources. Government Printing Office, Washington, D.C.

NPS, 2000. *Guidelines for Evaluating and Registering Archeological Properties*. National Register Bulletin No. 36, U.S. Department of Interior, National Park Service Cultural Resources. Government Printing Office, Washington.

Omernik, J.M., 1987. Ecoregions of the Conterminous United States. Map (scale 1:7,500,000). *Annals of the Association of American Geographers* 77(1):118–125.

Parker, P., and T. King, 2012. *Guidelines for Evaluating and Documenting Traditional Cultural Properties*. U.S. Department of Interior National Park Service, Washington, D.C.

Ray, V.F., 1939. "Cultural Relations in the Plateau of Northwestern America." *Publications of the Frederik Webb Hodge Anniversary Publication Fund* 3:1–154. Los Angeles: The Southwest Museum.

Rinkevich, S., K. Greenwood, and C. Leonetti, 2011. *Traditional Ecological Knowledge for Application by Service Scientists Fact Sheet*. U.S. Fish and Wildlife Service, Native American Program. Available at: https://www.fws.gov/sites/default/files/documents/TEK-Fact-Sheet.pdf.

Smith, M.W., 1969. *The Puyallup-Nisqually*. New York: AMS Press.

Teit, J., 1928. "The Middle Columbia Salish." *University of Washington Publications in Anthropology* 2:83–128. Seattle: University of Washington Press.

USEPA (U.S. Environmental Protection Agency), 2023. "Ecoregions." Accessed March 4, 2024. Available at: https://www.epa.gov/eco-research/ecoregions.

WDFW (Washington Department of Fish and Wildlife), 2005. *Washington's Comprehensive Wildlife Conservation Strategy*. Accessed March 25, 2025. Available at: https://wdfw.wa.gov/sites/default/files/publications/00727/wdfw00727.pdf

Waterman, T.T., 2001. *Puget Sound Geography*. Editors, Vi Hilbert, Jay Miller, and Zalmai Zahir. Federal Way, Washington: Lushootseed Press.

Working Group, 2022. *Best Practices for Identifying and Protecting Tribal Treaty Rights, Reserved Rights and Other Similar Rights in Federal Regulatory Actions and Federal Decision-Making*. Working Group on the Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty Rights and Reserved Rights. Advisory Council on Historic Preservation, U.S. Department of Agriculture, U.S. Department of Commerce, U.S. Department of Defense, U.S. Department of Education, U.S. Department of Energy, U.S. Department of Homeland Security, U.S Department of Housing and Urban Development, U.S. Department of the Interior, U.S. Department of Justice, U.S. Department of Labor, U.S. Department of State, U.S. Department of Transportation, U.S. Department of Veterans Affairs, U.S. Environmental Protection Agency, U.S. Office of Personnel Management, White House Council on Environmental Quality, Washington, D.C. Available at: https://www.bia.gov/sites/default/files/dup/inline-files/best_practices_guide.pdf.